

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM S-1
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

BLUE WATER VACCINES, INC.

(Exact name of registrant as specified in its charter)

Delaware	2834	83-2262816
(State or other jurisdiction of incorporation or organization)	(Primary Standard Industrial Classification Code Number)	(I.R.S. Employer Identification No.)

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Approximate date of commencement of proposed sale to the public: As soon as practicable after the effective date of this registration statement.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box:

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	<input type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input checked="" type="checkbox"/>	Smaller reporting company	<input checked="" type="checkbox"/>
		Emerging growth company	<input checked="" type="checkbox"/>

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act.

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered	Proposed Maximum Aggregate Offering Price⁽¹⁾	Amount of Registration Fee⁽²⁾
Common Stock, \$0.00001 par value per share ⁽³⁾	\$ 23,000,000	\$ 2,132.10
Representative's Warrants ⁽⁴⁾		
Common Stock underlying Representative's Warrants ⁽⁵⁾	\$ 1,322,500	\$ 122.60
Total	<u>\$ 24,322,500</u>	<u>\$ 2,254.70⁽⁶⁾</u>

- (1) Estimated solely for the purpose of calculating the amount of the registration fee in accordance with Rule 457(o) under the Securities Act. Includes the offering price of additional shares that the underwriters have the option to purchase to cover over-allotments, if any.
- (2) Registration fee will be paid when registration statement is first publicly filed under the Securities Act.
- (3) Pursuant to Rule 416 under the Securities Act, the shares registered hereby also include an indeterminate number of additional shares as may from time to time become issuable by reason of stock splits, distributions, recapitalizations, or other similar transactions.
- (4) In accordance with Rule 457(g) under the Securities Act, because the shares of the registrant's Common Stock underlying the Representative's warrants are registered hereby, no separate registration fee is required with respect to the warrants registered hereby.
- (5) The Warrants are exercisable at a per share exercise price equal to 115% of the public offering price of the shares of Common Stock.
- (6) Paid herewith.

The Registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment that specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act, or until the registration statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said section 8(a), may determine.

The information in this preliminary prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This preliminary prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED _____, 2021



Shares

Common Stock

This is the initial public offering of our common stock. Prior to this offering there has been no public market for our common stock. We are offering _____ shares of common stock. We currently expect the initial public offering price to be between \$ _____ and \$ _____ per share.

We intend to apply to list our common stock on the Nasdaq Capital Market, or Nasdaq, under the symbol "BWV."

We are an "emerging growth company" as that term is defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act, and, as such, have elected to take advantage of certain reduced public company reporting requirements for this prospectus and future filings.

Investing in our common stock involves a high degree of risk. Please read "Risk Factors" beginning on page 12 of this prospectus.

	Per Share	Total
Public offering price	\$ _____	\$ _____
Underwriting discounts and commissions ⁽¹⁾	\$ _____	\$ _____
Proceeds to us, before expenses	\$ _____	\$ _____

(1) We have also agreed to reimburse the underwriters for certain expenses incurred by them and the underwriters will receive compensation in addition to underwriting discounts and commissions. See "Underwriting" beginning on page 148 of this prospectus for more information about the compensation payable to the underwriters, including reimbursable expenses.

We have granted to the underwriters an option to purchase up to _____ additional shares of common stock at the public offering price, less the underwriting discounts and commissions, for 45 days after the date of this prospectus. If the underwriters exercise the option in full, the total underwriting discounts and commissions payable by us will be \$ _____, and the total proceeds to us, before expenses, will be \$ _____, based on the assumed initial public offering price of \$ _____ per share (the midpoint of the estimated price range set forth on the cover page of this prospectus).

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.

Delivery of the common stock is expected to be made on or about _____, 2021.

Sole Book Running Manager

Maxim Group LLC

The date of this prospectus is _____, 2021

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We have not, and the underwriters have not, authorized anyone to provide any information or to make any representations other than those contained in this prospectus or in any free writing prospectus prepared by or on behalf of us or to which we have referred you. We and the underwriters take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. This prospectus is an offer to sell only the shares offered hereby, but only under the circumstances and in the jurisdictions where it is lawful to do so. The information contained in this prospectus or in any applicable free writing prospectus is current only as of its date, regardless of its time of delivery or any sale of our common stock. Our business, financial condition, results of operations and prospects may have changed since that date.

For investors outside the United States: We have not, and the underwriters have not, done anything that would permit this offering or possession or distribution of this prospectus or any applicable free writing prospectus in any jurisdiction where action for that purpose is required, other than in the United States. Persons outside the United States who come into possession of this prospectus and any applicable free writing prospectus must inform themselves, and observe any restrictions relating to, the offering of the common shares and the distribution of this prospectus outside the United States.

Through and including [redacted], 202 [redacted] (25 days after the date of this prospectus), all dealers that buy, sell or trade shares of our common stock, whether or not participating in this offering, may be required to deliver a prospectus. This delivery requirement is in addition to the obligation of dealers to deliver a prospectus when acting as underwriters and with respect to their unsold allotments or subscriptions.

We use our registered trademarks and trade names in this prospectus. This prospectus also includes trademarks, trade names and service marks that are the property of other organizations. Solely for convenience, trademarks and trade names referred to in this prospectus appear without the® and™ symbols, but those references are not intended to indicate that we will not assert, to the fullest extent under applicable law, our rights, or that the applicable owner will not assert its rights, to these trademarks and trade names. We do not intend our use or display of other companies' trade names or trademarks to imply a relationship with, or endorsement or sponsorship of us by, any other companies.

PROSPECTUS SUMMARY

This summary highlights selected information contained elsewhere in this prospectus, and does not contain all of the information that you should consider before investing in our common stock. This summary is qualified in its entirety by, and should be read in conjunction with, the more detailed information appearing elsewhere in this prospectus. You should read this entire prospectus carefully, including the information set forth in the sections titled “Risk Factors” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and our financial statements and related notes thereto included elsewhere in this prospectus, before making an investment decision. Unless the context requires otherwise, references in this prospectus to “we,” “us,” “our,” “our company,” or similar terminology refer to Blue Water Vaccines, Inc.

We are a biotechnology company focused on the research and development of transformational vaccines to prevent infectious diseases worldwide. Our versatile vaccine platform has unique molecular properties that enables delivery of various antigens, which can be utilized to develop singular or multi-targeted vaccines. Our lead influenza (flu) vaccine program uses proprietary technology to identify specific epitopes, or proteins, with cross-reactive properties that enables the potential development of a universal flu vaccine. We are focused on developing novel vaccines that induce durable and long-term immunity. We believe that our pipeline and vaccine platform are synergistic for developing next generation preventive vaccines to improve both health outcomes and quality of life globally.

Our pipeline includes novel vaccine candidates exclusively licensed from renowned research institutions. We seek to develop vaccines that provide long-lasting immunity to harmful viral and bacterial pathogens that cause infections in patient populations with high unmet needs. Our exclusive license agreements include patented influenza epitopes of limited variability, or ELV, identified through a proprietary computational research and discovery process, discovered by Dr. Sunetra Gupta and her team at the University of Oxford. Our collaborators are pioneers in vaccine discovery and development. We are exploring the development of these influenza ELV’s utilizing our Norovirus shell and protrusion (S&P) nanoparticle vaccine platform licensed from Cincinnati Children’s Hospital Medical Center, or CHMC. We are also utilizing our platform to develop a vaccine for the prevention of gastroenteritis cause by both norovirus and rotavirus. Our exclusively licensed *S. pneumoniae* vaccine candidate is from St. Jude Children’s Research Hospital. The vaccine is designed to prevent harmful middle-ear infections in children and is being developed for intranasal delivery, well suited for pediatric patients. We leverage the expertise of our collaborators to pursue the discovery and development of vaccines for these diseases, which are high unmet needs globally.

In addition, we have expertise in identifying business development opportunities for our platform vaccines technologies and portfolio. This allows for both internal pipeline expansion and the ability to generate non-dilutive revenue from potential licensing partners to utilize our discovery engine vaccine platform. There is potential for adjunctive or next generation therapeutic exploration to enhance current standard of care options.

Vaccination has been used as an effective method of protecting individuals against harmful diseases by utilizing the body’s natural defense system to develop resistance or immunity to infections (World Health Organization, <https://www.who.int/news-room/q-a-detail/herd-immunity-lockdowns-and-covid-19>). The body’s immune system naturally creates antibodies and cell-mediated immunity to defend against foreign pathogens. Vaccines introduce or present these foreign pathogens, prompting the body’s immune system produce a response protective against the pathogen without exposing the body to the relevant lethal or harmful infection (World Health Organization, <https://www.who.int/news-room/q-a-detail/herd-immunity-lockdowns-and-covid-19>). While vaccines are generally able to provide resistance against disease, many infectious diseases can evolve or mutate leading to shortcomings of traditional vaccines, such as yearly reformulations. We believe our vaccine candidates can provide an alternative to the current standards of care by harnessing durable and long-lived immune response to specific or multiple antigens.

The global vaccine market has recently experienced significant growth caused by rising awareness of the importance of immunization and vaccination benefits in emerging markets as well as by projects to fuel further global market expansion. For instance, The World Health Organization (WHO) has undertaken initiatives to increase immunization awareness through its Global Vaccine Action Plan and Global Immunization Vision and Strategy.

As such, market research professionals project the global vaccine market size to reach \$73.78 billion by 2028, representing a CAGR of 7.3% over the forecast period, driven by rising prevalence of infectious diseases, increasing government funding for vaccine production and growing emphasis on becoming immunized.

This market acceleration has been coupled with various strategic transactions in the sector, including consolidations and mergers and acquisitions in recent years. Major market participants have strategically acquired start-ups and mid-sized companies to broaden their products portfolios and service offerings. For instance, in February 2019, Bharat Biotech acquired Chiron Behring Vaccines, one of the leading manufacturers of rabies vaccines across the globe. Additionally, in October 2018, Emergent BioSolutions, a multinational specialty biopharmaceutical company, acquired PaxVax for \$270 million, and in July 2017 Sanofi acquired Protein Sciences for \$650 million. The appetite of these companies to buttress their vaccine programs and pipelines reflects the increasing importance of vaccines in the healthcare sector, both nationally and worldwide.

The U.S. Centers for Disease Control, or CDC, its Advisory Committee on Immunization Practices, or ACIP, and similar international advisory bodies develop vaccine recommendations for both children and adults. New pediatric vaccines that receive ACIP preferred recommendations are almost universally adopted, and adult vaccines that receive a preferred recommendation are widely adopted. We believe that our vaccine candidates will be well-positioned to obtain these preferred recommendations, by virtue of their longer and more durable immunity, which could drive rapid and significant market adoption.

Pipeline

Our vaccine candidates are being developed in a manner that is scalable, designed to be cost-effective and provide long-term benefit to patients from infectious agents.

Infectious Disease Program	Candidate	Preclinical	Phase 1	Phase 2	Phase 3	Licensee	Status
Universal Flu	BWV-101						1H22: pre-clinical POC
H1 pre-pandemic	BWV-102						1H22: start IND enabling studies
S. pneumo induced AOM (intranasal)	BWV-201						1H22: start IND enabling studies
Norovirus / Rotavirus	BWV-301						1H22: pre-clinical POC
Norovirus / Malaria	BWV-302						2H22: start IND enabling studies

Our Vaccine Platform

BWV Norovirus (NoV) S&P Nanoparticle Versatile Vaccine Platform

Our Approach to Stimulating the Immune System for Infectious Disease Protection

Our S&P platform was co-invented by two researchers, Xi Jason Jiang, Ph.D., and Ming Tan, Ph.D., of the Division of Infectious Disease at the Cincinnati Children’s Hospital Medical Center. The pre-clinical research conducted at CHMC provided encouraging data that we believe supports investigation and development of the platform for our vaccine candidates. The S&P platform combines two or more immunogenic components, a norovirus antigen plus at least one additional antigen, together creating novel constructs. The norovirus nanoparticle enhances immunogenicity.

Key Elements of our Platform

We are leveraging our disruptive norovirus nanoparticle platform to develop novel, broad-spectrum vaccines for adult and child infectious disease prevention by taking advantage of:

- *Flexible and Scalable discovery platform engine.* We believe we are able to design and create novel vaccines that are stable and scalable for broad spectrum prophylactics. Through this platform’s adaptability, we may opportunistically expand our pipeline and potentially collaborate with third parties for additional vaccines, as well as therapeutics.

- **Cost-effective and Rapid Production of Novel Vaccines.** We are potentially able to reduce the cost and time to manufacture a vaccine candidate by utilizing an *E.coli* expression platform, compared to traditional vaccine production which uses other, longer production-time platforms, such as Chinese Hamster Ovary (CHO) cells. We have bioengineered these nanoparticles to be stable and effective, determined through animal immunogenicity studies, using *E.coli* expression, which may provide cost savings and efficiency compared to other VLPs needing a eukaryotic expression system (Pharmaceutics 2019, 11, 472; doi:10.3390/pharmaceutics11090472).
- **Multi-antigen and Pathogen Capabilities.** The power of our platform is its ability to carry multiple antigens at a time, thereby creating a multi-targeted vaccine. It also provides the opportunity to develop vaccines for protection against not only viral pathogens, but also bacterial, parasitic and fungal pathogens.
- **Therapeutic potential.** We believe our platform may offer opportunities to develop non-infectious disease therapeutic products, for example, being used as a carrier or vehicle to transport drugs to specific target locations.

Our Vaccine Candidates

BWV-101 and BWV-102: Influenza vaccine program

The company's lead vaccine program is focused on developing a transformational novel universal influenza vaccine, BWV-101. This program is licensed from the University of Oxford, where all relevant studies were performed to support our hypothesis. We are developing a broad-spectrum vaccine using patented epitopes of limited variability, or ELV, that provide cross reactive immune response to multiple historical flu strains. Additionally, based upon the successful pre-clinical proof-of-concept (POC) of our H1 epitopes, we are developing a stand-alone H1 influenza vaccine, BWV-102, to provide a long-lasting induced immune response. This POC will be leveraged to develop BWV-101 by studying the cross-reactivity of different flu strains, H1, H3 and influenza B. Data in mice models have demonstrated proof of concept of neutralization against historical and current H1 strains, which includes annual and pandemic strains. This would negate annual flu shots, reformulation and potentially provide protection against future influenza pandemics. (Thompson et al. Nature Communications. 2018. 9:385).

BWV-201: Streptococcus pneumoniae (S. pneumoniae) vaccine program

We are developing BWV-201, licensed from St. Jude Children's Research Hospital, to prevent Acute Otitis Media, or AOM, in children and adults, a leading cause of hospital visits, prescription antibiotics and potentially permanent hearing loss. AOM due to *S. pneumoniae* infections range from 30 to 50% of all AOM infections each year (Monsata 2012 2012; 7(4): e36226). BWV-201 is a live attenuated serotype-independent intranasal vaccine candidate for *S. pneumoniae* induced AOM.

BWV-301: Norovirus-rotavirus vaccine program

We are developing a norovirus-rotavirus vaccine, BWV-301, to prevent gastroenteritis utilizing our S&P platform. Preclinical data from gnotobiotic pig studies have shown our vaccine can prevent severe gastroenteritis and reduces viral shedding. While rotavirus vaccines exist in the market, no norovirus vaccine is available to date. Our vaccine would protect people from two of the most globally prevalent viruses causing vomiting and diarrhea.

BWV-302: Norovirus-malaria vaccine program

Additionally, we are currently investigating a malaria vaccine, BWV-302, utilizing our norovirus S&P platform. The vaccine is designed to offer protection from both norovirus and malaria, infectious diseases that occur frequently together in geographic regions. The vaccine utilizes a protein identified on the surface of the plasmodium parasite being presented on the surface of the norovirus nanoparticle. Preclinical study results testing our vaccine design are expected in 2022.

Strategy

We aim to identify, discover and develop novel preventive vaccines for infectious diseases. Key elements of our strategy include:

- **Investment in advancing the development of our novel vaccine pipeline programs through IND-enabling activities and Phase I clinical studies.**
 - We plan to advance our main vaccine programs: influenza, *S. pneumoniae* induced AOM norovirus-rotavirus, and norovirus-malaria.
 - Our in-licensed vaccine candidates are carefully selected based on the following criteria: area of significant unmet medical need for preventive long-term vaccine; strong scientific rationale and established clinical and regulatory pathways; defined competitive landscape and potential future commercial opportunity; and license exclusivity.
- **Prioritizing the research and development for our lead influenza vaccine candidates, BWV-101 and BWV-102 through Phase I.**
 - Our goal is to develop a universal influenza vaccine that protects against all strains of influenza, including pandemic strains. In collaboration with The University of Oxford and CHMC, we are evaluating vaccine candidates to pursue the best development path forward to stimulate durable and broad-spectrum immunogenicity.
 - We will leverage the pre-clinical and clinical experience we gain from the development of BWV-102 to accelerate the development of the BWV-101 program. We expect that the manufacturing and clinical data collected will provide invaluable insight for development of the universal vaccine candidate.
- **Maximize and utilize the value of our collaborators and third-party vendors.**
 - We will combine disciplined business strategies to further expand the potential synergies with current collaborators.
- **Deploy and expand our proprietary norovirus S&P nanoparticle platform.**
 - Our immunogenic multi-purpose vaccine platform technologies can be utilized with an array of infectious disease agents to access multiple development pathways and allow for potential next-generation life cycle management to expand our pipeline and pursue business development opportunities. There is potential for the platform to pursue adjunctive therapies to currently available drugs, and for current therapies to be re-optimized and formulated to protect against multiple antigens.

As a preclinical stage biotechnology vaccine company, an investment in us is highly speculative because we have incurred and will incur substantial upfront capital expenditures and significant risk that any potential vaccine candidate will not gain regulatory approval or become commercially viable. We do not have any products approved for sale and have not generated any revenue from product sales. As a result, we are not profitable and have incurred losses in each year since inception. We estimate that, based on our existing cash as of June 30, 2021, we have cash on hand sufficient to fund our operations into the second quarter of 2022. Our ability to continue as a going concern beyond the second quarter of 2022 is contingent upon obtaining proceeds from this offering. We expect our existing cash as of June 30, 2021 together with proceeds from this offering will enable us to fund our operating expenses and capital expenditure requirements for at least 12 months from the date of this prospectus. However, we will need to raise additional capital beyond this offering prior to commencing pivotal trials for any of our vaccine candidates. If we cannot continue as a viable entity, our stockholders may lose some or all of their investment in our company.

Management and History

Blue Water Vaccines, Inc. was founded in October 2018 by our Chief Executive Officer, or CEO, Joseph Hernandez, with the initial goal of developing a transformational universal flu vaccine to treat and prevent infections in patients globally. Our initial technology, licensed from the University of Oxford, provides a novel approach to developing a universal influenza vaccine. Subsequently, our team has identified other program candidates and technologies to broaden and diversify our vaccine pipeline.

Mr. Hernandez, our Chairman and CEO, is a veteran entrepreneur, philanthropist, and operator with a broad skillset of founding, building, and selling companies, as well as executing business development transactions and securing private and public capital, including Digene, Noachis Terra and Blue Water Acquisition Corp. Mr. Hernandez was responsible for our initial \$7 million seed funding round from investors including CincyTech. In addition to his position as our Chairman and CEO, Mr. Hernandez also serves on the board of directors for Clarus Therapeutics, Inc. (Nasdaq: CRXT) in addition to certain other private companies. Subsequently, a team of veteran industry executives and advisors were assembled, bringing valuable expertise to our growing infectious disease company.

Erin Henderson, who serves as our Chief Business Officer, has over 20 years of leading strategic transactions, governmental and stakeholder relations and corporate expansion. Previously, since 2010 she was the Managing Principal at The Aetos Group, a management consulting firm serving both the public and private sectors. Andrew Skibo is our Head of Biologic Operations and was recently Head of Global Biologics Operations at MedImmune/AstraZeneca and previously worked for Amgen and Genentech (now Roche), where he was responsible for operations, engineering, construction, and validation for large-scale capital projects related to bio-pharmaceutical manufacturing. Ronald Cobb, Ph.D., our Head of Science and Discovery, was recently Chief Scientific Officer at Ology Bioservices (formerly Nanotherapeutics) and previously worked for RTI Biologics and Berlex Biosciences. Brian Price, Ph.D., our Head of Technology Strategy, brings over 20 years of successful product development experience and business development growth based on programs in toxicology, analytics, and therapeutic and vaccine development.

Additionally, members of our Board of Directors have extensive expertise in the fields of life sciences, business, and finance. In addition to Mr. Hernandez, our directors upon the consummation of this offering include Michael Venerable, CEO of CincyTech, Kimberly Murphy, former VP, Commercialization Leader, influenza at GlaxoSmithKlein, Allan Shaw, an experienced biotechnology CFO and director nominee James Sapirstein, R.Ph., M.B.A, President and CEO of AzurRx BioPharma (NASDAQ:AZRX).

Our Scientific Advisory Board includes Sunetra Gupta, Ph.D. Professor of Theoretical Epidemiology at The University of Oxford, a leading voice in infectious disease globally; David Zarley, Ph.D., with more than 30 years of experience in vaccine research and development, including former leadership roles at Pfizer and Wyeth; and, following the consummation of this offering, John Rice, Ph.D., Managing Director at CincyTech with more than 30 years of biotechnology advising experience.

Subject to certain non-compete restrictions, our chief executive officer, Joseph Hernandez, and other key personnel may pursue other business or investment ventures while employed with us. Accordingly, they may have conflicts of interest in allocating time among various business activities and potentially competitive fiduciary and pecuniary interests that conflict with our interests. See “Risk Factors — Our Chief Executive Officer, Joseph Hernandez, holds certain management positions and directorships of other companies and may allocate his time to such other businesses, which may cause conflicts of interest in his determination as to how much time to devote to our affairs and potentially competitive fiduciary and pecuniary interests that conflict with our interests.” For a complete discussion of the business affairs of our officers, directors and other personnel, please see “Management — Executive Officers and Directors.” Any such additional business activities or ventures may present conflicts to our interests. We do not believe that any such potential conflicts would materially affect our ability to conduct our operations.

Implications of Being an Emerging Growth Company

We qualify as an “emerging growth company,” as defined in the JOBS Act. For as long as we remain an emerging growth company, we may take advantage of certain exemptions from various reporting requirements that are applicable to other public companies. These provisions include, but are not limited to:

- being permitted to have only two years of audited financial statements and only two years of related selected financial data and management’s discussion and analysis of financial condition and results of operations disclosure;
- an exemption from compliance with the auditor attestation requirement in the assessment of our internal control over financial reporting pursuant to Section 404 of the Sarbanes-Oxley Act of 2002, as amended, or the Sarbanes-Oxley Act;
- reduced disclosure about executive compensation arrangements in our periodic reports, registration statements and proxy statements; and
- exemptions from the requirements to seek non-binding advisory votes on executive compensation or golden parachute arrangements.

In addition, the JOBS Act permits emerging growth companies to take advantage of an extended transition period to comply with new or revised accounting standards applicable to public companies. We are not choosing to “opt out” of this provision. We will remain an emerging growth company until the earliest of (i) the last day of the fiscal year following the fifth anniversary of the completion of this offering, (ii) the last day of the first fiscal year in which our annual gross revenues exceed \$1.07 billion, (iii) the date on which we have, during the immediately preceding three-year period, issued more than \$1.0 billion in non-convertible debt securities and (iv) the end of any fiscal year in which the market value of our common stock held by non-affiliates exceeds \$700 million as of the end of the second quarter of that fiscal year. We have elected to take advantage of certain of the reduced disclosure obligations in the registration statement of which this prospectus forms a part and may elect to take advantage of other reduced reporting requirements in future filings. As a result, the information that we provide to our shareholders may be different than you might receive from other public reporting companies in which you hold equity interests.

Summary of Risks Related to Our Business

Our business is subject to a number of risks, including risks that may prevent us from achieving our business objectives or may adversely affect our business, financial condition, results of operations, cash flows and prospects that you should consider before making a decision to invest in our common stock. These risks are discussed more fully in “Risk Factors” beginning on page 12 of this prospectus. These risks include, but are not limited to, the following:

- We are in the early stages of vaccine development and have a very limited operating history and no products approved for commercial sale, which may make it difficult for you to evaluate the success of our business to date and to assess our future viability.
- We have incurred significant net losses since inception, do not generate any revenue, and anticipate that we will continue to incur substantial net losses for the foreseeable future and may never achieve or maintain profitability. Our stock is a highly speculative investment.
- There is substantial doubt about our ability to continue as a going concern. Even after this offering, we will require substantial additional funding to finance our operations. We estimate that, based on our existing cash as of June 30, 2021, we have cash on hand sufficient to fund our operations into the second quarter of 2022. Our ability to continue as a going concern beyond the second quarter of 2022 is contingent upon obtaining proceeds from this offering. We expect our existing cash as of June 30, 2021 together with proceeds from this offering will enable us to fund our operating expenses and capital expenditure requirements for at least 12 months from the date of this prospectus. However, we will need to raise additional capital beyond this offering prior to commencing pivotal trials for any of our vaccine candidates. If we are unable to raise additional capital when needed, we could be forced to delay, reduce

or terminate certain of our development programs or other operations, and we may be unable to continue as a going concern. If we cannot continue as a viable entity, our stockholders may lose some or all of their investment in us.

- Due to the significant resources required for the development of our vaccine candidates, and depending on our ability to access capital, we must prioritize development of certain vaccine candidates. Moreover, we may expend our limited resources on vaccine candidates that do not yield a successful vaccine and fail to capitalize on vaccine candidates that may be more profitable or for which there is a greater likelihood of success.
- We depend entirely on the success of a limited number of product candidates, which are in preclinical development and none of which have commenced a clinical trial. If we do not obtain regulatory approval for and successfully commercialize one or more of our product candidates or we experience significant delays in doing so, we may never become profitable.
- The marketing approval process of the U.S. Food and Drug Association, or FDA, is lengthy, time consuming and inherently unpredictable, and if we are ultimately unable to obtain marketing approval for our current product candidates and future product candidates we intend to develop, our business will be substantially harmed.
- The future results of our current or future clinical trials may not support our product candidates' claims or may result in the discovery of unexpected adverse side effects.
- Even if we obtain regulatory approval of our vaccine candidates, the products may not gain market acceptance among regulators, advisory boards, physicians, patients, third-party payors and others in the medical community.
- We may be adversely affected by the ongoing coronavirus pandemic.
- We intend to rely on third parties to conduct our clinical trials and to conduct some aspects of our research and pre-clinical testing and those third parties may not perform satisfactorily, including failing to meet deadlines for the completion of such trials, research or testing.
- Our chief executive officer and other key personnel may allocate their time to other businesses thereby causing conflicts of interest in their determination as to how much time to devote to our affairs and potentially competitive fiduciary and pecuniary interests that conflict with our interests.
- We may have conflicts with our partners that could delay or prevent the development or commercialization of our current and future product candidates.
- It is difficult and costly to protect our proprietary rights, and we may not be able to ensure their protection. If our patent position does not adequately protect our product candidates, others could compete against us more directly, which would harm our business, possibly materially.
- We are dependent on licensed intellectual property. If we were to lose our rights to licensed intellectual property, we may not be able to continue developing or commercializing our product candidates, if approved. If we breach any of the agreements under which we license the use, development and commercialization rights to our product candidates or technology from third parties or, in certain cases, we fail to meet certain development deadlines, we could lose license rights that are important to our business.
- Some of the intellectual property covered by our licenses concerns patent applications and provisional applications. We cannot assure investors that any of the currently pending or future patent applications will result in granted patents, nor can we predict how long it will take for such patents to be granted.
- If we fail to comply with healthcare regulations, we could face substantial enforcement actions, including civil and criminal penalties and our business, operations and financial condition could be adversely affected.

- Healthcare Reform in the United States has been implemented in the past, and we expect further changes to be proposed in the future, leading to potential uncertainty in the healthcare industry. Violations of healthcare laws can have an adverse impact on our ability to advance our product candidates and our operating results.
- Obtaining regulatory approval for clinical trials of our vaccine candidates in children and adolescents may require additional studies and/or longer duration of studies since the requirements for regulatory approval for the pediatric populations are more stringent.
- The market price of our common stock may be highly volatile, and you could lose all or part of your investment.
- We have broad discretion in the use of the net proceeds from this offering and may invest or spend the proceeds in ways with which you disagree or that may not yield a return.
- Our failure to meet the continued listing requirements of Nasdaq could result in a de-listing of our common stock.
- We are an “emerging growth company” and the reduced disclosure requirements applicable to emerging growth companies could make our common stock less attractive to investors.
- Our amended and restated certificate of incorporation (“Amended and Restated Certificate of Incorporation”) and our amended and restated bylaws (“Amended and Restated Bylaws”) to be adopted in connection with the consummation of this offering, and Delaware law may have anti-takeover effects that could discourage, delay or prevent a change in control, which may cause our stock price to decline.
- A possible “short squeeze” due to a sudden increase in demand of our common stock that largely exceeds supply may lead to price volatility in our common stock.

Corporate Information

We were incorporated in Delaware on October 26, 2018. Our principal executive offices are located at 201 E. Fifth Street, Suite 1900, Cincinnati, Ohio 45202, and our telephone number is (513) 620-4101. Our corporate website address is www.bluewatervaccines.com. The information contained on or accessible through our website is not a part of this prospectus, and the inclusion of our website address in this prospectus is an inactive textual reference only.

THE OFFERING	
Common stock outstanding before this offering	shares
Common stock offered by us	shares
Option to purchase additional shares	We have granted the underwriters an option for a period of 45 days from the date of this prospectus to purchase an additional shares of common stock.
Representative’s Warrants	We will issue to Maxim Group LLC, the representative of the several underwriters, or the Representative, upon the closing of this offering, compensation warrants, or the representative’s warrants, entitling the Representative to purchase shares of common stock, representing 5.0% of the aggregate number of shares of common stock issued in this offering, including any shares issued pursuant to the exercise of the underwriters’ over-allotment option, at an exercise price per share equal to 115% of the initial public offering price per share. The representative’s warrants will have a term of five years from the effective date of the registration statement of which this prospectus forms a part and may be exercised commencing 180 days following the date of commencement of sales of the offering. The representative’s warrants may be exercised on a cash or cashless basis. This prospectus also relates to the offering of the shares of common stock issuable upon exercise of the representative’s warrants.
Common stock to be outstanding after this offering	Shares
Use of proceeds	We currently intend to use the net proceeds from this offering, together with our existing cash and cash equivalents, to fund our research and development activities, clinical trials and the regulatory review process for our product candidates, and the remainder for working capital and other general corporate purposes. See “Use of Proceeds” on page 58.
Lock-up Agreements	We and our directors, officers any other holder(s) of three percent (3.0%) or more of our outstanding shares of common stock have agreed with the representative not to offer for sale, issue, sell, contract to sell, pledge or otherwise dispose of any of our common stock or securities convertible into common stock for a period of six (6) months initial public offering is completed. See “Underwriting” on page 148.
Transfer Agent	Continental Stock Transfer & Trust Company
Risk Factors	See “Risk Factors” on page 12 for a discussion of certain of factors to consider carefully before deciding to purchase any shares of our common stock.
Proposed Nasdaq Capital Market Symbol	“BWV”
<p>The number of shares of our common stock to be outstanding after this offering is based on 2,172,371 shares of common stock outstanding as of September 30, 2021 (after giving effect to the conversion of all outstanding shares of convertible preferred stock and accrued dividends into an aggregate of up 1,372,371 shares of common stock), and excludes:</p> <ul style="list-style-type: none"> • 195,160 shares of common stock issuable upon the exercise of outstanding stock options under our 2019 Equity Incentive Plan, or the 2019 Plan, as of September 30, 2021; 	

- 154,840 shares of our common stock reserved for future issuance under the 2019 Plan, which, upon adoption of our 2021 Equity Incentive Plan, or the 2021 Plan, will be issuable under the 2021 Plan; and
- shares of our common stock issuable upon the exercise of the warrant issued to the representative of the underwriters at the closing of this offering.

Unless otherwise indicated, all information contained in this prospectus assumes:

- no exercise by the underwriters of their over-allotment option to purchase up to additional shares of our common stock;
- no exercise of the outstanding stock options described above;
- no exercise of the outstanding warrant described above;
- the filing of our Amended and Restated Certificate of Incorporation and the adoption of our Amended and Restated Bylaws immediately prior to the closing of this offering.

SUMMARY FINANCIAL DATA

The following tables set forth a summary of our historical financial data as of, and for the periods ended on, the dates indicated. The statements of operations data for the years ended December 31, 2020 and 2019 and balance sheet data as of December 31, 2020 and December 31, 2019 are derived from our audited financial statements included elsewhere in this prospectus. The statements of operations data for the six months ended June 30, 2021 and 2020 and the balance sheet data as of June 30, 2021 are derived from our unaudited financial statements included elsewhere in this prospectus. The unaudited financial statements were prepared on the same basis as the audited financial statements. Our management believes that the unaudited financial statements reflect all adjustments necessary for the fair presentation of the financial condition and results of operations for such periods.

The following summary financial information should be read in connection with, and is qualified by reference to, our financial statements related notes thereto and the section titled “Management’s Discussion and Analysis of Financial Condition and Results of Operations” included elsewhere in this prospectus. Our historical results are not necessarily indicative of results to be expected in any future period.

Statement of Operations Data:

	Six months ended June 30, 2021	Six months ended June 30, 2020	Year Ended December 31, 2020	Year Ended December 31, 2019
	(Unaudited)	(Unaudited)		
Operating costs and expenses				
General and administrative	\$ 500,276	\$ 559,775	\$ 1,097,161	\$ 820,058
Research and development	617,779	320,336	524,908	60,174
Total operating expenses	<u>1,118,055</u>	<u>880,111</u>	<u>1,622,069</u>	<u>880,232</u>
Loss from operations	<u>(1,118,055)</u>	<u>(880,111)</u>	<u>(1,622,069)</u>	<u>(880,232)</u>
Other income				
Interest income	—	19,431	22,603	58,317
Total other income	—	19,431	22,603	58,317
Net loss	<u>\$ (1,118,055)</u>	<u>\$ (860,680)</u>	<u>\$ (1,599,466)</u>	<u>\$ (821,915)</u>
Cumulative preferred stock dividends	276,904	278,434	559,928	279,964
Net loss applicable to common stockholders	<u>(1,394,959)</u>	<u>(1,139,114)</u>	<u>(2,159,394)</u>	<u>(1,101,879)</u>
Net loss per share attributable to common stockholders, basic and diluted				
	\$ (1.74)	\$ (1.42)	\$ (2.70)	\$ (1.38)
Weighted average number of common shares outstanding, basic and diluted				
	800,000	800,000	800,000	800,000

Balance Sheet Data:

	June 30, 2021 (Unaudited)	December 31, 2020	December 31, 2019
Cash	\$ 3,669,468	\$ 4,308,821	\$ 6,050,751
Working capital	\$ 3,586,704	\$ 4,527,811	\$ 5,983,327
Total assets	\$ 4,182,719	\$ 4,812,080	\$ 6,081,020
Total liabilities	\$ 490,359	\$ 78,310	\$ 82,621
Preferred stock	\$ 11	\$ 11	\$ 11
Common stock	\$ 8	\$ 8	\$ 8
Additional paid-in-capital	\$ 7,349,732	\$ 7,273,087	\$ 6,938,250
Accumulated deficit	(3,657,391)	(2,539,336)	(939,870)
Total stockholders’ equity	\$ 3,692,360	\$ 4,733,770	\$ 5,998,399

RISK FACTORS

Investing in our common stock involves a high degree of risk. You should carefully consider the following information about these risks, together with the other information appearing elsewhere in this prospectus, including our financial statements, the notes thereto and the section entitled “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” before deciding to invest in our common stock. The occurrence of any of the following risks could have a material adverse effect on our business, reputation, financial condition, results of operations and future growth prospects, as well as our ability to accomplish our strategic objectives. As a result, the trading price of our common stock could decline and you could lose all or part of your investment. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also impair our business operations and stock price.

Risks Related to our Financial Position and Need for Capital

We are in the early stages of vaccine development and have a very limited operating history and no products approved for commercial sale, which may make it difficult for you to evaluate the success of our business to date and to assess our future viability.

To date, we have devoted substantially all of our resources to performing research and development, undertaking preclinical studies and enabling manufacturing activities in support of our product development efforts, hiring personnel, licensing and developing our technology and vaccine candidates, organizing and staffing our company, performing business planning, establishing our intellectual property portfolio and raising capital to support and expand such activities. As an organization, we have not yet demonstrated an ability to successfully complete clinical development, obtain regulatory approvals, manufacture a commercial-scale product or conduct sales and marketing activities necessary for successful commercialization or arrange for a third party to conduct these activities on our behalf. Consequently, any predictions about our future success or viability may not be as accurate as they could be if we had a longer operating history.

Our current vaccine candidate pipeline includes four preclinical programs. We may encounter unforeseen expenses, difficulties, complications, delays and other known or unknown factors in achieving our business objectives, including with respect to our vaccine candidates. We will need to transition in the future from a company with a research and development focus to a company capable of supporting commercial activities and may not be successful in such a transition.

We have incurred significant net losses since inception, do not generate any revenue, and anticipate that we will continue to incur substantial net losses for the foreseeable future and may never achieve profitability. Our stock is a highly speculative investment.

We are a preclinical stage biotechnology vaccine company that was incorporated in October 2018. Investment in preclinical stage companies and vaccine development is highly speculative because it entails substantial upfront capital expenditures and significant risk that any potential vaccine candidate will not gain regulatory approval or become commercially viable. We do not have any products approved for sale and have not generated any revenue from product sales. As a result, we are not profitable and have incurred losses in each year since inception. Our net losses were \$1.6 million and \$0.8 million for the years ended December 31, 2020 and 2019, respectively, and \$1.1 million and \$0.9 million for the six months ended June 30, 2021 and 2020, respectively. As of June 30, 2021, we had an accumulated deficit of \$3.7 million.

We expect to continue to spend significant resources to fund research and development of, and seek regulatory approvals for, our vaccine candidates. We expect to incur substantial and increasing operating losses over the next several years as our research, development, manufacturing, preclinical testing and clinical trial activities increase. As a result, our accumulated deficit will also increase significantly. Additionally, there can be no assurance that the product candidates currently under development or that may be under development by us in the future will be approved for sale in the U.S. or elsewhere. Furthermore, there can be no assurance that if such products are approved they will be successfully commercialized, and the extent of our future losses and the timing of our profitability are highly uncertain. If we are unable to achieve profitability, we may be unable to continue our operations.

Even after this offering, we will require substantial additional funding to finance our operations. If we are unable to raise additional capital when needed, we could be forced to delay, reduce or terminate certain of our development programs or other operations.

As of June 30, 2021, we had cash and cash equivalents of \$3.7 million. We believe that the net proceeds from this offering will be approximately \$ million, based on an assumed public offering price of \$ per share, which is the midpoint of the estimated price range set forth on the cover page of this prospectus, after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us. We believe that such proceeds, together with our existing cash and cash equivalents as of the date of this prospectus, will fund our current operating plans through at least the next 12 months from the date of this offering. Accordingly, we believe that we will need to raise substantial additional capital to fund our continuing operations and the development and commercialization of our current product candidates and future product candidates. Our business or operating plan may change as a result of many factors currently unknown to us, and we may need to seek additional funds sooner than planned. We will need to raise additional capital before we can progress any of our vaccine candidates into a pivotal clinical trial. We expect to finance our subsequent cash needs through public or private equity or debt financings, third-party (including government) funding and marketing and distribution arrangements, as well as other collaborations, strategic alliances and licensing arrangements or any combination of these approaches. In addition, we may need to accelerate the growth of our sales capabilities and distribution beyond what is currently envisioned, and this would require additional capital.

However, we may not be able to secure funding when we need it or on favorable terms and we may not be able to raise sufficient funds to commercialize our current and future product candidates we intend to develop. Our ability to raise additional capital may be adversely impacted by potential worsening global economic conditions and the recent disruptions to and volatility in the credit and financial markets in the United States and worldwide, including the trading price of common stock, resulting from the ongoing COVID-19 pandemic. Our future capital requirements will depend on many factors, including:

- the timing, scope, progress, results and costs of research and development, testing, screening, manufacturing, preclinical development and clinical trials;
- the outcome, timing and cost of seeking and obtaining regulatory approvals from the FDA and comparable foreign regulatory authorities, including the potential for such authorities to require that we perform field efficacy studies for our vaccine candidates, require more studies than those that we currently expect or change their requirements regarding the data required to support a marketing application;
- the cost of building a sales force in anticipation of any product commercialization;
- the costs of future commercialization activities, including product manufacturing, marketing, sales, royalties and distribution, for any of our vaccine candidates for which we receive marketing approval;
- our ability to maintain existing, and establish new, strategic collaborations, licensing or other arrangements and the financial terms of any such agreements, including the timing and amount of any future milestone, royalty or other payments due under any such agreement;
- any product liability or other lawsuits related to our products;
- the expenses needed to attract, hire and retain skilled personnel;
- the revenue, if any, received from commercial sales, or sales to foreign governments, of our vaccine candidates for which we may receive marketing approval;
- the costs to establish, maintain, expand, enforce and defend the scope of our intellectual property portfolio, including the amount and timing of any payments we may be required to make, or that we may receive, in connection with licensing, preparing, filing, prosecuting, defending and enforcing of any patents or other intellectual property rights;
- the expenses needed to attract, hire and retain skilled personnel;

- the costs of operating as a public company; and
- the impact of the COVID-19 pandemic, which may exacerbate the magnitude of the factors discussed above.

Our ability to raise additional funds will depend on financial, economic and other factors, many of which are beyond our control. We cannot be certain that additional funding will be available on acceptable terms, or at all. We have no committed source of additional capital and if we are unable to raise additional capital in sufficient amounts or on terms acceptable to us, we may have to significantly delay, scale back or discontinue the development or commercialization of our vaccine candidates or other research and development initiatives. Our license agreements may also be terminated if we are unable to meet the payment obligations or milestones under the agreements. We could be required to seek collaborators for our vaccine candidates at an earlier stage than otherwise would be desirable or on terms that are less favorable than might otherwise be available, or relinquish or license on unfavorable terms our rights to our vaccine candidates in markets where we otherwise would seek to pursue development or commercialization ourselves.

We may consider strategic alternatives in order to maximize stockholder value, including financings, strategic alliances, licensing arrangements, acquisitions or the possible sale of our business. We may not be able to identify or consummate any suitable strategic alternatives and any consummated strategic alternatives may have an adverse impact on our vaccine candidates.

We may consider all strategic alternatives that may be available to us to maximize stockholder value, including financings, strategic alliances, licensing arrangements, acquisitions or the possible sale of our business. We currently have no agreements or commitments to engage in any specific strategic transactions, and our exploration of various strategic alternatives may not result in any specific action or transaction. To the extent that this engagement results in a transaction, our business objectives may change depending upon the nature of the transaction. There can be no assurance that we will enter into any transaction as a result of the engagement. Furthermore, if we determine to engage in a strategic transaction, we cannot predict the impact that such strategic transaction might have on our operations or stock price. We also cannot predict the impact on our stock price if we fail to enter into a transaction.

In addition, we face significant competition in seeking appropriate strategic partners, and the negotiation process is time-consuming and complex. Moreover, we may not be successful in our efforts to establish a strategic partnership or other alternative arrangements for our vaccine candidates because they may be deemed to be at too early of a stage of development for collaborative effort, and third parties may not view our vaccine candidates as having the requisite potential to demonstrate safety and efficacy. Any delays in entering into new strategic partnership agreements related to our vaccine candidates could delay the development and commercialization of our vaccine candidates in certain geographies for certain indications, which would harm our business prospects, financial condition and results of operations.

If we license products or businesses, we may not be able to realize the benefit of such transactions if we are unable to successfully integrate them with our existing operations and company culture. We cannot be certain that, following a strategic transaction or license, we will achieve the results, revenue or specific net income that justifies such transaction.

Raising additional capital may cause dilution to our existing stockholders and investors in this offering, restrict our operations or require us to relinquish rights to our product candidates on unfavorable terms to us.

We may seek additional capital through a variety of means, including through private and public equity offerings and debt financings, collaborations, strategic alliances and marketing, distribution or licensing arrangements. To the extent that we raise additional capital through the sale of equity or convertible debt securities, or through the issuance of shares under other types of contracts, or upon the exercise or conversion of outstanding options, warrants, convertible debt or other similar securities, the ownership interests of our stockholders will be diluted, and the terms of such financings may include liquidation or other preferences, anti-dilution rights, conversion and exercise price adjustments and other provisions that adversely affect the rights of our stockholders, including rights, preferences and privileges that are senior to those of our holders of common stock in terms of the payment of dividends or in the event of a liquidation. In addition, debt financing, if available, could include covenants limiting or restricting our ability to take certain actions, such as incurring additional debt,

making capital expenditures, entering into licensing arrangements, or declaring dividends and may require us to grant security interests in our assets. If we raise additional funds through collaborations, strategic alliances, or marketing, distribution or licensing arrangements with third parties, we may have to relinquish valuable rights to our technologies, future revenue streams, product or product candidates or grant licenses on terms that may not be favorable to us. If we are unable to raise additional funds through equity or debt financings when needed, we may need to curtail or cease our operations.

Due to the significant resources required for the development of our vaccine candidates, and depending on our ability to access capital, we must prioritize development of certain vaccine candidates. Moreover, we may expend our limited resources on vaccine candidates that do not yield a successful vaccine and fail to capitalize on vaccine candidates that may be more profitable or for which there is a greater likelihood of success.

Due to the significant resources required for the development of our vaccine candidates, we must decide which vaccine candidates to pursue and advance and the amount of resources to allocate to each. Our decisions concerning the allocation of research, development, management and financial resources toward particular vaccine candidates may not lead to the development of any viable commercial vaccines and may divert resources away from better opportunities. Similarly, our potential decisions to delay, terminate, license or collaborate with third parties in respect of certain vaccine candidates may subsequently also prove to be less than optimal and could cause us to miss valuable opportunities. If we make incorrect determinations regarding the viability or market potential of any of our vaccine candidates or misread trends in the biopharmaceutical industry, in particular for vaccines, our business could be seriously harmed. As a result, we may fail to capitalize on viable commercial products or profitable market opportunities, be required to forego or delay pursuit of opportunities with other vaccine candidates that may later prove to have greater commercial potential than those we choose to pursue or relinquish valuable rights to such vaccine candidates through collaboration, licensing or other royalty arrangements in cases in which it would have been advantageous for us to invest additional resources to retain sole development and commercialization rights.

There is substantial doubt about our ability to continue as a going concern.

As of December 31, 2020, December 31, 2019, and June 30, 2021, we had cash of \$4.3 million, \$6.1 million, and \$3.7 million, respectively. In addition, we had current liabilities of approximately \$0.5 million as of June 30, 2021. We estimate that, based on our existing cash as of June 30, 2021, we have cash on hand sufficient to fund our operations into the second quarter of 2022. Our ability to continue as a going concern beyond the second quarter of 2022 is contingent upon obtaining proceeds from this offering. We expect our existing cash as of June 30, 2021 together with proceeds from this offering will enable us to fund our operating expenses and capital expenditure requirements for at least 12 months from the date of this prospectus. However, we will need to raise additional capital beyond this offering prior to commencing pivotal trials for any of our vaccine candidates. Until we can generate a sufficient amount of revenue from the commercialization of our vaccine candidates or from collaboration agreements with third parties, if ever, we expect to finance our future cash needs through public or private equity or debt financings, third-party (including government) funding and marketing and distribution arrangements, as well as other collaborations, strategic alliances and licensing arrangements, or any combination of these approaches.

In the event that we are unable to obtain additional financing, we may be unable to continue as a going concern. There is no guarantee that we will be able to secure additional financing, including in connection with this offering. Changes in our operating plans, our existing and anticipated working capital needs, costs related to legal proceedings we might become subject to in the future, the acceleration or modification of our development activities, any near-term or future expansion plans, increased expenses, potential acquisitions or other events may further affect our ability to continue as a going concern. Similarly, the report of our independent registered public accounting firm on our financial statements as of and for the year ended December 31, 2020 includes an explanatory paragraph indicating that there is substantial doubt about our ability to continue as a going concern. If we cannot continue as a viable entity, our stockholders may lose some or all of their investment in us.

Our ability to use our net operating loss carryforwards and certain other tax attributes may be limited, each of which could harm our business.

As of December 31, 2020, we had U.S. federal and state net operating loss carryforwards of approximately \$2.1 million. Under Sections 382 and 383 of the Internal Revenue Code, or the Code, if a corporation undergoes an “ownership change,” the corporation’s ability to use its pre-ownership change net operating loss carryforwards and other pre-ownership change tax attributes, such as research tax credits, to offset its post-ownership change

income and taxes may be limited. In general, an ownership change will occur when the percentage of the Corporation's ownership (by value) of one or more "5-percent shareholders" (as defined in the Code) has increased by more than 50 percent over the lowest percentage owned by such shareholders at any time during the prior three years (calculated on a rolling basis). Similar rules may apply under state tax laws. An entity that experiences an ownership change generally will be subject to an annual limitation on its pre-ownership change tax loss and credit carryforwards equal to the equity value of the corporation immediately before the ownership change, multiplied by the long-term, tax-exempt rate posted monthly by the U.S. Internal Revenue Service (subject to certain adjustments). The annual limitation would be increased each year to the extent that there is an unused limitation in a prior year. In the event that it is determined that we have in the past experienced an ownership change as a result of transactions in our stock, or if we experience one or more ownership changes as a result of future transactions in our stock, then we may be limited in our ability to use our net operating loss carryforwards and other tax assets to reduce taxes owed on the net taxable income that we earn. Any limitations on the ability to use our net operating loss carryforwards and other tax assets could harm our business.

Risks Related to the Development of our Product Candidates

We depend entirely on the success of a limited number of product candidates, which are in preclinical development and none of which have commenced a clinical trial. If we do not obtain regulatory approval for and successfully commercialize one or more of our product candidates or we experience significant delays in doing so, we may never become profitable.

We do not have any products that have received regulatory approval and may never be able to develop marketable product candidates. We expect that a substantial portion of our efforts and expenses over the next few years will be devoted to the development of our product candidates; specifically, the commencement of Phase I clinical trials for our vaccine candidates. As a result, our business currently depends heavily on the successful development, regulatory approval and, if approved, commercialization of these product candidates. We cannot be certain that our product candidates will receive regulatory approval or will be successfully commercialized even if they receive regulatory approval. The research, testing, manufacturing, safety, efficacy, labeling, approval, sale, marketing and distribution of our product candidates are, and will remain, subject to comprehensive regulation by the FDA and similar foreign regulatory authorities. Before obtaining regulatory approvals for the commercial sale of any product candidate, we must demonstrate through pre-clinical studies and clinical trials that the product candidate is safe and effective for use in each target indication. Vaccine development is a long, expensive and uncertain process, and delay or failure can occur at any stage of any of our clinical trials. Failure to obtain regulatory approval for our product candidates in the United States will prevent us from commercializing and marketing our product candidates. The success of our product candidates will depend on several additional factors, including:

- completing clinical trials that demonstrate their efficacy and safety;
- receiving marketing approvals from applicable regulatory authorities;
- completing any post-marketing studies required by applicable regulatory authorities;
- establishing commercial manufacturing capabilities;
- launching commercial sales, marketing and distribution operations;
- the prevalence and severity of adverse events experienced with our product candidates;
- acceptance of our product candidates by patients, the medical community and third-party payors;
- a continued acceptable safety profile following approval;
- obtaining and maintaining healthcare coverage and adequate reimbursement for our product candidates;
- competing effectively with other therapies, including with respect to the sales and marketing of our product candidates, if approved; and
- qualifying for, maintaining, enforcing and defending our intellectual property rights and claims.

Many of these factors are beyond our control, including the time needed to adequately complete clinical testing, the regulatory submission process, potential threats to our intellectual property rights and changes in the competitive landscape. It is possible that none of our product candidates will ever obtain regulatory approval, even if we expend substantial time and resources seeking such approval. If we do not achieve one or more of these factors in a timely manner or at all, we could experience significant delays or an inability to successfully complete clinical trials, obtain regulatory approval or, if approved, commercialize our product candidates, which would materially harm our business, financial condition and results of operations.

The marketing approval process of the FDA is lengthy, time consuming and inherently unpredictable, and if we are ultimately unable to obtain marketing approval for our current product candidates and future product candidates we intend to develop, our business will be substantially harmed.

We are at a very early stage of development for all of our product candidates. The product candidates we intend to develop have not gained marketing approval in the U.S., and we cannot guarantee that we will ever have marketable products. Our business is substantially dependent on our ability to complete the development of, obtain marketing approval for, and successfully commercialize our current and future product candidates in a timely manner. We cannot commercialize our product candidates in the United States without first obtaining approval from the FDA to market each product candidate. Our product candidates could fail to receive marketing approval for many reasons, including among others:

- the FDA may disagree with the design or implementation of our clinical trials;
- Our clinical trials for our product candidate(s) must be successful if we are to seek and obtain regulatory marketing application through the submission of a new Biological License Application (BLA) and marketing authorization application (MAA) with the U.S. Food and Drug Administration (FDA) and the European Medicines Agency (EMA), respectively. Advanced clinical trials are often not successful even if prior trials were successful, and even if we are able to conduct advanced clinical trials and those trials are successful, we may not obtain necessary regulatory approvals for our product candidate(s) or we may be unable to successfully commercialize our products even if we receive the necessary regulatory approvals

In addition, the process of seeking regulatory approval to market the product candidates we intend to develop is expensive and time consuming and, notwithstanding the effort and expense incurred, approval is never guaranteed. If we are not successful in obtaining timely approval of our product candidates from the FDA, we may never be able to generate significant revenue and may be forced to cease operations. The new Biological License Application, or BLA, process is costly, lengthy and uncertain. Any BLA application filed by us will have to be supported by extensive data, including, but not limited to, technical, pre-clinical, clinical, manufacturing and labeling data, to demonstrate to the FDA's satisfaction the safety and efficacy of the product for its intended use.

In order to commence a clinical trial in the United States, we will be required to seek FDA acceptance of an IND for each of our product candidates. We cannot be sure any IND we submit to the FDA, or any similar clinical trial application we submit in other countries, will be accepted. If we will be required by regulatory authorities to conduct additional preclinical testing prior to filing an IND or similar application to clinically evaluate any of our product candidates, this may result in delay in our product candidate development. The results of any such preclinical testing may not be positive and may not support an application to study any of our product candidates in additional clinical trials.

It is possible that the FDA or EMA will not view our ongoing or planned trials as providing adequate support for future clinical trials or for an application for marketing approval, for any one or more reasons, including elements of the design or execution of the trials or safety concerns or other trial results. If we are unable to confirm or replicate the results of our trials in larger patient group or if negative results are obtained, we would likely be further delayed or prevented from advancing further clinical development any of our product candidates.

Additionally, the FDA or EMA may disagree with the sufficiency of our proposed reliance upon the preclinical, manufacturing or clinical data generated by third-party academic-sponsored trials, or our interpretation of preclinical, manufacturing or clinical data from our ongoing trials. If so, the FDA or EMA may require us to obtain and submit additional preclinical, manufacturing or clinical data.

Obtaining approvals from the FDA and from the regulatory agencies in other countries is an expensive and time-consuming process and is uncertain as to outcome. The FDA and other agencies could ask us to supplement our submissions, collect non-clinical data, conduct additional clinical trials or engage in other time-consuming actions, or it could simply deny our applications. In addition, even if we obtain a BLA approval or pre-market approvals in other countries, the approval could be revoked or other restrictions imposed if post-market data demonstrate safety issues or lack of effectiveness. We cannot predict with certainty how, or when, the FDA will act. If we are unable to obtain the necessary regulatory approvals, our financial condition and cash flow may be adversely affected, and our ability to grow domestically and internationally may be limited. Additionally, even if cleared or approved, our products may not be approved for the specific indications that are most necessary or desirable for successful commercialization or profitability.

We may encounter substantial delays in completing our clinical studies which in turn will require additional costs, or we may fail to demonstrate adequate safety and efficacy to the satisfaction of applicable regulatory authorities.

It is impossible to predict if or when our current or future product candidates, will prove safe or effective in humans or will receive regulatory approval. Before obtaining marketing approval from regulatory authorities for the sale of our product candidates, we must conduct extensive clinical studies to demonstrate the safety and efficacy of the product candidates in humans. Clinical testing is expensive, time-consuming and uncertain as to outcome. We cannot guarantee that any clinical studies will be conducted as planned or completed on schedule, if at all. A failure of one or more clinical studies can occur at any stage of testing. Events that may prevent successful or timely completion of clinical development include:

- delays in reaching, or failing to reach, a consensus with regulatory agencies on study design;
- delays in reaching, or failing to reach, agreement on acceptable terms with a sufficient number of prospective contract research organizations, or CROs, and clinical study sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;
- delays in recruiting a sufficient number of suitable patients to participate in our clinical studies;
- imposition of a clinical hold by regulatory agencies, after an inspection of our clinical study operations or study sites;
- failure by our CROs, other third parties or us to adhere to clinical study, regulatory or legal requirements;
- failure to perform in accordance with the FDA's good clinical practices, or GCPs, or applicable regulatory guidelines in other countries;
- delays in the testing, validation, manufacturing and delivery of sufficient quantities of our product candidates to the clinical sites;
- delays in having patients complete participation in a study or return for post-treatment follow-up;
- clinical study sites or patients dropping out of a study;
- delay or failure to address any patient safety concerns that arise during the course of a trial;
- unanticipated costs or increases in costs of clinical trials of our product candidates;
- occurrence of serious adverse events associated with the product candidates that are viewed to outweigh its potential benefits; or
- changes in regulatory requirements and guidance that require amending or submitting new clinical protocols.

We could also encounter delays if a clinical trial is suspended or terminated by us, by the Institutional Review Board, or IRB, or the Ethics Commission of the institutions in which such trials are being conducted, by an independent Safety Review Board, or SRB, for such trial or by the FDA or other regulatory authorities. Such authorities may suspend or terminate a clinical trial due to a number of factors, including failure to conduct the clinical trial in accordance with regulatory requirements or our clinical protocols, inspection of the clinical trial

operations or trial site by the FDA or other regulatory authorities resulting in the imposition of a clinical hold, unforeseen safety issues or adverse side effects, failure to demonstrate a benefit from using a drug, changes in governmental regulations or administrative actions or lack of adequate funding to continue the clinical trial.

Any inability to successfully complete pre-clinical and clinical development could result in additional costs to us or impair our ability to generate revenues from product sales, regulatory and commercialization milestones and royalties. In addition, if we make manufacturing or formulation changes to our product candidates, we may need to conduct additional studies to bridge our modified product candidates to earlier versions.

Clinical study delays could also shorten any periods during which we may have the exclusive right to commercialize our product candidates or allow our competitors to bring products to market before we do, which could impair our ability to successfully commercialize our product candidates. In addition, any delays in completing our clinical trials will increase our costs, slow down our product candidates' development and approval process and jeopardize our ability to commence product sales and generate revenues. Any of these occurrences may significantly harm our business, financial condition and prospects. In addition, many of the factors that cause, or lead to, a delay in the commencement or completion of clinical trials may also ultimately lead to the denial of regulatory approval of our product candidates.

The outcome of pre-clinical studies and early clinical trials may not be predictive of the success of later clinical trials, and interim results of a clinical trial do not necessarily predict final results. Further, pre-clinical and clinical data are often susceptible to various interpretations and analyses, and many companies that have believed their product candidates performed satisfactorily in pre-clinical studies and clinical trials have nonetheless failed to obtain marketing approval. If the results of our clinical studies are inconclusive or if there are safety concerns or adverse events associated with our product candidates, we may:

- be delayed in obtaining marketing approval for our product candidates, if approved at all;
- obtain approval for indications or patient populations that are not as broad as intended or desired;
- obtain approval with labeling that includes significant use or distribution restrictions or safety warnings;
- be required to change the way the product is administered;
- be required to perform additional clinical studies to support approval or be subject to additional post-marketing testing requirements;
- have regulatory authorities withdraw their approval of a product or impose restrictions on its distribution in the form of a modified risk evaluation and mitigation strategy;
- be sued; or
- experience damage to our reputation.

Additionally, our product candidates could potentially cause other adverse events that have not yet been predicted. The inclusion of ill patients in our clinical studies may result in deaths or other adverse medical events due to other therapies or medications that such patients may be using. As described above, any of these events could prevent us from achieving or maintaining market acceptance of our product candidates and impair our ability to commercialize our products.

Obtaining and maintaining regulatory approval of our vaccine candidates in one jurisdiction does not mean that we will be successful in obtaining regulatory approval of our vaccine candidates in other jurisdictions.

Obtaining and maintaining regulatory approval of our vaccine candidates in one jurisdiction does not guarantee that we will be able to obtain or maintain regulatory approval in any other jurisdiction, while a failure or delay in obtaining regulatory approval in one jurisdiction may have a negative effect on the regulatory approval process in others. For example, even if the FDA grants marketing approval of a vaccine candidate, comparable regulatory authorities in foreign jurisdictions must also approve the manufacturing, marketing and promotion of the vaccine candidate in those countries. Approval procedures vary among jurisdictions and can involve requirements and administrative review periods different from, and greater than, those in the United States, including additional preclinical studies or clinical trials as clinical studies conducted in one jurisdiction may not be accepted by

regulatory authorities in other jurisdictions. In many jurisdictions outside the United States, a vaccine candidate must be approved for reimbursement before it can be approved for sale in that jurisdiction. In some cases, the price that we intend to charge for our products is also subject to approval.

We may also submit marketing applications in other countries. Regulatory authorities in jurisdictions outside of the United States have requirements for approval of vaccine candidates with which we must comply prior to marketing in those jurisdictions. Obtaining foreign regulatory approvals and compliance with foreign regulatory requirements could result in significant delays, difficulties and costs for us and could delay or prevent the introduction of our products in certain countries. If we fail to comply with the regulatory requirements in international markets and/or receive applicable marketing approvals, our target market will be reduced and our ability to realize the full market potential of our vaccine candidates will be harmed.

Modifications to our products may require new BLA approvals.

Once a particular product receives FDA approval, expanded uses or uses in new indications of our products may require additional human clinical trials and new regulatory approvals, including additional IND and BLA submissions and premarket approvals before we can begin clinical development, and/or prior to marketing and sales. If the FDA requires new approvals for a particular use or indication, we may be required to conduct additional clinical studies, which would require additional expenditures and harm our operating results. If the products are already being used for these new indications, we may also be subject to significant enforcement actions. Conducting clinical trials and obtaining approvals can be a time-consuming process, and delays in obtaining required future approvals could adversely affect our ability to introduce new or enhanced products in a timely manner, which in turn would harm our future growth.

Additional delays to the completion of clinical studies may result from modifications being made to the protocol during the clinical trial, if such modifications are warranted and/or required by the occurrences in the given trial.

Each modification to the protocol during a clinical trial has to be submitted to the FDA. This could result in the delay or halt of a clinical trial while the modification is evaluated. In addition, depending on the quantity and nature of the changes made, the FDA could take the position that the data generated by the clinical trial are not poolable because the same protocol was not used throughout the trial. This might require the enrollment of additional subjects, which could result in the extension of the clinical trial and the FDA delaying approval of a product. Any such delay could have a material adverse effect on our business and results of operations.

There can be no assurance that the data generated from our clinical trials using modified protocols will be acceptable to the FDA or other regulatory authorities.

There can be no assurance that the data generated using modified protocols will be acceptable to the FDA or other regulatory authorities or that if future modifications during the trial are necessary, that any such modifications will be acceptable to the FDA or other regulatory authorities. If the FDA or other regulatory authorities believe that prior approval is required for a particular modification, they can delay or halt a clinical trial while they evaluate additional information regarding the change.

Serious injury or death resulting from a failure of our product candidates during current or future clinical trials could also result in the FDA or other regulatory authority delaying our clinical trials or denying or delaying approval of a product.

Even though an adverse event may not be the result of the failure of our product candidate, the FDA or other regulatory authority could delay or halt a clinical trial for an indefinite period of time while an adverse event is reviewed, and likely would do so in the event of multiple such events.

Any delay or termination of our current or future clinical trials as a result of the risks summarized above, including delays in obtaining or maintaining required approvals from the FDA or other regulatory authorities, delays in patient enrollment, the failure of patients to continue to participate in a clinical trial, and delays or termination of clinical trials as a result of protocol modifications or adverse events during the trials, may cause an increase in costs and delays in the filing of any product submissions with the FDA or other regulatory authorities, delay the approval and commercialization of our products or result in the failure of the clinical trial, which could adversely affect our business, operating results and prospects.

We will depend on enrollment and retention of patients in our clinical trials for our product candidates. If we experience delays or difficulties enrolling or retaining patients in our clinical trials, our research and development efforts and business, financial condition, and results of operations could be materially adversely affected.

Successful and timely completion of clinical trials will require that we enroll and retain a sufficient number of patient candidates. Any clinical trials we conduct may be subject to delays for a variety of reasons, including as a result of patient enrollment taking longer than anticipated, patient withdrawal, or adverse events. These types of developments could cause us to delay the trial or halt further development.

Our clinical trials will compete with other clinical trials that are in the same therapeutic areas as our product candidates, and this competition reduces the number and types of patients available to us, as some patients who might have opted to enroll in our trials may instead opt to enroll in a trial being conducted by one of our competitors. Moreover, enrolling patients in clinical trials for diseases in which there is an approved standard of care is challenging, as patients will first receive the applicable standard of care. Many patients who respond positively to the standard of care do not enroll in clinical trials. This may limit the number of eligible patients able to enroll in our clinical trials who have the potential to benefit from our product candidates and could extend development timelines or increase costs for these programs. Patients who fail to respond positively to the standard of care treatment will be eligible for clinical trials of unapproved drug candidates. However, these prior treatment regimens may render our therapies less effective in clinical trials.

Because the number of qualified clinical investigators and clinical trial sites is limited, we expect to conduct some of our clinical trials at the same clinical trial sites that some of our competitors use, which will reduce the number of patients who are available for our clinical trials at such clinical trial sites.

Patient enrollment depends on many factors, including:

- the size and nature of the patient population;
- the severity of the disease, condition or infection under investigation;
- eligibility criteria for the trial;
- the proximity of patients to clinical sites;
- the design of the clinical protocol;
- the ability to obtain and maintain patient consents;
- perceived risks and benefits of the product candidate under evaluation;
- the ability to recruit clinical trial investigators with the appropriate competencies and experience;
- the risk that patients enrolled in clinical trials will drop out of the trials before the administration of our product candidates or trial completion;
- the availability of competing clinical trials;
- the availability of such patients during the COVID-19 pandemic;
- the availability of new drugs approved for the indication the clinical trial is investigating; and
- clinicians' and patients' perceptions as to the potential advantages of the drug being studied in relation to other available therapies.

These factors may make it difficult for us to enroll enough patients to complete our clinical trials in a timely and cost-effective manner. Delays in the completion of any clinical trial of our product candidates will increase our costs, slow down our product candidate development and approval process, and delay or potentially jeopardize our ability to commence product sales and generate revenue. In addition, some of the factors that cause, or lead to, a delay in the commencement or completion of clinical trials may also ultimately lead to the denial of regulatory approval of our product candidates.

Conducting successful clinical studies may require the enrollment of large numbers of patients, and suitable patients may be difficult to identify and recruit.

Patient enrollment in clinical trials and completion of patient participation and follow-up depends on many factors, including the size of the patient population; the nature of the trial protocol; the attractiveness of, or the discomforts and risks associated with, the treatments received by enrolled subjects; the availability of appropriate clinical trial investigators; support staff; and the proximity of patients to clinical sites and ability to comply with the eligibility and exclusion criteria for participation in the clinical trial and patient compliance. For example, patients may be discouraged from enrolling in our clinical trials if the trial protocol requires them to undergo extensive post-treatment procedures or follow-up to assess the safety and effectiveness of our products or if they determine that the treatments received under the trial protocols are not attractive or involve unacceptable risks or discomforts. Patients may also not participate in our clinical trials if they choose to participate in contemporaneous clinical trials of competitive products.

The future results of our current or future clinical trials may not support our product candidates claims or may result in the discovery of unexpected adverse side effects.

Even if our clinical trials are completed as planned, we cannot be certain that their results will support our product candidates claims or that the FDA or foreign authorities will agree with our conclusions regarding them. Success in pre-clinical studies and early clinical trials does not ensure that later clinical trials will be successful, and we cannot be sure that the later trials will replicate the results of prior trials and pre-clinical studies. The clinical trial process may fail to demonstrate that our product candidates are safe and effective for the proposed indicated uses. If the FDA concludes that the clinical trials for any product for which we might seek approval, has failed to demonstrate safety and effectiveness, we would not receive FDA approval to market that product in the United States for the indications sought.

In addition, such an outcome could cause us to abandon a product candidate and might delay development of others. Any delay or termination of our clinical trials will delay the filing of any product submissions with the FDA and, ultimately, our ability to commercialize our product candidates and generate revenues. It is also possible that patients enrolled in clinical trials will experience adverse side effects that are not currently part of our product candidate's profile.

Adverse events involving our products may lead the FDA or other regulatory authorities to delay or deny approval for our products or result in product recalls that could harm our reputation, business and financial results.

Additionally, if any of our product candidates receives marketing approval, the FDA could require us to adopt a Risk Evaluation and Mitigation Strategy, or REMS, and other non-U.S. regulatory authorities could impose other specific obligations as a condition of approval to ensure that the benefits outweigh its risks, which may include, among other things, a medication guide outlining the risks of the product for distribution to patients, a communication plan to health care practitioners, and restrictions on how or where the product can be distributed, dispensed or used. Furthermore, if we or others later identify undesirable side effects caused by any of our product candidates, several potentially significant negative consequences could result, including:

- regulatory authorities may suspend or withdraw approvals of such a product candidate;
- regulatory authorities may require additional warnings or limitations of use in product labeling;
- we may be required to change the way a product candidate is distributed, dispensed, or administered or conduct additional clinical trials;
- we could be sued and held liable for harm caused to patients; and
- our reputation may suffer.

Any of these events could prevent us from achieving or maintaining market acceptance of our product candidates and could significantly harm our business, prospects, financial condition and results of operations.

Once a product receives FDA approval, the agency has the authority to require the recall of commercialized products in the event of adverse side effects, material deficiencies or defects in design or manufacture. The authority to require a recall must be based on an FDA finding that there is a reasonable probability that the product would

cause serious injury or death. Manufacturers may, under their own initiative, recall a product if any material deficiency in a product is found. A government-mandated or voluntary recall by us or one of our distributors could occur as a result of adverse side effects, impurities or other product contamination, manufacturing errors, design or labeling defects or other deficiencies and issues. Recalls of any of our products would divert managerial and financial resources and have an adverse effect on our financial condition and results of operations. The FDA requires that certain classifications of recalls be reported to FDA within ten working days after the recall is initiated. Companies are required to maintain certain records of recalls, even if they are not reportable to the FDA. We may initiate voluntary recalls involving our products in the future. A future recall announcement could harm our reputation with customers and negatively affect our sales. In addition, the FDA and/or other regulatory agencies could take enforcement action for failing to report the recalls when they were conducted.

Even if we obtain regulatory approval of our vaccine candidates, the products may not gain market acceptance among regulators, advisory boards, physicians, patients, third-party payors and others in the medical community.

Even if any of our vaccine candidates receive marketing approval, they may fail to receive recommendations for use by regulators or advisory boards that recommend vaccines, or gain market acceptance by physicians, patients, third-party payors and others in the medical community. If such vaccine candidates do not achieve an adequate level of acceptance, we may not generate significant product revenue and may not become profitable. The degree of market acceptance of any vaccine candidate, if approved for commercial sale, will depend on a number of factors, including but not limited to:

- receiving CDC and ACIP recommendations for use, as well as recommendations of comparable foreign regulatory and advisory bodies;
- prevalence and severity of the disease targets for which our vaccine candidates are approved;
- physicians, hospitals, third-party payors and patients considering our vaccine candidates as safe and effective;
- the potential and perceived advantages of our vaccine candidates over existing vaccines, including with respect to spectrum coverage or immunogenicity;
- the prevalence and severity of any side effects;
- product labeling or product insert requirements of the FDA or comparable foreign regulatory and advisory bodies;
- limitations or warnings contained in the labeling approved by the FDA or comparable foreign regulatory and advisory bodies;
- the timing of market introduction of our vaccine candidates as well as competitive products;
- the cost of treatment in relation to alternative treatments;
- the availability of coverage and adequate reimbursement and pricing by third-party payors, including government authorities;
- the willingness of patients to pay out-of-pocket in the absence of coverage and adequate reimbursement by third-party payors, including government authorities;
- relative convenience and ease of administration, including as compared to competitive vaccines and alternative treatments; and
- the effectiveness of our sales and marketing efforts.

In the United States, the CDC and ACIP develop vaccine recommendations for both children and adults, as do similar agencies around the world. To develop its recommendations, ACIP forms working groups that gather, analyze and prepare scientific information. The ACIP also considers many of the factors above, as well as myriad additional factors such as the value of vaccination for the target population regarding the outcomes, health economic data and implementation issues. ACIP recommendations are also made within categories, such as in an age group

or a specified risk group. For example, the ACIP may determine that a preferred recommendation in a smaller child population may be more economical than recommending vaccinations for a larger adult population, which could adversely impact our market opportunity.

New pediatric vaccines that receive an ACIP preferred recommendation are almost universally adopted, and adult vaccines that receive a preferred recommendations are widely adopted. For example, in 2014, the ACIP voted to recommend Prevnar 13 for routine use to help protect adults ages 65 years and older against pneumococcal disease, which caused Prevnar 13 to become the standard of care along with continued use of Pneumovax 23. ACIP can also modify its preferred recommendation. For instance, in June 2019, the ACIP voted to revise the pneumococcal vaccination guidelines and recommend Prevnar 13 for adults 65 and older based on the shared clinical decision making of the provider and patient, rather than a preferred use recommendation, which means the decision to vaccinate should be made at the individual level between health care providers and their patients. Pfizer recently noted that this revised recommendation is expected to have a negative effect on Prevnar 13 revenue for future periods.

If our vaccine candidates are approved but fail to receive CDC and ACIP recommendations, or recommendations of other comparable foreign regulatory and advisory bodies, or achieve market acceptance among physicians, healthcare providers, patients, third-party payors or others in the medical community, we will not be able to generate significant revenue. Even if our products achieve market acceptance, we may not be able to maintain that market acceptance over time if new products or technologies are introduced that are more favorably received than our products, are more cost effective or render our products obsolete.

Obtaining regulatory approval for clinical trials of our vaccine candidates in children and adolescents may require additional studies and/or longer duration of studies since the requirements for regulatory approval for the pediatric populations are more stringent.

Pediatric vaccine candidates' development may require additional studies to determine safe dosing and long-term monitoring. These additional studies may require investment of significant additional resources beyond those required for regulatory approval of the vaccines in adults. Approval of our vaccine candidates may be delayed due to these additional requirements and this may have an adverse effect on the commercial prospects of our vaccine candidates, especially our pediatric vaccine candidate, BWV-201, as well as delay our ability to generate product revenue, possibly materially. In addition, as a result of COVID-19 (or other potential pandemics), there may be a smaller pool of children from which we can enroll for our clinical trials. We cannot guarantee that we will receive regulatory approval to commercialize our product candidates in the pediatric populations or the adult population.

Even if we are able to commercialize our product candidates, such products may become subject to unfavorable pricing regulations, third-party reimbursement practices or healthcare reform initiatives, which would harm our business.

The regulations that govern marketing approvals, pricing, coverage and reimbursement for new drugs vary widely from country to country. In the United States, new and future legislation may significantly change the approval requirements in ways that could involve additional costs and cause delays in obtaining approvals. Some countries require approval of the sale price of a drug before it can be marketed. In many countries, the pricing review period begins after marketing or product-licensing approval is granted. In some foreign markets, prescription pharmaceutical pricing remains subject to continuing governmental control even after initial marketing approval is granted. As a result, we might obtain marketing approval for a drug in a particular country but then be subject to price regulations that delay its commercial launch, possibly for lengthy time periods, and negatively impact the revenue we are able to generate from the sale of the drug in that country. Adverse pricing limitations may hinder our ability to commercialize and generate revenue from our product candidates, even if our product candidates obtain marketing approval.

Our ability to commercialize our current and any future product candidates successfully also will depend in part on the extent to which coverage and adequate reimbursement for these products and related treatments will be available from government health programs, private health insurers, integrated delivery networks and other third-party payors. Third-party payors decide which medications they will pay for and establish reimbursement levels. A significant trend in the U.S. healthcare industry and elsewhere is cost containment. Government authorities and third-party payors have attempted to control costs by limiting coverage and the amount of payment for particular medications. Increasingly, third-party payors are requiring that drug companies provide predetermined discounts

from list prices and are challenging the prices charged for medical products. Coverage and reimbursement may not be available for any product that we commercialize and, if reimbursement is available, the level of reimbursement may not be sufficient for commercial success. Coverage and reimbursement may impact the demand for, or the price of, any product candidate for which we obtain marketing approval. If coverage and reimbursement is not available or is available only to limited levels, we may not be able to successfully commercialize any product candidate for which we obtain marketing approval.

There may be significant delays in obtaining coverage and adequate reimbursement for newly approved products, and coverage may be more limited than the purposes for which the product is approved by the FDA or similar regulatory authorities outside the United States. Moreover, eligibility for coverage and reimbursement does not imply that any product will be paid for in all cases or at a rate that covers our costs, including research, development, manufacture, sale and distribution. Interim reimbursement levels for new drugs, if applicable, may also not be sufficient to cover our costs and may not be made permanent. Coverage and reimbursement rates may vary according to the use of the drug and the medical circumstances under which it is used may be based on reimbursement levels already set for lower cost products or procedures or may be incorporated into existing payments for other services. Net prices for drugs may be reduced by mandatory discounts or rebates required by government healthcare programs or private payors and by any future relaxation of laws that presently restrict imports of drugs from countries where they may be sold at lower prices than in the United States. Commercial third-party payors often rely upon Medicare coverage policies and payment limitations in setting their own reimbursement policies. Our inability to promptly obtain coverage and profitable payment rates from both government-funded programs and private payors for any approved products that we develop could have a material adverse effect on our operating results, our ability to raise capital needed to commercialize our approved products and our overall financial condition.

Any product candidate for which we obtain marketing approval could be subject to marketing restrictions or withdrawal from the market and we may be subject to penalties if we fail to comply with regulatory requirements or if we experience unanticipated problems with our products.

Any product candidate for which we obtain marketing approval, along with the manufacturing processes and facilities, post-approval clinical data, labeling, advertising and promotional activities for such product, will be subject to continual requirements of and review by the FDA and other regulatory authorities. These requirements include submissions of promotional materials and safety and other post-marketing information and reports, registration and listing requirements, current Good Manufacturing Practice (“cGMP”) requirements for product facilities, quality assurance and corresponding maintenance of records and documents and requirements regarding the distribution of samples to physicians and related recordkeeping. Even if marketing approval of a product candidate is granted, the approval may be subject to limitations on the indicated uses for which the product may be marketed or to the conditions of approval or contain requirements for costly post-marketing testing and surveillance to monitor the safety or efficacy of the medicine. The FDA closely regulates the post-approval marketing and promotion of drugs to ensure that they are marketed only for the approved indications and in accordance with the provisions of the approved labeling. However, companies may share truthful and not misleading information that is otherwise consistent with the product’s FDA approved labeling. The FDA imposes stringent restrictions on manufacturers’ communications regarding off-label use and if we do not comply with these restrictions, we may be subject to enforcement actions.

In addition, later discovery of previously unknown problems with our products, manufacturers or manufacturing processes and facilities or failure to comply with regulatory requirements, may result in, among other things:

- restrictions on such products, manufacturers or manufacturing processes or facilities;
- restrictions on the labeling, marketing, distribution or use of a product;
- requirements to conduct post-approval clinical trials, other studies or other post-approval commitments;
- warning or untitled letters;
- withdrawal or recall of the products from the market;
- refusal to approve pending applications or supplements to approved applications that we submit;
- fines, restitution or disgorgement of profits or revenue;

- suspension or withdrawal of marketing approvals;
- refusal to permit the import or export of our products;
- product seizure; and
- injunctions or the imposition of civil or criminal penalties.

Failure to obtain regulatory approvals in foreign jurisdictions will prevent us from marketing our products internationally.

We intend to market future products in international markets. In order to market our future products in regions such as the European Economic Area, or EEA, Asia Pacific, or APAC, and many other foreign jurisdictions, we must obtain separate regulatory approvals.

For example, in the EEA, medicinal products can only be commercialized after obtaining a Marketing Authorization, or MA. Before granting the MA, the European Medicines Agency or the competent authorities of the member states of the EEA make an assessment of the risk-benefit balance of the product on the basis of scientific criteria concerning its quality, safety and efficacy. In Japan, the Pharmaceuticals and Medical Devices Agency, or the PMDA, of the Ministry of Health Labour and Welfare, or MHLW, must approve an application under the Pharmaceutical Affairs Act before a new drug product may be marketed in Japan.

We have had limited interactions with foreign regulatory authorities. The approval procedures vary among countries and can involve additional clinical testing, and the time required to obtain approval may differ from that required to obtain FDA approval. Moreover, clinical studies conducted in one country may not be accepted by regulatory authorities in other countries. Approval by the FDA does not ensure approval by regulatory authorities in other countries, and approval by one or more foreign regulatory authorities does not ensure approval by regulatory authorities in other foreign countries or by the FDA. However, a failure or delay in obtaining regulatory approval in one country may have a negative effect on the regulatory process in others. The foreign regulatory approval process may include all of the risks associated with obtaining FDA approval. We may not obtain foreign regulatory approvals on a timely basis, if at all. We may not be able to file for regulatory approvals and even if we file we may not receive necessary approvals to commercialize our products in any market.

If our products do not receive favorable third-party reimbursement, or if new restrictive legislation is adopted, market acceptance of our products may be limited and we may not generate significant revenues.

Our ability to commercialize our products will depend in part on the extent to which appropriate reimbursement levels for the cost of our proposed formulations and products and related treatments are obtained by governmental authorities, private health insurers and other organizations, such as Health Maintenance Organizations, or HMOs. Reimbursement from third parties depends greatly on our ability to present data which demonstrate positive outcomes and reduced utilization of other products or services as well as cost data which show that treatment costs using the new product are equal to or less than what is currently covered for other products. If our products do not receive favorable third-party reimbursement and patients are unwilling or unable to pay for our products out-of-pocket, it could limit our revenues and harm our business.

The continuing efforts of government and insurance companies, health maintenance organizations and other payers of healthcare costs to contain or reduce costs of health care may affect our future revenues and profitability, and the future revenues and profitability of our potential customers, suppliers and collaborative partners and the availability of capital. For example, in certain foreign markets, pricing or profitability of prescription pharmaceuticals is subject to government control. In the United States, recent federal and state government initiatives have been directed at lowering the total cost of health care. In March 2010, President Obama signed into law the Patient Protection and Affordable Care Act, a sweeping law intended to broaden access to health insurance, reduce or constrain the growth of healthcare spending, enhance remedies against fraud and abuse, add new transparency requirements for healthcare and health insurance industries, impose new taxes and fees on the health industry and impose additional health policy reforms. Federal and state legislatures will likely continue to focus on health care reform, controlling the cost of prescription pharmaceuticals and on the reform of the Medicare and Medicaid systems. While we cannot predict whether any such legislative or regulatory proposals will be adopted, the announcement or adoption of such proposals could materially harm our business, financial condition and results of operations.

Risks Related to our Business and Industry

We may be adversely affected by the ongoing coronavirus pandemic.

The outbreak of the novel coronavirus COVID-19 (“COVID-19”) has evolved into a global pandemic. The coronavirus has spread to many regions of the world. The extent to which the coronavirus impacts our business and operating results will depend on future developments that are highly uncertain and cannot be accurately predicted, including new information that may emerge concerning the coronavirus and the actions to contain the coronavirus or treat its impact, among others.

As a result of the continuing spread of COVID-19, our business operations could be delayed or interrupted. Currently, we operate virtually, i.e., our program activities are and will continue to be carried out, on our behalf, by competent contract research organizations (CROs) with expertise in pre-clinical, clinical and/or chemistry and manufacturing areas. Due to COVID-19, our planned project timelines may be delayed due to reduced availability of human resources or critical supplies needed to carry out such plans. Due to shelter-in-place/stay-at-home orders and other government restrictions, our employees conducting research and development or manufacturing activities at external vendor locations across the globe may not be able to access their laboratory or manufacturing space which may result in our core activities being significantly limited or curtailed, possibly for an extended period of time.

Moreover, our clinical trials may be affected by the COVID-19 pandemic. Site initiation, participant recruitment and enrollment, participant dosing, availability and distribution of clinical trial materials, study monitoring and data analysis may be paused or delayed due to changes in hospital or university policies, federal, state or local regulations, prioritization of hospital resources toward pandemic efforts, or other reasons related to the COVID-19 pandemic. If the coronavirus continues to spread, some participants and clinical investigators may not be able to execute clinical trial protocols per the expected timelines. The new mutations of the virus may also make it harder for us to predict the exact impact (if any) on the progression of COVID-19 on our development programs. For example, quarantines or other travel limitations (whether voluntary or required) may impede participant movement, affect sponsor access to study sites, or interrupt healthcare services, and we may be unable to conduct our clinical trials. Further, if the spread of the COVID-19 pandemic continues and our operations are adversely impacted, we risk a delay, default and/or nonperformance under existing agreements which may increase our costs. These cost increases may not be fully recoverable or adequately covered by insurance.

Infections and deaths related to the pandemic may disrupt the United States’ healthcare and healthcare regulatory systems. Such disruptions could divert healthcare resources away from, or materially delay FDA review or review by other regulatory agencies and/or approval with respect to, our clinical trials. It is unknown how long these disruptions could continue, were they to occur. Any elongation or de-prioritization of our clinical trials or delay in regulatory review resulting from such disruptions could materially affect the development and study of our product candidates.

The spread of the coronavirus, which has caused a broad impact globally, including restrictions on travel and quarantine policies put into place by businesses and governments, may have a material economic effect on our business. While the potential economic impact brought by and the duration of the pandemic may be difficult to assess or predict, it has already caused, and is likely to result in further, significant disruption of global financial markets, which may reduce our ability to access capital either at all or on favorable terms. In addition, a recession, depression or other sustained adverse market event resulting from the spread of the coronavirus could materially and adversely affect our business and the value of our common stock.

The ultimate impact of the current pandemic, or any other health epidemic, is highly uncertain and subject to change. We do not yet know the full extent of potential delays or impacts on our business, our clinical trials, our research programs, healthcare systems or the global economy as a whole. However, these effects could have a material impact on our operations, and we will continue to monitor the situation closely.

Our reliance on third parties heightens the risks faced by our business.

We rely on suppliers, vendors and partners for certain key aspects of our business, including support for information technology systems and certain human resource functions. We do not control these partners, but we depend on them in ways that may be significant to us. If these parties fail to meet our expectations or fulfill their

obligations to us, we may fail to receive the expected benefits. In addition, if any of these third parties fails to comply with applicable laws and regulations in the course of its performance of services for us, there is a risk that we may be held responsible for such violations as well. This risk is particularly serious in emerging markets, where corruption is often prevalent and where many of the third parties on which we rely do not have internal compliance resources comparable to our own. Any such failures by third parties, in emerging markets or elsewhere, could adversely affect our business, reputation, financial condition or results of operations.

We rely on, and intend to continue to rely on third parties to conduct our pre-clinical testing, research and clinical trials, and those third parties may not perform satisfactorily, including failing to meet deadlines for the completion of such trials, research or testing.

We have been relying on third parties for our preclinical studies, and we expect to continue to rely on third parties, such as CROs, contract manufacturers of clinical supplies, clinical data management organizations, medical institutions and clinical investigators, to conduct our clinical trials and to conduct some aspects of our research and pre-clinical testing. These third parties may terminate their engagements with us at any time. If these third parties do not successfully carry out their duties, meet expected deadlines or conduct our studies in accordance with regulatory requirements or our stated protocols, we will not be able to obtain, or may be delayed in obtaining, marketing approvals for our product candidates and will not be able to, or may be delayed in our efforts to, successfully commercialize our product candidates. Furthermore, these third parties may also have relationships with other entities, some of which may be our competitors. If we are required to enter into alternative arrangements, it could delay our product development activities.

Our reliance on third parties for research and development activities will reduce our control over these activities but will not relieve us of our responsibilities. For example, we will remain responsible for ensuring that each of our clinical trials is conducted in accordance with the general investigational plan and protocols for the trial. Moreover, the FDA and other international regulatory authorities require us to comply with GCP standards for conducting, recording and reporting the results of clinical trials to assure that data and reported results are credible and accurate and that the rights, integrity and confidentiality of trial participants are protected. We also are required to register ongoing clinical trials and post the results of completed clinical trials on a government-sponsored database, available at www.clinicaltrials.gov, within certain timeframes. Failure to do so can result in fines, adverse publicity and civil and criminal sanctions.

Upon commercialization of our products, we may be dependent on third parties to market, distribute and sell our products.

Our ability to receive revenues may be dependent upon the sales and marketing efforts of any future co-marketing partners and third-party distributors. At this time, we have not entered into an agreement with any commercialization partner and only plan to do so prior to commercialization. If we fail to reach an agreement with any commercialization partner, or upon reaching such an agreement that partner fails to sell a large volume of our products, it may have a negative impact on our business, financial condition and results of operations.

We have no experience manufacturing product candidates on a clinical or commercial scale and will be dependent on third parties for the manufacture of our product candidates. If we experience problems with any of these third parties, they could delay clinical development or marketing approval of our product candidates or our ability to sell any approved products.

We do not have any manufacturing facilities. We expect to rely on third-party manufacturers for the manufacture of our product candidates for clinical trials and for commercial supply of any product candidate for which we obtain marketing approval.

We may be unable to establish agreements with third-party manufacturers for clinical or commercial supply on terms favorable to us, or at all. Even if we are able to establish agreements with third-party manufacturers, reliance on third-party manufacturers entails additional risks, including:

- reliance on the third party for regulatory compliance and quality assurance;
- the possible breach of the manufacturing agreement by the third party, including the inability to supply sufficient quantities or to meet quality standards or timelines; and

- the possible termination or nonrenewal of the agreement by the third party at a time that is costly or inconvenient for us.

Third-party manufacturers may not be able to comply with U.S. cGMPs or similar regulatory requirements outside the United States. Our failure, or the failure of our third-party manufacturers, to comply with cGMPs or other applicable regulations, even if such failures do not relate specifically to our product candidates or approved products, could result in sanctions being imposed on us or the manufacturers, including fines, injunctions, civil penalties, delays, suspension or withdrawal of approvals, license revocation, seizures or recalls of product candidates, operating restrictions and criminal prosecutions, any of which could adversely affect supplies of our product candidates and harm our business and results of operations.

Any product that we develop may compete with other product candidates and products for access to these manufacturing facilities. There are a limited number of manufacturers that operate under cGMPs and that might be capable of manufacturing for us.

Any performance failure on the part of our manufacturers, including a failure that may not relate specifically to our product candidates or approved products, could delay clinical development or marketing approval or adversely impact our ability to generate commercial sales. If our contract manufacturers cannot perform as agreed, we may be required to replace that manufacturer.

Our anticipated future dependence upon others for the manufacture of our current and future product candidates or products may adversely affect our future profit margins and our ability to commercialize any product candidates that receive marketing approval on a timely and competitive basis.

Furthermore, we expect to rely on third parties to release, label, store and distribute drug supplies for our clinical trials. Any performance failure on the part of these third parties, including a failure that may not relate specifically to our product candidates, could delay or otherwise adversely impact clinical development or marketing approval of our product candidates or commercialization of our drug, producing losses and depriving us of potential revenue.

Moreover, our manufacturers and suppliers may experience difficulties related to their overall businesses and financial stability, which could result in delays or interruptions of supply of our product candidates.

Manufacturing risks may adversely affect our ability to manufacture our product and could reduce our gross margin and profitability.

Our business strategy depends on our ability to manufacture our product candidates in sufficient quantities and on a timely basis so as to meet our obligations with respect to our clinical trials and upon marketing approval, to meet consumer demand, while adhering to product quality standards, complying with regulatory requirements and managing manufacturing costs. We are subject to numerous risks relating to our manufacturing capabilities, including:

- quality or reliability defects in product components that we source from third-party suppliers, including manufacturing compliance with federal and state regulations;
- our inability to secure product components in a timely manner, in sufficient quantities or on commercially reasonable terms;
- our failure to increase production of products to meet demand
- our inability to modify production lines to enable us to efficiently produce future products or implement changes in current products in response to regulatory requirements; and
- Potential damage to or destruction of our manufacturing equipment or manufacturing facility.

If demand for our product candidates increases in the future, we will have to invest additional resources to purchase components, hire and train employees, and enhance our manufacturing processes. If we fail to increase our production capacity efficiently, our sales may not increase in line with our forecasts and our operating margins could fluctuate or decline. In addition, although we expect some of our product candidates in development to share product features and components, manufacturing of some of our product candidates may require the modification of our production lines, the hiring of specialized employees, the identification of new suppliers for specific components,

or the development of new manufacturing technologies. It may not be possible for us to manufacture these product candidates at a cost or in quantities sufficient to make these product candidates commercially viable. Any of these factors may affect our ability to manufacture our product and could reduce our gross margin and profitability.

The Company maintains single supply relationships for certain key components, and its business and operating results could be harmed if supply is restricted or ends or the price of raw materials used in its manufacturing process increases.

The Company is dependent on sole suppliers or a limited number of suppliers for certain components that are integral to its finished products. If these or other suppliers encounter financial, operating or other difficulties or if the Company's relationship with them changes, it may be unable to quickly establish or qualify replacement sources of supply and could face production interruptions, delays and inefficiencies. In addition, technology changes by the Company's vendors could disrupt access to required manufacturing capacity or require expensive, time consuming development efforts to adapt and integrate new equipment or processes. The Company's growth may exceed the capacity of one or more of these suppliers to produce the needed equipment and materials in sufficient quantities to support its growth. Any one of these factors could harm the Company's business and growth prospects.

We may not be able to manage our manufacturing and supply chain effectively, which would harm our results of operations.

We must accurately forecast our clinical trial obligations, and, in the future, market demand, for our product candidates in order to have adequate product inventory available to fulfil our timeline and customer orders timely. Our forecasts will be based on multiple assumptions that may cause our estimates to be inaccurate, and thus affect our ability to ensure adequate manufacturing capability to satisfy product candidate needs or market demand. Any material delay in our ability to obtain timely product inventories from our manufacturing facility and our ingredient suppliers could prevent us from satisfying increased consumer demand for our products, resulting in material harm to our clinical trials, brand and business. In addition, we will need to continuously monitor our inventory and product mix against forecasted demand to avoid having inadequate product inventory or having too much product inventory on hand. If we are unable to manage our supply chain effectively, our operating costs may increase materially.

We may in the future have conflicts with our current or future partners or third party providers that could delay or prevent the development or commercialization of our current and future product candidates.

We may in the future have conflicts with our current or future partners or third party providers, such as conflicts concerning the interpretation of pre-clinical or clinical data, the achievement of milestones, the interpretation of contractual obligations, payments for services, development obligations or the ownership of intellectual property developed during our collaboration. If any conflicts arise with any of our partners, such partner may act in a manner that is adverse to our best interests. Any such disagreement could result in one or more of the following, each of which could delay or prevent the development or commercialization of our current and future product candidates, and in turn prevent us from generating revenues:

- unwillingness on the part of a partner to pay us milestone payments or royalties we believe are due to us under a collaboration;
- uncertainty regarding ownership of intellectual property rights arising from our collaborative activities, which could prevent us from entering into additional collaborations;
- unwillingness by the partner to cooperate in the development or manufacture of the product, including providing us with product data or materials;
- unwillingness on the part of a partner to keep us informed regarding the progress of its development and commercialization activities or to permit public disclosure of the results of those activities;
- initiating of litigation or alternative dispute resolution options by either party to resolve the dispute; or
- attempts by either party to terminate the agreement.

Our product candidates may face competition sooner than anticipated from biosimilar products.

Even if we are successful in achieving regulatory approval to commercialize a product candidate faster than our competitors, our product candidates may face competition from biosimilar products. In the United States, our product candidates are regulated by the FDA as biologic products and we intend to seek approval for these product candidates pursuant to the BLA pathway. The Biologics Price Competition and Innovation Act of 2009, or BPCIA, created an abbreviated pathway for the approval of biosimilar and interchangeable biologic products. The abbreviated regulatory pathway establishes legal authority for the FDA to review and approve biosimilar biologics, including the possible designation of a biosimilar as “interchangeable” based on its similarity to an existing brand product. Under the BPCIA, an application for a biosimilar product cannot be approved by the FDA until 12 years after the original branded product was approved under a BLA. The law is complex and is still being interpreted and implemented by the FDA. As a result, its ultimate impact, implementation, and meaning are subject to uncertainty.

There is a risk that any exclusivity we may be afforded if any of our product candidates are approved as a biologic product under a BLA could be shortened due to congressional action, the results of recent litigation, or otherwise, or that the FDA will not consider our product candidates to be reference products for competing products, potentially creating the opportunity for generic or biosimilar competition sooner than anticipated. Moreover, the extent to which a biosimilar product, once approved, will be substituted for any one of our reference products in a way that is similar to traditional generic substitution for non-biologic products is not yet clear, and will depend on a number of marketplace and regulatory factors that are still developing. In addition, a competitor could decide to forego the biosimilar approval path and submit a full BLA after completing its own preclinical studies and clinical trials. In such cases, any exclusivity to which we may be eligible under the BPCIA would not prevent the competitor from marketing its product as soon as it is approved.

In addition, critics of the 12-year exclusivity period in the biosimilar pathway law will likely continue to seek to shorten the data exclusivity period and/or to encourage the FDA to interpret narrowly the law’s provisions regarding which new products receive data exclusivity. In December 2019, the US agreed to remove from the United States-Mexico-Canada Agreement a requirement for at least 10 years of data exclusivity for biologic products. Also, the FDA is considering whether subsequent changes to a licensed biologic would be protected by the remainder of the reference product’s original 12-year exclusivity period (a concept known in the generic drug context as “umbrella exclusivity”). If the FDA were to decide that umbrella exclusivity does not apply to biological reference products or were to make other changes to the exclusivity period, this could expose us to biosimilar competition at an earlier time. There also have been, and may continue to be, legislative and regulatory efforts to promote competition through policies enabling easier generic and biosimilar approval and commercialization, including efforts to lower standards for demonstrating biosimilarity or interchangeability, limit patents that may be litigated and/or patent settlements and implement preferential reimbursement policies for biosimilars.

If competitors are able to obtain marketing approval for biosimilars referencing our product candidates, if approved, such products may become subject to competition from such biosimilars, with the attendant competitive pressure and potential adverse consequences. Such competitive products may be able to immediately compete with us in each indication for which our product candidates may have received approval.

Our primary competitors have significantly greater resources and experience than we do, which may make it difficult for us to successfully develop our vaccine candidates, or may result in others discovering, developing or commercializing products before or more successfully than us.

The vaccine market is intensely competitive and is dominated by a small number of multinational, globally established pharmaceutical corporations with significant resources; Pfizer, Merck, GlaxoSmithKline and Sanofi together control approximately 75% of the global vaccine market. We may also face competition from many different sources, including pharmaceutical and biotechnology companies, academic institutions, governmental agencies and public and private research institutions. For example, Sanofi and SK Chemicals have partnered to develop a PCV, and Affinivax and Astellas have partnered to develop an affinity-bound pneumococcal vaccine.

Vaccine candidates that we successfully develop and commercialize may compete with existing vaccines and new vaccines that may become available in the future. Many of our competitors have substantially greater financial, lobbying, technical, human and other resources than we do and may be better equipped to develop, manufacture and market technologically superior vaccines, including the potential that our competitors may develop chemical processes or utilize novel technologies for developing vaccines that may be superior to those we employ. In addition,

many of these competitors have significantly greater experience than we have in undertaking preclinical testing and clinical trials of new products and in obtaining regulatory approvals, including for many vaccine franchises. Accordingly, our competitors may succeed in obtaining FDA approval or a preferred recommendation for their products. For example, Prevnar 13 obtained FDA approval for the prevention of invasive pneumococcal disease, or IPD, in infants based on non-inferior IgG antibody responses relative to Prevnar, using the surrogate immune endpoints established by the prior Prevnar field efficacy study. Pfizer is currently implementing a similar approach to development of its 20-valent PCV vaccine candidate, and may have a more efficient path to regulatory approval given Pfizer's and the FDA's previous experience with Prevnar 13. For more information, see the section entitled "Business — Competition."

Many of our competitors have established distribution channels for the commercialization of their vaccine products, whereas we have no such established channels or capabilities. In addition, many competitors have greater name recognition, more extensive collaborative relationships or the ability to leverage a broader vaccine portfolio. Our commercial opportunity could be reduced or eliminated if our competitors develop and commercialize vaccines that are safer, more effective, more convenient, less expensive or with a more favorable label than any vaccine candidates that we may develop.

As a result of these factors, our competitors may obtain regulatory approval of their products before we are able to, which may limit our ability to develop or commercialize our vaccine candidates. Our competitors may also develop vaccines that are safer, more effective, more widely accepted or less expensive than ours, and may also be more successful than we are in manufacturing and marketing their products. These advantages could render our vaccine candidates obsolete or non-competitive before we can recover the costs of such vaccine candidates' development and commercialization.

Mergers and acquisitions in the pharmaceutical and biotechnology industries may result in even more resources being concentrated among a smaller number of our competitors. Smaller and early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. These third parties compete with us in recruiting and retaining qualified scientific, management and commercial personnel, establishing clinical trial sites and subject enrollment for clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs.

Product liability lawsuits against us could cause us to incur substantial liabilities and to limit commercialization of any products that we may develop.

We face an inherent risk of product liability exposure related to the testing of our current product candidates or future product candidates in human clinical trials and will face an even greater risk if we commercially sell any products that we may develop. Product liability claims may be brought against us by subjects enrolled in our clinical trials, patients, healthcare providers or others using, administering or selling our product. If we cannot successfully defend ourselves against claims that our product candidates or product caused injuries, we could incur substantial liabilities. Regardless of merit or eventual outcome, liability claims may result in:

- decreased demand for any product candidates or products that we may develop;
- termination of clinical trial sites or entire clinical trial programs;
- injury to our reputation and significant negative media attention;
- withdrawal of clinical trial participants;
- significant costs to defend the related litigation;
- substantial monetary awards to trial subjects or patients;
- loss of revenue;
- diversion of management and scientific resources from our business operations; and
- the inability to commercialize any products that we may develop.

Prior to engaging in future clinical trials, we intend to obtain product liability insurance coverage at a level that we believe is customary for similarly situated companies and adequate to provide us with insurance coverage for foreseeable risks; however, we may be unable to obtain such coverage at a reasonable cost, if at all. If we are able to obtain product liability insurance, we may not be able to maintain insurance coverage at a reasonable cost or in an amount adequate to satisfy any liability that may arise and such insurance may not be adequate to cover all liabilities that we may incur. Furthermore, we intend to expand our insurance coverage for products to include the sale of commercial products if we obtain regulatory approval for our product candidates in development, but we may be unable to obtain commercially reasonable product liability insurance for any products that receive regulatory approval. Large judgments have been awarded in class action lawsuits based on drugs that had unanticipated side effects. A successful product liability claim or series of claims brought against us, particularly if judgments exceed our insurance coverage, could decrease our cash and adversely affect our business.

We may engage in acquisitions that could disrupt our business, cause dilution to our stockholders or reduce our financial resources.

In the future, we may enter into transactions to acquire other businesses, products or technologies. If we do identify suitable candidates, we may not be able to make such acquisitions on favorable terms, or at all. Any acquisitions we make may fail to strengthen our competitive position and these transactions may be viewed negatively by customers or investors. We may decide to incur debt in connection with an acquisition or issue our common stock or other equity securities to the stockholders of the acquired company, which would reduce the percentage ownership of our existing stockholders. We could incur losses resulting from undiscovered liabilities of the acquired business that are not covered by the indemnification we may obtain from the seller. In addition, we may not be able to successfully integrate the acquired personnel, technologies and operations into our existing business in an effective, timely and non-disruptive manner. Acquisitions may also divert management attention from day-to-day responsibilities, increase our expenses and reduce our cash available for operations and other uses. We cannot predict the number, timing or size of future acquisitions or the effect that any such transactions might have on our operating results.

Security threats to our information technology infrastructure and/or our physical buildings could expose us to liability and damage our reputation and business.

It is essential to our business strategy that our technology and network infrastructure and our physical buildings remain secure and are perceived by our customers and corporate partners to be secure. Despite security measures, however, any network infrastructure may be vulnerable to cyber-attacks by hackers and other security threats. We may face cyber-attacks that attempt to penetrate our network security, sabotage or otherwise disable our research, products and services, misappropriate our or our customers' and partners' proprietary information, which may include personally identifiable information, or cause interruptions of our internal systems and services. Despite security measures, we also cannot guarantee security of our physical buildings. Physical building penetration or any cyber-attacks could negatively affect our reputation, damage our network infrastructure and our ability to deploy our products and services, harm our relationship with customers and partners that are affected, and expose us to financial liability.

Additionally, there are a number of state, federal and international laws protecting the privacy and security of health information and personal data. For example, the Health Insurance Portability and Accountability Act of 1996, or HIPAA, imposes limitations on the use and disclosure of an individual's healthcare information by healthcare providers, healthcare clearinghouses, and health insurance plans, or, collectively, covered entities, and also grants individuals rights with respect to their health information. HIPAA also imposes compliance obligations and corresponding penalties for non-compliance on individuals and entities that provide services to healthcare providers and other covered entities. As part of the American Recovery and Reinvestment Act of 2009, or ARRA, the privacy and security provisions of HIPAA were amended. ARRA also made significant increases in the penalties for improper use or disclosure of an individual's health information under HIPAA and extended enforcement authority to state attorneys general. As amended by ARRA and subsequently by the final omnibus rule adopted in 2013, HIPAA also imposes notification requirements on covered entities in the event that certain health information has been inappropriately accessed or disclosed, notification requirements to individuals, federal regulators, and in some cases, notification to local and national media. Notification is not required under HIPAA if the health information that is

improperly used or disclosed is deemed secured in accordance with encryption or other standards developed by the U.S. Department of Health and Human Services. Most states have laws requiring notification of affected individuals and/or state regulators in the event of a breach of personal information, which is a broader class of information than the health information protected by HIPAA. Many state laws impose significant data security requirements, such as encryption or mandatory contractual terms, to ensure ongoing protection of personal information. Activities outside of the U.S. implicate local and national data protection standards, impose additional compliance requirements and generate additional risks of enforcement for non-compliance. We may be required to expend significant capital and other resources to ensure ongoing compliance with applicable privacy and data security laws, to protect against security breaches and hackers or to alleviate problems caused by such breaches.

We will need to grow the size of our organization in the future, and we may experience difficulties in managing this growth.

As of September 30, 2021, we had 2 full-time and 7 subcontracted employees. We will need to grow the size of our organization in order to support our continued development and potential commercialization of our product candidates. As our development and commercialization plans and strategies continue to develop, our need for additional managerial, operational, manufacturing, sales, marketing, financial and other resources may increase. Our management, personnel and systems currently in place may not be adequate to support this future growth. Future growth would impose significant added responsibilities on members of management, including:

- managing our clinical trials effectively;
- identifying, recruiting, maintaining, motivating and integrating additional employees;
- managing our internal development efforts effectively while complying with our contractual obligations to licensors, licensees, contractors and other third parties;
- improving our managerial, development, operational, information technology, and finance systems; and
- expanding our facilities.

If our operations expand, we will also need to manage additional relationships with various strategic partners, suppliers and other third parties. Our future financial performance and our ability to commercialize our product candidates and to compete effectively will depend, in part, on our ability to manage any future growth effectively, as well as our ability to develop a sales and marketing force when appropriate. To that end, we must be able to manage our development efforts and pre-clinical studies and clinical trials effectively and hire, train and integrate additional management, research and development, manufacturing, administrative and sales and marketing personnel. The failure to accomplish any of these tasks could prevent us from successfully growing our company.

Our future success depends on our ability to retain our executive officers and to attract, retain and motivate qualified personnel.

We are highly dependent upon our personnel, including Joseph Hernandez, our Chief Executive Officer and members of our board of directors. The loss of Mr. Hernandez's services could impede the achievement of our research, development and commercialization objectives. We have not obtained, do not own, nor are we the beneficiary of, key-person life insurance. Our future growth and success depend on our ability to recruit, retain, manage and motivate our employees. The loss of any member of our senior management team or the inability to hire or retain experienced management personnel could compromise our ability to execute our business plan and harm our operating results. Because of the specialized scientific and managerial nature of our business, we rely heavily on our ability to attract and retain qualified scientific, technical and managerial personnel. The competition for qualified personnel in the biotechnology field is intense and as a result, we may be unable to continue to attract and retain qualified personnel necessary for the development of our business.

Our Chief Executive Officer, Joseph Hernandez, also holds certain management positions and directorships of other companies and may allocate his time to such other businesses, thereby causing conflicts of interest in his determination as to how much time to devote to our affairs. This could have a negative impact on our ability to implement our plan of operation.

Our Chief Executive Officer, Joseph Hernandez is engaged in other business endeavors for which he may be entitled to substantial compensation, which may result in a conflict of interest in allocating his time between our operations and his other businesses. Pursuant to Mr. Hernandez's employment agreement that will be effective as of the consummation of this offering, Mr. Hernandez shall be employed with the Company on a full-time basis, but shall be permitted to participate in certain limited business activities. Subject to our Board's prior approval, Mr. Hernandez may serve as an officer, stakeholder, or member of the board of directors or advisory board (or the equivalent in the case of a non-corporate entity) of non-competing for-profit businesses and charitable organizations, provided, however, that such activities do not materially interfere, individually or in the aggregate, with the performance of his duties and responsibilities to Blue Water Vaccines. Accordingly, although Mr. Hernandez's primary occupation is his service to Blue Water Vaccines, he also holds certain management positions and directorships of other companies, and may allocate his time to such other businesses, thereby causing conflicts of interest in his determination as to how much time to devote to our affairs.

Mr. Hernandez may also have competitive fiduciary obligations and pecuniary interests relating to their other business ventures that conflict with our interests. Mr. Hernandez's employment agreement contains certain restrictive covenants while he is employed at Blue Water Vaccines. These restrictive covenants, generally, restrict Mr. Hernandez from engaging in any other business or occupation that (x) conflicts with the interests of the Company, (y) interferes with the proper and efficient performance of his duties for the Company, or (z) interferes with his exercise of judgment in the Company's best interests. He is further subject to general restrictions regarding the solicitation of employees, certain customers, as well as the use or disclosure of any confidential information, of the business of Blue Water Vaccines. Notwithstanding the foregoing, to the extent that these additional activities may have a conflict between their interests and ours, this could have a negative impact on our ability to implement our plan of operations.

Certain significant personnel may allocate their time to other businesses, which may cause conflicts of interest in their determination as to how much time to devote to our affairs and potentially competitive fiduciary and pecuniary interests that conflict with our interests.

Our executive officers are supported by Ronald Cobb, Brian Price and Andrew Skibo, who provide valuable technical and strategic capabilities to us. They are not currently required to commit their full time to our affairs. As such, they may allocate their time to other businesses. From time to time, those other commitments may limit the nature of services that Messrs. Cobb, Price and Skibo provide to our Company, for instance, where such activities may involve overlapping industries and products. If these individuals' other business affairs require them to devote substantial amounts of time to such affairs in excess of their current commitment levels, it could limit their ability to devote time or resources to our affairs, which may have a negative impact on our ability to complete our plan of operations.

Inadequate funding for the FDA, the SEC and other government agencies could hinder their ability to hire and retain key leadership and other personnel, prevent new products and services from being developed or commercialized in a timely manner or otherwise prevent those agencies from performing normal business functions on which the operation of our business may rely, which could negatively impact our business.

The ability of the FDA to review and approve new products can be affected by a variety of factors, including government budget and funding levels, ability to hire and retain key personnel and accept the payment of user fees, and statutory, regulatory, and policy changes. Average review times at the agency have fluctuated in recent years as a result. In addition, government funding of the SEC and other government agencies on which our operations may rely, including those that fund research and development activities is subject to the political process, which is inherently fluid and unpredictable.

Disruptions at the FDA and other agencies may also slow the time necessary for new drugs to be reviewed and/or approved by necessary government agencies, which would adversely affect our business. For example, over the last several years, including beginning on December 22, 2018, the U.S. government has shut down several times

and certain regulatory agencies, such as the FDA and the SEC, have had to furlough critical FDA, SEC and other government employees and stop critical activities. If a prolonged government shutdown occurs, it could significantly impact the ability of the FDA to timely review and process our regulatory submissions, which could have a material adverse effect on our business. Further, upon completion of this offering and in our operations as a public company, future government shutdowns could impact our ability to access the public markets and obtain necessary capital in order to properly capitalize and continue our operations.

We may be adversely affected by natural disasters, pandemics and other catastrophic events, and by man-made problems such as terrorism, that could disrupt our business operations and our business continuity and disaster recovery plans may not adequately protect us from a serious disaster.

If a disaster, power outage or other event occurred that prevented us from using all or a significant portion of our headquarters, that damaged critical infrastructure, such as enterprise financial systems, manufacturing resource planning or enterprise quality systems, or that otherwise disrupted operations, it may be difficult or, in certain cases, impossible for us to continue our business for a substantial period of time. Our contract manufacturers' and suppliers' facilities are located in multiple locations, where other natural disasters or similar events, such as blizzards, tornadoes, fires, explosions or large-scale accidents or power outages, and other public health emergencies could severely disrupt our operations and have a material adverse effect on our business, financial condition, operating results and prospects. For example, the recent COVID-19 pandemic may cause significant disruption to our business operations, the operations of our third-party contractors and suppliers and the operations of our clinical trials, including as a result of significant restrictions or bans on travel into and within the geographic areas in which our manufacturers produce our product candidates or where we conduct our clinical trials. A public health emergency could also affect the operations of the FDA and other regulatory or public health authorities, resulting in delays to meetings related to planned or completed clinical trials and ultimately of reviews and approvals of our product candidates. Such disruption could impede, delay, limit or prevent our employees and third-party contractors from beginning or continuing research and development or clinical trial-related activities, which may impede, delay, limit or prevent initiation or completion of our ongoing clinical trials and preclinical research and ultimately lead to the delay or denial of regulatory approval of our product candidates, which could seriously harm our operations and financial condition.

Our employees, independent contractors, principal investigators, consultants, vendors and clinical research organizations, or CROs, may engage in misconduct or other improper activities, including noncompliance with regulatory standards and requirements.

We are exposed to the risk that our employees, independent contractors, principal investigators, consultants, vendors and CROs may engage in fraudulent or other illegal activity. Misconduct by these persons could include intentional, reckless or negligent conduct or unauthorized activity that violates: laws or regulations, including those laws requiring the reporting of true, complete and accurate information to the FDA or foreign regulatory authorities; manufacturing standards; federal, state and foreign healthcare fraud and abuse laws and data privacy; or laws that require the true, complete and accurate reporting of financial information or data. In particular, sales, marketing and other business arrangements in the healthcare industry are subject to extensive laws intended to prevent fraud, kickbacks, self-dealing and other abusive practices. These laws may restrict or prohibit a wide range of business activities, including research, manufacturing, distribution, pricing, discounting, marketing and promotion, sales commission, customer incentive programs and other business arrangements. Activities subject to these laws also involve the improper use of information obtained in the course of clinical trials, or illegal misappropriation of drug product, which could result in regulatory sanctions or other actions or lawsuits stemming from a failure to comply with such laws or regulations, and serious harm to our reputation. In addition, federal procurement laws impose substantial penalties for misconduct in connection with government contracts and require certain contractors to maintain a code of business ethics and conduct. If any such actions are instituted against us, we may have to terminate employees or others involved and the impact of such termination can result in our experiencing delays and additional costs associated with replacing the services being provided. If we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business, including the imposition of civil, criminal and administrative penalties, damages, monetary fines, possible exclusion from participation in Medicare, Medicaid and other federal healthcare programs, FDA debarment, contractual damages, reputational harm, diminished profits and future earnings, and curtailment of our operations, any of which could adversely affect our ability to operate our business and our operating results.

Macroeconomic pressures in the markets in which we operate, including, but not limited to, the effect of the COVID-19 pandemic may alter the ways in which we conduct our business operations and manage our financial capacities.

To varying degrees, the ways in which we conduct our business operations and manage our financial capacities are influenced by macroeconomic conditions that affect companies directly involved in or providing services related to the drug and biological product development. For example, real GDP growth, business and investor confidence, the COVID-19 pandemic, inflation, employment levels, oil prices, interest rates, tax rates, availability of consumer and business financing, housing market conditions, foreign currency exchange rate fluctuations, costs for items such as fuel and food and other macroeconomic trends can adversely affect not only our decisions and ability to engage in research and development and clinical trials, but also those of our management, employees, third-party contractors, manufacturers and suppliers, competitors, shareholders and regulatory authorities. In addition, geopolitical issues around the world and how our markets are positioned can also impact the macroeconomic conditions and could have a material adverse impact on our financial results.

Economic uncertainty may adversely affect our access to capital, cost of capital and ability to execute our business plan as scheduled.

Generally, worldwide economic conditions remain uncertain. Access to capital markets is critical to our ability to operate. Traditionally, biotechnology companies have funded their research and development expenditures through raising capital in the equity markets. Declines and uncertainties in these markets in the past have severely restricted raising new capital and have affected companies' ability to continue to expand or fund existing research and development efforts. We require significant capital for research and development for our vaccine candidates and clinical trials. The general economic and capital market conditions, both in the U.S. and worldwide, have been volatile in the past and at times have adversely affected our access to capital and increased the cost of capital. There is no certainty that the capital and credit markets will be available to raise additional capital on favorable terms. If economic conditions become worse, our future cost of equity or debt capital and access to the capital markets could be adversely affected. In addition, if we are unable to access the capital markets on favorable terms, our ability to execute our business plan as scheduled would be compromised. Moreover, we rely and intend to rely on third-parties, including clinical research organizations, contract manufacturing organizations and other important vendors and consultants. Global economic conditions may result in a disruption or delay in the performance of our third-party contractors and suppliers. If such third-parties are unable to adequately satisfy their contractual commitments to us in a timely manner, our business could be adversely affected.

Risks Related to Our Intellectual Property

It is difficult and costly to protect our proprietary rights, and we may not be able to ensure their protection. If our patent position does not adequately protect our product candidates, others could compete against us more directly, which would harm our business, possibly materially.

Our commercial success will depend in part on obtaining and maintaining patent protection and trade secret protection of our current product candidates and future product candidates, the processes used to manufacture them and the methods for using them, as well as successfully defending these patents against third-party challenges. Our ability to stop third parties from making, using, selling, offering to sell or importing our product candidates is dependent upon the extent to which we have rights under valid and enforceable patents or trade secrets that cover these activities.

The patent positions of biotechnology and pharmaceutical companies can be highly uncertain and involve complex legal and factual questions for which important legal principles remain unresolved. No consistent policy regarding the breadth of claims allowed in pharmaceutical patents has emerged to date in the U.S. or in foreign jurisdictions outside of the U.S. Changes in either the patent laws or interpretations of patent laws in the U.S. and other countries may diminish the value of our intellectual property. Accordingly, we cannot predict the breadth of claims that may be enforced in the patents that may be issued from the applications we currently license or may in the future own or license from third parties. Further, if any patents we obtain or license are deemed invalid and unenforceable, our ability to commercialize or license our product candidates or technology could be adversely affected.

Others may file patent applications covering products and technologies that are similar, identical or competitive to ours or important to our business. We cannot be certain that any patent application owned by a third party will not have priority over patent applications filed or in-licensed by us, or that we or our licensors will not be involved in interference, opposition, re-examination, review, reissue, post grant review or invalidity proceedings before U.S. or non-U.S. patent offices. Such proceedings are also expensive and time consuming.

The degree of future protection for our proprietary rights is uncertain because legal means afford only limited protection and may not adequately protect our rights or permit us to gain or keep our competitive advantage. For example:

- others may be able to make compounds that are similar to our product candidates, but that are not covered by the claims of our licensed patents;
- any patents that we obtain from licensing or otherwise may not provide us with any competitive advantages;
- any granted patents that we rely upon may be held invalid or unenforceable as a result of legal challenges by third parties; and
- the patents of others may have an adverse effect on our business.

We are dependent on licensed intellectual property. If we were to lose our rights to licensed intellectual property, we may not be able to continue developing or commercializing our product candidates, if approved. If we breach any of the agreements under which we license the use, development and commercialization rights to our product candidates or technology from third parties or, in certain cases, we fail to meet certain development deadlines, we could lose license rights that are important to our business.

We do not currently own any patents, and we are heavily reliant upon a number of license agreements under which we are granted rights to intellectual property that are important to our business and we may need or choose to enter into additional license agreements in the future. Our existing license agreements impose, and we expect that future license agreements will impose on us, various development, regulatory and/or commercial diligence obligations, payment of milestones and/or royalties and other obligations. If we fail to comply with our obligations under these agreements, or we are subject to a bankruptcy, the licensor may have the right to terminate the license, in which event we would not be able to market products covered by the license. Our business could suffer, for example, if any current or future licenses terminate, if the licensors fail to abide by the terms of the license, if the licensed patents or other rights are found to be invalid or unenforceable, or if we are unable to enter into necessary licenses on acceptable terms.

Licensing of intellectual property is of critical importance to our business and involves complex legal, business and scientific issues. Disputes may arise between us and our licensors regarding intellectual property subject to a license agreement, including:

- the scope of rights granted under the license agreement and other interpretation-related issues;
- whether and the extent to which our technology and processes infringe on intellectual property of the licensor that is not subject to the licensing agreement;
- our right to sublicense patent and other rights to third parties;
- our diligence obligations with respect to the use of the licensed technology in relation to our development and commercialization of our product candidates, and what activities satisfy those diligence obligations;
- our obligation to pursue or license others to pursue development of indications we are not currently pursuing;
- the ownership of inventions and know-how resulting from the joint creation or use of intellectual property by our licensors and us and our partners;
- our right to transfer or assign the license; and
- the effects of termination.

If disputes over intellectual property that we have licensed prevent or impair our ability to maintain our current licensing arrangements on acceptable terms, we may be unable to successfully develop and commercialize the affected product candidates.

We have entered into several licenses to support our various programs. Termination of any of these license agreements would have a material adverse impact on our ability to develop and commercialize derived products under each respective agreement.

We may enter into additional licenses to third-party intellectual property that are necessary or useful to our business. Our current licenses and any future licenses that we may enter into impose various royalty payment, milestone, and other obligations on us. Under some license agreements, we may not control prosecution of the licensed intellectual property, or may not have the first right to enforce the intellectual property. In those cases, we may not be able to adequately influence patent prosecution or enforcement, or prevent inadvertent lapses of coverage due to failure to pay maintenance fees. If we fail to comply with any of our obligations under a current or future license agreement, the licensor may allege that we have breached our license agreement, and may accordingly seek to terminate our license. Termination of any of our current or future licenses could result in our loss of the right to use the licensed intellectual property, which could materially adversely affect our ability to develop and commercialize a product candidate or product, if approved, as well as harm our competitive business position and our business prospects. Under some license agreements, termination may also result in the transfer of or granting in rights under certain of our intellectual property and information related to the product candidate being developed under the license, such as regulatory information.

The agreements under which we license intellectual property or technology to or from third parties are complex, and certain provisions in such agreements may be susceptible to multiple interpretations. The resolution of any contract interpretation disagreement that may arise could narrow what we believe to be the scope of our rights to the relevant intellectual property or technology or increase what we believe to be our financial or other obligations under the relevant agreement, either of which could have a material adverse effect on our business, financial condition, results of operations and prospects. Moreover, if disputes over intellectual property that we have licensed prevent or impair our ability to maintain our current licensing arrangements on commercially acceptable terms, we may be unable to successfully develop and commercialize the affected product candidates.

In addition, if our licensors fail to abide by the terms of the license, if the licensors fail to prevent infringement by third parties, if the licensed patents or other rights are found to be invalid or unenforceable, or if we are unable to enter into necessary licenses on acceptable terms, our business could suffer. Moreover, our licensors may own or control intellectual property that has not been licensed to us and, as a result, we may be subject to claims, regardless of their merit, that we are infringing, misappropriating or otherwise violating the licensor's rights.

Similarly, if we are unable to successfully obtain rights to required third-party intellectual property rights or maintain the existing intellectual property rights we have, we may have to seek alternative options, such as developing new product candidates with design-around technologies, which may require more time and investment, or abandon development of the relevant research programs or product candidates and our business, financial condition, results of operations and prospects could suffer.

Some of the intellectual property covered by our licenses concerns patent applications and provisional applications. We cannot assure investors that any of the currently pending or future patent applications will result in granted patents, nor can we predict how long it will take for such patents to be granted.

Some of intellectual property covered by our licenses concerns certain, specified patent rights (including patent applications, provisional patent applications and PCT patent applications). While in some instances, the licensors have agreed to assume responsibility for the preparation, filing, prosecution and maintenance of patent applications covered by the licensed patent rights, we cannot be certain as to when or if final patents will be issued for those patent applications covered by the licensed patent rights. However, the licensors may not successfully prosecute certain patent applications, the prosecution of which they control, under which we are only a licensee and on which our business substantially depends. Even if patents issue from these applications, there is no assurance that the patents will be free from defects or survive validity or enforceability challenges, the licensors may fail to maintain these patents, may decide not to pursue litigation against third-party infringers, may fail to prove infringement or may fail to defend against counterclaims of patent invalidity or unenforceability.

Moreover, it is possible that the licensed pending patent applications will not result in granted patents, and even if such pending patent applications grant as patents, they may not provide a basis for intellectual property protection of commercially viable vaccine products or may not provide us with any competitive advantages. Further, it is possible that, for any of the patents that may be granted in the future, others will design around the licensed patent rights or identify methods for preventing or treating infectious diseases that do not concern the rights covered by our licenses. Further, we cannot assure investors that other parties will not challenge any patents granted to the licensors or that courts or regulatory agencies will hold licensor's patents to be valid or enforceable. We cannot guarantee investors that, if required to defend the covered patents, we will have the funds to or be successful in defending challenges made against the licensed patents and patent applications. Any successful third-party challenge to the licensed patents could result in the unenforceability or invalidity of such patents, or to such patents being interpreted narrowly or otherwise in a manner adverse to our interests. Our ability to establish or maintain a technological or competitive advantage over our competitors may be diminished because of these uncertainties.

Even if patents are issued based on patent applications to which we have been granted a license, because the patent positions of pharmaceutical and biotechnology products are complex and uncertain, we cannot predict the scope and extent of patent protection for our product candidates.

Any patents that may be issued based on patent applications that we have been granted licenses to will not ensure sufficient protection with respect to our activities for a number of reasons, including without limitation the following:

- any issued patents may not be broad or strong enough to prevent competition from other vaccine products including identical or similar products;
- if patents are not issued or if issued patents expire, there would be no protections against competitors making generic equivalents;
- there may be prior art of which we are not aware that may affect the validity or enforceability of a patent claim;
- there may be other patents existing, now or in the future, in the patent landscape for our product candidates that we seek to commercialize or develop, if any, that will affect our freedom to operate;
- if patents that we have been granted licenses to are challenged, a court could determine that they are not valid or enforceable;
- a court could determine that a competitor's technology or product does not infringe patents that we have been granted licenses to;
- patents to which we have been granted licenses could irretrievably lapse due to failure to pay fees or otherwise comply with regulations, or could be subject to compulsory licensing; and
- if we encounter delays in our development or clinical trials, the period of time during which we could market our products under patent protection would be reduced.

Obtaining and maintaining patent protection depends on compliance with various procedural, document submission, fee payment and other requirements imposed by governmental patent agencies, and patent protection could be reduced or eliminated for noncompliance with these requirements.

Periodic maintenance fees on any issued patent are due to be paid to the United States Patent and Trademark Office (USPTO) and foreign Intellectual Property Offices in several stages over the term of the patent. Maintenance fees are also due for pending patent applications in some countries. The USPTO and various foreign governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process. While an inadvertent lapse can in many cases be cured by payment of a late fee or by other means in accordance with the applicable rules, there are situations in which noncompliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. Noncompliance events that could result in abandonment or lapse of a patent or patent application include, but are not limited to, failure to respond to office actions within prescribed time limits, non-payment of fees and failure to properly legalize and submit formal documents. In such an event, our competitors might be able to enter the market, which would have a material adverse effect on our business.

The life of patent protection is limited, and third parties could develop and commercialize products and technologies similar or identical to ours and compete directly with us after the patent licensed to us expires, which could materially and adversely affect our ability to commercialize our products and technologies.

The life of a patent and the protection it affords is limited. For example, in the United States, if all maintenance fees are timely paid, the natural expiration of a patent is generally 20 years from its earliest U.S. non-provisional filing date. In Europe, the expiration of an invention patent is 20 years from its filing date. Even if we successfully obtain patent protection for an approved vaccine candidate, it may face competition from biosimilar medications. Manufacturers of biosimilar drugs may challenge the scope, validity or enforceability of the patents underlying our technology in court or before a patent office, and the patent holder may not be successful in enforcing or defending those intellectual property rights and, as a result, we may not be able to develop or market the relevant product candidate exclusively, which would materially adversely affect any potential sales of that product.

Given the amount of time required for the development, testing and regulatory review of new vaccine candidates, patents protecting such vaccine candidates might expire before or shortly after such vaccine candidates are commercialized. As a result, the patents and patent applications licensed to us may not provide us with sufficient rights to exclude others from commercializing products similar or identical to ours. Even if we believe that the patents involved are eligible for certain (and time-limited) patent term extensions, there can be no assurance that the applicable authorities, including the FDA and the USPTO, and any equivalent regulatory authority in other countries, will agree with our assessment of whether such extensions are available, and such authorities may refuse to grant extensions to such patents, or may grant more limited extensions than requested. For example, depending upon the timing, duration and specifics of any FDA marketing approval of any product candidates we may develop, one or more of the U.S. patents licensed to us may be eligible for limited patent term extension under the Drug Price Competition and Patent Term Restoration Action of 1984, or Hatch-Waxman Amendments. The Hatch-Waxman Amendments permit a patent extension term of up to five years as compensation for patent term lost during the FDA regulatory review process. A patent term extension cannot extend the remaining term of a patent beyond a total of 14 years from the date of product approval, only one patent may be extended and only those claims covering the approved drug, a method for using it, or a method for manufacturing it may be extended. However, we may not be granted an extension because of, for example, failing to exercise due diligence during the testing phase or regulatory review process, failing to apply within applicable deadlines, failing to apply prior to expiration of relevant patents, or otherwise failing to satisfy applicable requirements. Moreover, the applicable time period or the scope of patent protection afforded could be less than requested. If we are unable to obtain patent term extension or term of any such extension is less than requested, our competitors may obtain approval of competing products following our patent expiration, and our business could be harmed. Changes in either the patent laws or interpretation of the patent laws in the United States and other countries may diminish the value of our patents or narrow the scope of our patent protection.

The patents and pending patent applications licensed to us for our product candidates are expected to expire on various dates. Upon the expiration, we will not be able to assert such licensed patent rights against potential competitors, which would materially adversely affect our business, financial condition, results of operations and prospects.

We may need to license intellectual property from third parties, and such licenses may not be available or may not be available on commercially reasonable terms or at all.

There may be intellectual property rights existing now, or in the future, relevant to our product candidates that we seek to commercialize or develop, if any, that may affect our ability to commercialize such product candidates. Although the Company is not aware of any such intellectual property rights, a third-party may hold intellectual property rights, including patent rights, that are important or necessary to the development or manufacture of our product candidates. Even if all our main product candidates are covered by patents, it may be necessary for us to use the patented or proprietary technology of third parties to commercialize our product candidates, in which case we would be required to obtain a license from these third parties. Such a license may not be available on commercially reasonable terms, or at all, and we could be forced to accept unfavorable contractual terms. In that event, we may be required to expend significant time and resources to redesign our technology, product candidates, or the methods for manufacturing them or to develop or license replacement technology, all of which may not be feasible on a technical or commercial basis. If we are unable to do so, our business could be harmed.

The licensing or acquisition of third-party intellectual property rights is a competitive area, and several more established companies may pursue strategies to license or acquire third party intellectual property rights that we may consider attractive or necessary. These established companies may have a competitive advantage over us due to their

size, capital resources and greater clinical development and commercialization capabilities. In addition, companies that perceive us to be a competitor may be unwilling to assign or license rights to us. We also may be unable to license or acquire third party intellectual property rights on terms that would allow us to make an appropriate return on our investment or at all. If we are unable to successfully obtain rights to required third party intellectual property rights or maintain the existing intellectual property rights we have, we may have to abandon development of the relevant program or product candidate, which could have a material adverse effect on our business, financial condition, results of operations, and prospects.

We may infringe the intellectual property rights of others, which may prevent or delay our product development efforts and stop us from commercializing or increase the costs of commercializing our product candidates.

Our success will depend in part on our ability to operate without infringing the proprietary rights of third parties. We are not aware of any third party proprietary rights that our planned products will infringe or misappropriate, but we have not conducted any freedom to operate study as we are in the earliest stages of development. We thus cannot guarantee that our product candidates, or manufacture or use of our product candidates, will not infringe third-party patents. Furthermore, a third party may claim that we are using inventions covered by the third party's patent rights and may go to court to stop us from engaging in our normal operations and activities, including making or selling our product candidates. These lawsuits are costly and could affect our results of operations and divert the attention of managerial and scientific personnel. Some of these third parties may be better capitalized and have more resources than us. There is a risk that a court would decide that we are infringing the third party's patents and would order us to stop the activities covered by the patents. In that event, we may not have a viable way around the patent and may need to halt commercialization of our product candidates. In addition, there is a risk that a court will order us to pay the other party damages for having violated the other party's patents. In addition, we may be obligated to indemnify our licensors and collaborators against certain intellectual property infringement claims brought by third parties, which could require us to expend additional resources. The pharmaceutical and biotechnology industries have produced a proliferation of patents, and it is not always clear to industry participants, including us, which patents cover various types of products or methods of use. The coverage of patents is subject to interpretation by the courts, and the interpretation is not always uniform.

If we are sued for patent infringement, we would need to demonstrate that our product candidates or methods either do not infringe the patent claims of the relevant patent or that the patent claims are invalid, and we may not be able to do this. Proving invalidity is difficult. For example, in the U.S., proving invalidity requires a showing of clear and convincing evidence to overcome the presumption of validity enjoyed by issued patents. Even if we are successful in these proceedings, we may incur substantial costs and diversion of management's time and attention in pursuing these proceedings, which could have a material adverse effect on us. If we are unable to avoid infringing the patent rights of others, we may be required to seek a license, which may not be available, defend an infringement action or challenge the validity of the patents in court. Patent litigation is costly and time consuming. We may not have sufficient resources to bring these actions to a successful conclusion. In addition, if we do not obtain a license, develop or obtain non-infringing technology, fail to defend an infringement action successfully or have infringed patents declared invalid, we may incur substantial monetary damages, encounter significant delays in bringing our product candidates to market and be precluded from manufacturing or selling our product candidates.

Some of our competitors may be able to sustain the costs of complex patent litigation more effectively than us or the third parties from whom we license intellectual property because they have substantially greater resources. In addition, any uncertainties resulting from the initiation and continuation of any litigation could have a material adverse effect on our ability to raise the funds necessary to continue our operations.

We may become involved in lawsuits to protect or enforce our intellectual property, which could be expensive, time consuming and unsuccessful.

In addition to the possibility of litigation relating to infringement claims asserted against it, we may become a party to other patent litigation and other proceedings, including *inter partes* review proceedings, post-grant review proceedings, derivation proceedings declared by the USPTO and similar proceedings in foreign countries, regarding intellectual property rights with respect to our current or future technologies or product candidates or products. The cost to us of any patent litigation or other proceeding, even if resolved in our favor, could be substantial. Some of our competitors may be able to sustain the costs of such litigation or proceedings more effectively than we can

because of their substantially greater financial resources. Patent litigation and other proceedings may also absorb significant management time. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could impair our ability to compete in the marketplace.

Competitors may infringe or otherwise violate our intellectual property, including patents that may issue to or be licensed by us. As a result, we may be required to file claims in an effort to stop third-party infringement or unauthorized use. Any such claims could provoke these parties to assert counterclaims against us, including claims alleging that we infringe their patents or other intellectual property rights, and/or that any of our intellectual property, including licensed intellectual property, is invalid and/or unenforceable. This can be prohibitively expensive, particularly for a company of our size, and time-consuming, and even if we are successful, any award of monetary damages or other remedy we may receive may not be commercially valuable. In addition, in an infringement proceeding, a court may decide that our asserted intellectual property is not valid or is unenforceable, or may refuse to stop the other party from using the technology at issue on the grounds that our intellectual property does not cover its technology. An adverse determination in any litigation or defense proceedings could put our intellectual property at risk of being invalidated or interpreted narrowly and could put our patent applications at risk of not issuing.

If the breadth or strength of our patent or other intellectual property rights is compromised or threatened, it could allow third parties to exploit and, in particular, commercialize our technology or products or result in our inability to exploit and/or commercialize our technology and products without infringing third-party intellectual property rights. Further, third parties may be dissuaded from collaborating with us.

Interference or derivation proceedings brought by the USPTO or its foreign counterparts may be necessary to determine the priority of inventions with respect to our patent applications, and we may also become involved in other proceedings, such as re-examination proceedings, before the USPTO or its foreign counterparts. Due to the substantial competition in the pharmaceutical space, the number of such proceedings may increase. This could delay the prosecution of our pending patent applications or impact the validity and enforceability of any future patents that we may obtain. In addition, any such litigation, submission or proceeding may be resolved adversely to us and, even if successful, may result in substantial costs and distraction to our management.

If we are not able to adequately prevent disclosure of trade secrets and other proprietary information, the value of our technology and product could be significantly diminished.

We also rely on trade secrets to protect our proprietary technologies, especially where we do not believe patent protection is appropriate or obtainable. However, trade secrets are difficult to protect. We rely in part on confidentiality agreements with our employees, consultants, outside scientific collaborators, sponsored researchers and other advisors to protect our trade secrets and other proprietary information. These agreements may not effectively prevent disclosure of confidential information and may not provide an adequate remedy in the event of unauthorized disclosure of confidential information. In addition, others may independently discover our trade secrets and proprietary information. For example, the FDA, as part of its transparency initiative, is currently considering whether to make additional information publicly available on a routine basis, including information that we may consider to be trade secrets or other proprietary information, and it is not clear at the present time how the FDA's disclosure policies may change in the future, if at all. Costly and time-consuming litigation could be necessary to enforce and determine the scope of our proprietary rights, and failure to obtain or maintain trade secret protection could adversely affect our competitive business position.

We may be subject to claims that our employees or consultants have wrongfully used or disclosed alleged trade secrets.

As is common in the biotechnology and pharmaceutical industries, we employ individuals who were previously employed at other biotechnology or pharmaceutical companies, including our competitors or potential competitors. Although we try to ensure that our employees and consultants do not use the proprietary information or know-how of others in their work for us, we may be subject to claims that we or our employees or consultants have inadvertently or otherwise used or disclosed trade secrets or other proprietary information of their former employers. Litigation may be necessary to defend against these claims. If we fail in defending any such claims, in addition to paying monetary damages, we could lose valuable intellectual property rights or personnel, which could adversely impact our business. Even if we are successful in defending against these claims, litigation could result in substantial costs and be a distraction to management.

Our intellectual property may not be sufficient to protect our product candidates from competition, which may negatively affect our business as well as limit our partnership or acquisition appeal.

We may be subject to competition despite the existence of intellectual property we license or may in the future own. We can give no assurances that our intellectual property claims will be sufficient to prevent third parties from designing around patents we own or license and developing and commercializing competitive products. The existence of competitive products that avoid our intellectual property could materially adversely affect our operating results and financial condition. Furthermore, limitations, or perceived limitations, in our intellectual property may limit the interest of third parties to partner, collaborate or otherwise transact with us, if third parties perceive a higher than acceptable risk to commercialization of our product candidates or future product candidates.

We may elect to sue a third party, or otherwise make a claim, alleging infringement or other violation of patents, trademarks, trade dress, copyrights, trade secrets, domain names or other intellectual property rights that we either own or license from a third party. If we do not prevail in enforcing our intellectual property rights in this type of litigation, we may be subject to:

- paying monetary damages related to the legal expenses of the third party;
- facing additional competition that may have a significant adverse effect on our product pricing, market share, business operations, financial condition, and the commercial viability of our product; and
- restructuring our company or delaying or terminating select business opportunities, including, but not limited to, research and development, clinical trial, and commercialization activities, due to a potential deterioration of our financial condition or market competitiveness.

A third party may also challenge the validity, enforceability or scope of the intellectual property rights that we license or own and the result of these challenges may narrow the scope or claims of or invalidate patents that are integral to our product candidates in the future. There can be no assurance that we will be able to successfully defend patents we own or license in an action against third parties due to the unpredictability of litigation and the high costs associated with intellectual property litigation, amongst other factors.

Intellectual property rights may be less extensive and enforcement more difficult in jurisdictions outside of the U.S. Therefore, we may not be able to protect our intellectual property and third parties may be able to market competitive products that may use some or all of our intellectual property.

Changes to patent law, including the Leahy-Smith America Invents Act of 2011 and the Patent Reform Act of 2009 and other future article of legislation, may substantially change the regulations and procedures surrounding patent applications, issuance of patents and prosecution of patents. We can give no assurances that the patents of our licensor can be defended or will protect us against future intellectual property challenges, particularly as they pertain to changes in patent law and future patent law interpretations.

Risks Related to Healthcare Compliance and Other Regulations

If we fail to comply with healthcare regulations, we could face substantial enforcement actions, including civil and criminal penalties and our business, operations and financial condition could be adversely affected.

We could be subject to healthcare fraud and abuse laws and patient privacy laws of both the federal government and the states in which we conduct our business. The laws include:

- the federal healthcare program anti-kickback law, which prohibits, among other things, persons from soliciting, receiving or providing remuneration, directly or indirectly, to induce either the referral of an individual, for an item or service or the purchasing or ordering of a good or service, for which payment may be made under federal healthcare programs such as the Medicare and Medicaid programs;
- federal false claims laws which prohibit, among other things, individuals or entities from knowingly presenting, or causing to be presented, claims for payment from Medicare, Medicaid, or other third-party payers that are false or fraudulent, and which may apply to entities like us which provide coding and billing information to customers;

- HIPAA which prohibits executing a scheme to defraud any healthcare benefit program or making false statements relating to healthcare matters and which also imposes certain requirements relating to the privacy, security and transmission of individually identifiable health information;
- the FDCA which among other things, strictly regulates drug manufacturing and product marketing, prohibits manufacturers from marketing drug products for off-label use and regulates the distribution of drug samples; and
- state law equivalents of each of the above federal laws, such as anti-kickback and false claims laws which may apply to items or services reimbursed by any third-party payer, including commercial insurers, and state laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and often are not preempted by federal laws, thus complicating compliance efforts.

If our operations are found to be in violation of any of the laws described above or any governmental regulations that apply to us, we may be subject to penalties, including civil and criminal penalties, damages, fines and the curtailment or restructuring of our operations. Any penalties, damages, fines, curtailment or restructuring of our operations could adversely affect our ability to operate our business and our financial results. Although compliance programs can mitigate the risk of investigation and prosecution for violations of these laws, the risks cannot be entirely eliminated. Any action against us for violation of these laws, even if we successfully defend against it, could cause us to incur significant legal expenses and divert management's attention from the operation of our business. Moreover, achieving and sustaining compliance with applicable federal and state privacy, security and fraud laws may prove costly.

Healthcare Reform in the United States has been implemented in the past, and we expect further changes to be proposed in the future, leading to potential uncertainty in the healthcare industry. Violations of healthcare laws can have an adverse impact on our ability to advance our product candidates and our operating results.

In the United States, there have been, and continue to be, a number of legislative and regulatory changes and proposed changes to the healthcare system that could affect the future results of pharmaceutical manufacturers' operations. In particular, there have been and continue to be a number of initiatives at the federal and state levels that seek to reduce healthcare costs. For example, the Affordable Care Act, or the ACA, which was originally enacted in March 2010 and subsequently amended, includes measures to significantly change the way healthcare is financed by both governmental and private insurers. Among the provisions of the ACA of greatest importance to the pharmaceutical and biotechnology industry are the following:

- an annual, nondeductible fee on any entity that manufactures or imports certain branded prescription drugs and biologic agents, apportioned among these entities according to their market share in certain government healthcare programs;
- implementation of the federal physician payment transparency requirements, sometimes referred to as the "Physician Payments Sunshine Act";
- a licensure framework for follow-on biologic products;
- a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research;
- establishment of a Center for Medicare Innovation at the Centers for Medicare & Medicaid Services to test innovative payment and service delivery models to lower Medicare and Medicaid spending, potentially including prescription drug spending;
- an increase in the statutory minimum rebates a manufacturer must pay under the Medicaid Drug Rebate Program, to 23.1% and 13% of the average manufacturer price for most branded and generic drugs, respectively and capped the total rebate amount for innovator drugs at 100% of the Average Manufacturer Price;
- a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for certain drugs and biologics, including our product candidates, that are inhaled, infused, instilled, implanted or injected;

- extension of manufacturers' Medicaid rebate liability to covered drugs dispensed to individuals who are enrolled in Medicaid managed care organizations;
- expansion of eligibility criteria for Medicaid programs by, among other things, allowing states to offer Medicaid coverage to additional individuals and by adding new mandatory eligibility categories for individuals with income at or below 133% of the federal poverty level, thereby potentially increasing manufacturers' Medicaid rebate liability;
- a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer 50% point-of-sale discounts off negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period, as a condition for the manufacturer's outpatient drugs to be covered under Medicare Part D; and
- expansion of the entities eligible for discounts under the Public Health program.

Some of the provisions of the ACA have yet to be implemented, and there have been legal and political challenges to certain aspects of the ACA. The former Trump administration issued certain executive orders and other directives designed to delay, circumvent, or loosen certain requirements mandated by the ACA. Concurrently, Congress considered legislation that would repeal or repeal and replace all or part of the ACA. While Congress has not passed repeal legislation, the Tax Cuts and Jobs Act of 2017 included a provision repealing, effective January 1, 2019, the tax-based shared responsibility payment imposed by the ACA on certain individuals who fail to maintain qualifying health coverage for all or part of a year that is commonly referred to as the "individual mandate." Congress may consider other legislation to repeal or replace elements of the ACA.

Many of the details regarding the implementation of the ACA are yet to be determined, and at this time, the full effect that the ACA would have on a pharmaceutical manufacturer remains unclear. In particular, there is uncertainty surrounding the applicability of the biosimilars provisions under the ACA. This uncertainty is heightened by President Biden's January 28, 2021 Executive Order on Strengthening Medicaid and the Affordable Care Act, which indicates that the Biden administration may significantly modify the ACA and potentially revoke any changes implemented by the Trump administration.

The FDA has issued several guidance documents, but no implementing regulations, on biosimilars. A number of biosimilar applications have been approved over the past few years. The regulations that are ultimately promulgated and their implementation are likely to have considerable impact on the way pharmaceutical manufacturers conduct their business and may require changes to current strategies. A biosimilar is a biological product that is highly similar to an approved drug notwithstanding minor differences in clinically inactive components, and for which there are no clinically meaningful differences between the biological product and the approved drug in terms of the safety, purity, and potency of the product.

Individual states have become increasingly aggressive in passing legislation and implementing regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access, and marketing cost disclosure and transparency measures, and to encourage importation from other countries and bulk purchasing. Legally mandated price controls on payment amounts by third-party payors or other restrictions could harm a pharmaceutical manufacturer's business, results of operations, financial condition and prospects. In addition, regional healthcare authorities and individual hospitals are increasingly using bidding procedures to determine what pharmaceutical products and which suppliers will be included in their prescription drug and other healthcare programs. This could reduce ultimate demand for certain products or put pressure product pricing, which could negatively affect a pharmaceutical manufacturer's business, results of operations, financial condition and prospects.

It is also possible that President Biden will further reform the ACA and other federal programs in a manner that may impact our operations. For example, the Biden administration has indicated that a goal of its administration is to expand and support Medicaid and the ACA and to make high-quality healthcare accessible and affordable. The potential increase in patients covered by government funded insurance may impact our pricing. Further, it is possible that the Biden administration may further increase the scrutiny on drug pricing.

In addition, given recent federal and state government initiatives directed at lowering the total cost of healthcare, the Biden administration, Congress and state legislatures will likely continue to focus on healthcare reform, the cost of prescription drugs and biologics and the reform of the Medicare and Medicaid programs. For

example, there have been several recent U.S. congressional inquiries and proposed federal and proposed and enacted state legislation designed to, among other things, bring more transparency to drug pricing, review the relationship between pricing and manufacturer patient programs, reduce the costs of drugs under Medicare and reform government program reimbursement methodologies for drug products. Further, in July 2020, former President Trump issued a number of executive orders that are intended to lower the costs of prescription drug products including one that directs HHS to finalize the rulemaking process on modifying the anti-kickback law safe harbors for discounts for plans, pharmacies, and pharmaceutical benefit managers. No assurance can be given whether these orders will remain in effect under the Biden administration.

While no one can predict the full outcome of any such legislation, it may result in decreased reimbursement for drugs and biologics, which may further exacerbate industry-wide pressure to reduce prescription drug prices. This could harm a pharmaceutical manufacturer's ability to generate revenue. Increases in importation or re-importation of pharmaceutical products from foreign countries into the United States could put competitive pressure on a pharmaceutical manufacturer's ability to profitably price products, which, in turn, could adversely affect business, results of operations, financial condition and prospects. A pharmaceutical manufacturer might elect not to seek approval for or market products in foreign jurisdictions in order to minimize the risk of re-importation, which could also reduce the revenue generated from product sales. It is also possible that other legislative proposals having similar effects will be adopted.

Furthermore, regulatory authorities' assessment of the data and results required to demonstrate safety and efficacy can change over time and can be affected by many factors, such as the emergence of new information, including on other products, changing policies and agency funding, staffing and leadership. We cannot be sure whether future changes to the regulatory environment will be favorable or unfavorable to our business prospects. For example, average review times at the FDA for marketing approval applications can be affected by a variety of factors, including budget and funding levels and statutory, regulatory and policy changes.

Our employees may engage in misconduct or other improper activities, including noncompliance with regulatory standards and requirements, which could cause significant liability for us and harm our reputation.

We are exposed to the risk of employee fraud or other misconduct, including intentional failures to comply with FDA regulations or similar regulations of comparable foreign regulatory authorities, provide accurate information to the FDA or comparable foreign regulatory authorities, comply with manufacturing standards we have established, comply with federal and state healthcare fraud and abuse laws and regulations and similar laws and regulations established and enforced by comparable foreign regulatory authorities, report financial information or data accurately or disclose unauthorized activities to us. Employee misconduct could also involve the improper use of information obtained in the course of clinical trials, which could result in regulatory sanctions and serious harm to our reputation. It is not always possible to identify and deter employee misconduct, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to be in compliance with such laws or regulations. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business and results of operations, including the imposition of significant civil, criminal and administrative penalties, damages, fines, imprisonment, exclusion from government funded healthcare programs, such as Medicare and Medicaid, and integrity oversight and reporting obligations.

We may rely on government funding and collaboration with government entities for our vaccine development, which adds uncertainty to our research and development efforts and may impose requirements that increase the costs of development, commercialization and production of any programs developed under those government-funded programs.

Because we anticipate the resources necessary to develop our vaccine product candidates will be substantial, we may explore funding and development collaboration opportunities with the U.S. government and its agencies. For example, we may apply for certain grant funding from BARDA, the NIH or other government agencies to further the research, development, manufacture, testing, and regulatory approval of our vaccine product candidates. We have no control or input over whether an application for BARDA grant funding or any other funding will be accepted or approved, in full or in part, and we cannot provide investors with any assurances that we will receive such funding.

Contracts and grants funded by the U.S. government and its agencies, contain provisions that reflect the government's substantial rights and remedies, many of which are not typically found in commercial contracts, including powers of the government to:

- reduce or modify the government's obligations under such agreements without the consent of the other party;
- claim rights, including Intellectual Property rights, in products and data developed under such agreements;
- audit contract-related costs and fees, including allocated indirect costs;
- suspend the contractor or grantee from receiving new contracts pending resolution of alleged violations of procurement laws or regulations.
- impose U.S. manufacturing requirements for products that embody inventions conceived or first reduced to practice under such agreements;
- suspend or debar the contractor or grantee from doing future business with the government;
- control and potentially prohibit the export of products;
- pursue criminal or civil remedies under the False Claims Act, False Statements Act, and similar remedy provisions specific to government agreements; and
- limit the government's financial liability to amounts appropriated by the U.S. Congress on a fiscal-year basis, thereby leaving some uncertainty about the future availability of funding for a program even after it has been funded for an initial period.

If we received such grants or agreements, we may not have the right to prohibit the U.S. government from using certain technologies developed by us, and we may not be able to prohibit third-parties, including our competitors, from using those technologies in providing products and services to the U.S. government. Further, under such agreements we could be subject to obligations to and the rights of the U.S. government set forth in the Bayh-Dole Act of 1980, meaning the U.S. government may have rights in certain inventions developed under these government-funded agreements, including a non-exclusive, non-transferable, irrevocable worldwide license to use inventions for any governmental purpose. In addition, the U.S. government could have the right to require us to grant exclusive, partially exclusive, or nonexclusive licenses to any of these inventions to a third party if it determines that: (i) adequate steps have not been taken to commercialize the invention; (ii) government action is necessary to meet public health or safety needs; or (iii) government action is necessary to meet requirements for public use under federal regulations, also referred to as "march-in rights." Although the U.S. government's historic restraint with respect to these rights indicates they are unlikely to be used, any exercise of the march-in rights could harm our competitive position, business, financial condition, results of operations, and prospects. In the event we would be subject to the U.S. government's exercise such march-in rights, we may receive compensation that is deemed reasonable by the U.S. government in its sole discretion, which may be less than what we might be able to obtain in the open market.

Additionally, the U.S. government requires that any products embodying any invention generated through the use of U.S. government funding be manufactured substantially in the United States. The manufacturing preference requirement can be waived if the owner of the intellectual property can show that reasonable but unsuccessful efforts have been made to grant licenses on similar terms to potential licensees that would be likely to manufacture substantially in the United States or that under the circumstances domestic manufacture is not commercially feasible. This preference for U.S. manufacturers may limit our ability to contract with non-U.S. manufacturers for products covered by such intellectual property.

Although we may need to comply with some of these obligations, not all of the aforementioned obligations may be applicable to us unless and only to the extent that we receive a government grant, contract or other agreement. However, as an organization, we are relatively new to government contracting and new to the regulatory compliance obligations that such contracting entails. If we were to fail to maintain compliance with those obligations, we may be subject to potential liability and to termination of our contracts, which may have a materially adverse effect on our ability to develop our vaccine product candidates.

We are subject to U.S. and certain foreign export and import controls, sanctions, embargoes, anti-corruption laws and anti-money laundering laws and regulations. Compliance with these legal standards could impair our ability to compete in domestic and international markets. We can face criminal liability and other serious consequences for violations, which can harm our business.

We are subject to export control and import laws and regulations, including the U.S. Export Administration Regulations, U.S. Customs regulations, various economic and trade sanctions regulations administered by the U.S. Treasury Department's Office of Foreign Assets Controls, the U.S. Foreign Corrupt Practices Act of 1977, as amended, the U.S. domestic bribery statute contained in 18 U.S.C. § 201, the U.S. Travel Act, the USA PATRIOT Act and other state and national anti-bribery and anti-money laundering laws in the countries in which we conduct activities. Anti-corruption laws are interpreted broadly and prohibit companies and their employees, agents, contractors, and other collaborators from authorizing, promising, offering or providing, directly or indirectly, improper payments or anything else of value to recipients in the public or private sector. We may engage third parties for clinical trials outside of the United States, to sell our products abroad once we enter a commercialization phase and/or to obtain necessary permits, licenses, patent registrations, and other regulatory approvals. We have direct or indirect interactions with officials and employees of government agencies or government-affiliated hospitals, universities and other organizations. We can be held liable for the corrupt or other illegal activities of our employees, agents, contractors and other collaborators, even if we do not explicitly authorize or have actual knowledge of such activities. Any violations of the laws and regulations described above may result in substantial civil and criminal fines and penalties, imprisonment, the loss of export or import privileges, debarment, tax reassessments, breach of contract and fraud litigation, reputational harm and other consequences.

Risks Related to Owning our Common Stock and this Offering

The market price of our common stock may be highly volatile, and you could lose all or part of your investment.

Prior to this offering, there was no public market for shares of our common stock. The offering price for the shares of our common stock sold in this offering will be determined by negotiation between the underwriters and us. This price may not reflect the market price of our common stock following this offering. As a result, the trading price of our common stock is likely to be volatile, which may prevent you from being able to sell your shares at or above the public offering price. Our stock price could be subject to wide fluctuations in response to a variety of factors, which include:

- whether we achieve our anticipated corporate objectives;
- actual or anticipated fluctuations in our financial condition and operating results;
- changes in financial or operational estimates or projections;
- the development status of our product candidates and when our products receive regulatory approval;
- our execution of our sales and marketing, manufacturing and other aspects of our business plan;
- performance of third parties on whom we rely to manufacture our products, product components and product candidates, including their ability to comply with regulatory requirements;
- the results of our clinical studies and clinical trials;
- results of operations that vary from those of our competitors and the expectations of securities analysts and investors;
- changes in expectations as to our future financial performance, including financial estimates by securities analysts and investors;
- our announcement of significant contracts, acquisitions or capital commitments;
- announcements by our competitors of competing products or other initiatives;
- announcements by third parties of significant claims or proceedings against us;
- regulatory and reimbursement developments in the United States and abroad;

- future sales of our common stock;
- product liability claims;
- healthcare reform measures in the United States;
- additions or departures of key personnel; and
- general economic or political conditions in the United States or elsewhere.

In addition, the stock market in general, and the stock of medical technology companies like ours, in particular, have experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of the issuer. Such broad market and industry factors may negatively affect the market price of our common stock, regardless of our actual operating performance.

We may be subject to securities litigation, which is expensive and could divert our management's attention.

The market price of our securities may be volatile, and in the past, companies that have experienced volatility in the market price of their securities have been subject to securities class action litigation. We may be the target of this type of litigation in the future. Securities litigation against us could result in substantial costs and divert our management's attention from other business concerns, which could seriously harm our business.

Our amended and restated certificate of incorporation will require, to the fullest extent permitted by law, that derivative actions brought in our name, actions against our directors, officers, other employees or stockholders for breach of fiduciary duty and other similar actions may be brought only in the Court of Chancery in the State of Delaware and, if brought outside of Delaware, the stockholder bringing the suit will be deemed to have consented to service of process on such stockholder's counsel, which may have the effect of discouraging lawsuits against our directors, officers, other employees or stockholders.

Our amended and restated certificate of incorporation will require, to the fullest extent permitted by law, that derivative actions brought in our name, actions against our directors, officers, other employees or stockholders for breach of fiduciary duty and other similar actions may be brought only in the Court of Chancery in the State of Delaware and, if brought outside of Delaware, the stockholder bringing the suit will be deemed to have consented to service of process on such stockholder's counsel except any action (A) as to which the Court of Chancery in the State of Delaware determines that there is an indispensable party not subject to the jurisdiction of the Court of Chancery (and the indispensable party does not consent to the personal jurisdiction of the Court of Chancery within ten days following such determination), (B) which is vested in the exclusive jurisdiction of a court or forum other than the Court of Chancery, (C) for which the Court of Chancery does not have subject matter jurisdiction, or (D) any action arising under the Securities Act, as to which the Court of Chancery and the federal district court for the District of Delaware shall have concurrent jurisdiction. Any person or entity purchasing or otherwise acquiring any interest in shares of our capital stock shall be deemed to have notice of and consented to the forum provisions in our amended and restated certificate of incorporation. This choice of forum provision may make it more costly for a stockholder to bring a claim, and it may also limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or any of our directors, officers, other employees or stockholders, which may discourage lawsuits with respect to such claims, although our stockholders cannot waive our compliance with federal securities laws and the rules and regulations thereunder. Alternatively, if a court were to find the choice of forum provision contained in our amended and restated certificate of incorporation to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving such action in other jurisdictions, which could harm our business, operating results and financial condition.

Our amended and restated certificate of incorporation will provide that the exclusive forum provision will be applicable to the fullest extent permitted by applicable law. Section 27 of the Exchange Act creates exclusive federal jurisdiction over all suits brought to enforce any duty or liability created by the Exchange Act or the rules and regulations thereunder. As a result, the exclusive forum provision will not apply to suits brought to enforce any duty or liability created by the Exchange Act or any other claim for which the federal courts have exclusive jurisdiction. In addition, our amended and restated certificate of incorporation provides that, unless we consent in writing to the selection of an alternative forum, the federal district courts of the United States of America shall, to the fullest extent permitted by law, be the exclusive forum for the resolution of any complaint asserting a cause of action arising under the Securities Act of 1933, as amended, or the rules and regulations promulgated thereunder. We note, however, that

there is uncertainty as to whether a court would enforce this provision and that investors cannot waive compliance with the federal securities laws and the rules and regulations thereunder. Section 22 of the Securities Act creates concurrent jurisdiction for state and federal courts over all suits brought to enforce any duty or liability created by the Securities Act or the rules and regulations thereunder.

We have broad discretion in the use of the net proceeds from this offering and may invest or spend the proceeds in ways with which you disagree or that may not yield a return.

While we set forth our anticipated use for the net proceeds from this offering in the section titled “Use of Proceeds,” our management will have broad discretion on how to use and spend any proceeds that we receive from this offering and may, depending on the outcomes of our preclinical studies and other research, use the proceeds in ways that differ from the anticipated uses set forth in this prospectus. Investors in this offering will need to rely upon the judgment of our management with respect to the use of proceeds with only limited information concerning management’s specific intentions. It is possible that we may decide in the future not to use the proceeds of this offering in the manner described in this offering. Our management may spend a portion or all of the net proceeds from this offering in ways that holders of our common stock may not desire or that may not yield a significant return or any return at all. Investors will receive no notice or vote regarding any such change and may not agree with our decision on how to use such proceeds. If we fail to utilize the proceeds we receive from this offering effectively, our business and financial condition could be harmed and we may need to seek additional financing sooner than expected. Pending their use, we may also invest the net proceeds from this offering in a manner that does not produce income or that loses value.

There is no existing market for our common stock and we do not know if one will develop to provide you with adequate liquidity.

Prior to this offering, there has not been a public market for our common stock. Although we intend to apply to have our common stock listed on Nasdaq, an active trading market for our common stock may never develop or be sustained following this offering. You may not be able to sell your shares quickly or at the market price if trading in our common stock is not active. The initial public offering price for the shares will be determined by negotiations between us and the underwriters and may not be indicative of prices that will prevail in the trading market. You may not be able to sell your shares of our common stock at or above the price you paid in the offering. As a result, you could lose all or part of your investment. Further, an inactive market may also impair our ability to raise capital by selling shares of our common stock and may impair our ability to enter into strategic partnerships or acquire companies or products by using our shares of common stock as consideration.

Our principal stockholders and management own a significant percentage of our capital stock and will be able to exert a controlling influence over our business affairs and matters submitted to stockholders for approval.

After this offering, it is anticipated that our officers and directors, together with holders of 5% or more of our outstanding common stock before this offering and their respective affiliates, will beneficially own or control _____ shares of our common stock, which in the aggregate will represent approximately _____ % of the outstanding shares of our common stock, or _____ % if the underwriters’ option to purchase additional shares is exercised in full. As a result, if some of these persons or entities act together, they will have the ability to exercise significant influence over matters submitted to our stockholders for approval, including the election and removal of directors, amendments to our Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws, the approval of any business combination and any other significant corporate transaction. These actions may be taken even if they are opposed by other shareholders. This concentration of ownership may also have the effect of delaying or preventing a change of control of our company or discouraging others from making tender offers for our shares, which could prevent our stockholders from receiving a premium for their shares. Some of these persons or entities who make up our principal stockholders may have interests different from yours.

Our failure to meet the continued listing requirements of Nasdaq could result in a de-listing of our common stock.

If, after listing, we fail to satisfy the continued listing requirements of Nasdaq, such as the corporate governance requirements or the minimum closing bid price requirement, Nasdaq may take steps to de-list our common stock. Such a de-listing would likely have a negative effect on the price of our common stock and would impair your ability to sell or purchase our common stock when you wish to do so. In the event of a de-listing, we

would take actions to restore our compliance with Nasdaq Marketplace Rules, but our common stock may not be listed again, stabilize the market price or improve the liquidity of our common stock, prevent our common stock from dropping below the Nasdaq minimum bid price requirement or prevent future non-compliance with the Nasdaq Marketplace Rules.

If our shares become subject to the penny stock rules, it would become more difficult to trade our shares.

The SEC has adopted rules that regulate broker-dealer practices in connection with transactions in penny stocks. Penny stocks are generally equity securities with a price of less than \$5.00, other than securities registered on certain national securities exchanges or authorized for quotation on certain automated quotation systems, provided that current price and volume information with respect to transactions in such securities is provided by the exchange or system. If we do not obtain or retain a listing on Nasdaq and if the price of our common stock is less than \$5.00, our common stock will be deemed a penny stock. The penny stock rules require a broker-dealer, before a transaction in a penny stock not otherwise exempt from those rules, to deliver a standardized risk disclosure document containing specified information. In addition, the penny stock rules require that before effecting any transaction in a penny stock not otherwise exempt from those rules, a broker-dealer must make a special written determination that the penny stock is a suitable investment for the purchaser and receive (i) the purchaser's written acknowledgment of the receipt of a risk disclosure statement; (ii) a written agreement to transactions involving penny stocks; and (iii) a signed and dated copy of a written suitability statement. These disclosure requirements may have the effect of reducing the trading activity in the secondary market for our common stock, and therefore shareholders may have difficulty selling their shares.

Future sales of shares by existing stockholders could cause our stock price to decline.

If our existing stockholders sell, or indicate an intent to sell, substantial amounts of our common stock in the public market after the 180-day contractual lock-up and other legal restrictions on resale discussed in this prospectus lapse, the trading price of our common stock could decline significantly and could decline below the initial public offering price. Based on 2,172,371 shares of common stock outstanding as of September 30, 2021 (after giving effect to the conversion of all outstanding shares of convertible preferred stock and accrued dividends into an aggregate of up to 1,372,371 shares of common stock), upon the completion of this offering, we will have outstanding _____ shares of common stock, assuming no exercise of outstanding options or warrants, including the Representative's warrants. Of these shares, _____ shares of common stock, plus any shares sold pursuant to the underwriters' option to purchase additional shares, will be immediately freely tradable, without restriction, in the public market. If our existing stockholders sell substantial amounts of our common stock in the public market, or if the public perceives that such sales could occur, this could have an adverse impact on the market price of our common stock, even if there is no relationship between such sales and the performance of our business. We also intend to register all shares of common stock that we may issue under our equity compensation plan. Once we register these shares, they can be freely sold in the public market upon issuance, subject to volume limitations applicable to affiliates and the lock-up agreements described in the "Underwriting" section of this prospectus.

After the lock-up agreements pertaining to this offering expire and based on shares outstanding after this offering, an additional _____ shares will be eligible for sale in the public market. In addition, upon issuance, the 195,160 shares subject to outstanding options under our stock option plan and the shares reserved for future issuance under our stock option plan will become eligible for sale in the public market in the future, subject to certain legal and contractual limitations. If our existing stockholders sell substantial amounts of our common stock in the public market, or if the public perceives that such sales could occur, this could have an adverse impact on the market price of our common stock, even if there is no relationship between such sales and the performance of our business.

If you purchase shares of common stock in this offering, you will suffer immediate dilution of your investment.

The public offering price of our common stock will be substantially higher than the net tangible book value per share of our common stock. Therefore, if you purchase shares of our common stock in this offering, you will pay a price per share that substantially exceeds our net tangible book value per share after this offering. To the extent shares subsequently are issued under outstanding stock options, you will incur further dilution. Based on an assumed initial public offering price of \$ _____ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, you will experience immediate dilution of \$ _____ per share, representing the difference between our pro forma net tangible book value per share, after giving effect to this offering, and the

assumed initial public offering price. In addition, purchasers of common stock in this offering will have contributed approximately _____ % of the aggregate price paid by all purchasers of our stock but will own only approximately _____ % of our common stock outstanding after this offering.

We are an “emerging growth company” and the reduced disclosure requirements applicable to emerging growth companies could make our common stock less attractive to investors.

We are an “emerging growth company,” as defined in the JOBS Act. We may remain an “emerging growth company” until as late as December 31, 2026 (the fiscal year-end following the fifth anniversary of the completion of our initial public offering), though we may cease to be an “emerging growth company” earlier under certain circumstances, including (1) if the market value of our common stock that is held by nonaffiliates exceeds \$700 million as of any June 30, in which case we would cease to be an “emerging growth company” as of the following December 31, or (2) if our gross revenue exceeds \$1.07 billion in any fiscal year. “Emerging growth companies” may take advantage of certain exemptions from various reporting requirements that are applicable to other public companies, including not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act, reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and shareholder approval of any golden parachute payments not previously approved. Investors could find our common stock less attractive because we may rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our stock price may be more volatile.

In addition, Section 102 of the JOBS Act also provides that an “emerging growth company” can take advantage of the extended transition period provided in Section 7(a)(2)(B) of the Securities Act, for complying with new or revised accounting standards. An “emerging growth company” can therefore delay the adoption of certain accounting standards until those standards would otherwise apply to private companies.

We will incur significant costs as a result of operating as a public company and our management expects to devote substantial time to public company compliance programs.

As a public company, we will incur significant legal, accounting and other expenses due to our compliance with regulations and disclosure obligations applicable to us, including compliance with the Sarbanes-Oxley Act, as well as rules implemented by the SEC and Nasdaq. Shareholder activism, the current political environment and the current high level of government intervention and regulatory reform may lead to substantial new regulations and disclosure obligations, which may lead to additional compliance costs and impact, in ways we cannot currently anticipate, the manner in which we operate our business. Our management and other personnel will devote a substantial amount of time to these compliance programs and monitoring of public company reporting obligations and as a result of the new corporate governance and executive compensation related rules, regulations and guidelines prompted by the Dodd-Frank Act and further regulations and disclosure obligations expected in the future, we will likely need to devote additional time and costs to comply with such compliance programs and rules. These rules and regulations will cause us to incur significant legal and financial compliance costs and will make some activities more time-consuming and costly.

To comply with the requirements of being a public company, we may need to undertake various actions, including implementing new internal controls and procedures and hiring new accounting or internal audit staff. The Sarbanes-Oxley Act requires that we maintain effective disclosure controls and procedures and internal control over financial reporting. We are continuing to develop and refine our disclosure controls and other procedures that are designed to ensure that information required to be disclosed by us in the reports that we file with the SEC is recorded, processed, summarized and reported within the time periods specified in SEC rules and forms, and that information required to be disclosed in reports under the Securities Exchange Act of 1934, as amended, or the Exchange Act, is accumulated and communicated to our principal executive and financial officers. Our current controls and any new controls that we develop may become inadequate and weaknesses in our internal control over financial reporting may be discovered in the future. Any failure to develop or maintain effective controls when we become subject to this requirement could negatively impact the results of periodic management evaluations and annual independent registered public accounting firm attestation reports regarding the effectiveness of our internal control over financial reporting that we may be required to include in our periodic reports we will file with the SEC under Section 404 of the Sarbanes-Oxley Act of 2002, or the Sarbanes-Oxley Act, harm our operating results, cause us to fail to meet our reporting obligations or result in a restatement of our prior period financial statements.

In the event that we are not able to demonstrate compliance with the Sarbanes-Oxley Act, that our internal control over financial reporting is perceived as inadequate or that we are unable to produce timely or accurate financial statements, investors may lose confidence in our operating results and the price of our common stock could decline. In addition, if we are unable to continue to meet these requirements, we may not be able to remain listed on Nasdaq.

Our management team has limited experience managing a public company.

Most members of our management team have limited experience managing a publicly-traded company, interacting with public company investors and complying with the increasingly complex laws pertaining to public companies. Our management team may not successfully or efficiently manage our transition to being a public company subject to significant regulatory oversight and reporting obligations under the federal securities laws and the continuous scrutiny of securities analysts and investors. These new obligations and constituents will require significant attention from our senior management and could divert their attention away from the day-to-day management of our business, which could adversely affect our business, financial condition and operating results.

If we fail to maintain an effective system of internal controls, we may not be able to accurately report our financial results or prevent fraud which could subject us to regulatory sanctions, harm our business and operating results and cause the trading price of our stock to decline.

Effective internal controls required under Section 404 of the Sarbanes-Oxley Act, are necessary for us to provide reliable financial reports and effectively prevent fraud. If we cannot provide reliable financial reports or prevent fraud, our business, reputation and operating results could be harmed. We have discovered, and may in the future discover, areas of our internal controls that need improvement. We cannot be certain that the measures we have taken or intend to take will ensure that we maintain adequate controls over our financial processes and reporting in the future. Any failure to implement required new or improved controls or difficulties encountered in their implementation could subject us to regulatory sanctions, harm our business and operating results or cause us to fail to meet our reporting obligations. Inferior internal controls could also harm our reputation and cause investors to lose confidence in our reported financial information, which could have a negative impact on the trading price of our stock.

If securities or industry analysts do not publish research, or publish inaccurate or unfavorable research, about our business, our stock price and trading volume could decline.

The trading market for our common stock will depend, in part, on the research and reports that securities or industry analysts publish about us or our business. Securities and industry analysts do not currently, and may never, publish research on us. If no securities or industry analysts commence coverage of us, the price for our common stock could be negatively impacted. In the event securities or industry analysts initiate coverage, if one or more of the analysts who cover us downgrade our common stock or publish inaccurate or unfavorable research about our business, our stock price could decline. In addition, if our operating results fail to meet the forecast of analysts, our stock price could decline. If one or more of these analysts cease coverage of us or fail to publish reports on us regularly, demand for our common stock could decrease, which might cause our stock price and trading volume to decline.

Our Amended and Restated Certificate of Incorporation and our Amended and Restated Bylaws to be adopted in connection with the consummation of this offering, and Delaware law may have anti-takeover effects that could discourage, delay or prevent a change in control, which may cause our stock price to decline.

Our Amended and Restated Certificate of Incorporation and our Amended and Restated Bylaws and Delaware law could make it more difficult for a third party to acquire us, even if closing such a transaction would be beneficial to our stockholders. We are authorized to issue up to _____ shares of preferred stock. This preferred stock may be issued in one or more series, the terms of which may be determined at the time of issuance by our board of directors without further action by stockholders. The terms of any series of preferred stock may include voting rights (including the right to vote as a series on particular matters), preferences as to dividend, liquidation, conversion and redemption rights and sinking fund provisions. The issuance of any preferred stock could materially adversely affect the rights of the holders of our common stock, and therefore, reduce the value of our common stock. In particular, specific rights granted to future holders of preferred stock could be used to restrict our ability to merge with, or sell our assets to, a third party and thereby preserve control by the present management.

Provisions of our Amended and Restated Certificate of Incorporation, our Amended and Restated Bylaws and Delaware law also could have the effect of discouraging potential acquisition proposals or making a tender offer or delaying or preventing a change in control, including changes a stockholder might consider favorable. Such provisions may also prevent or frustrate attempts by our stockholders to replace or remove our management. In particular, our Amended and Restated Certificate of Incorporation, our Amended and Restated Bylaws and Delaware law, as applicable, among other things:

- provide the board of directors with the ability to alter the bylaws without stockholder approval;
- place limitations on the removal of directors;
- establish advance notice requirements for nominations for election to the board of directors or for proposing matters that can be acted upon at stockholder meetings; and
- provide that vacancies on the board of directors may be filled by a majority of directors in office, although less than a quorum.

These provisions, alone or together, could delay or prevent hostile takeovers and changes in control or changes in our management.

As a Delaware corporation, we are also subject to provisions of Delaware law, including Section 203 of the Delaware General Corporation law, which prevents certain stockholders holding more than 15% of our outstanding capital stock from engaging in certain business combinations without approval of the holders of at least two-thirds of our outstanding common stock not held by such stockholder.

Any provision of our Amended and Restated Certificate of Incorporation, Amended and Restated Bylaws or Delaware law that has the effect of delaying, preventing or deterring a change in control could limit the opportunity for our stockholders to receive a premium for their shares of our capital stock, and could also affect the price that some investors are willing to pay for our common stock.

We do not anticipate paying any cash dividends on our common stock in the foreseeable future and, as such, capital appreciation, if any, of our common stock will be your sole source of gain for the foreseeable future.

We have never declared or paid cash dividends on our common stock. We do not anticipate paying any cash dividends on our common stock in the foreseeable future. We currently intend to retain all available funds and any future earnings to fund the development and growth of our business. In addition, and any future loan arrangements we enter into may contain, terms prohibiting or limiting the amount of dividends that may be declared or paid on our common stock. As a result, capital appreciation, if any, of our common stock will be your sole source of gain for the foreseeable future.

A possible “short squeeze” due to a sudden increase in demand of our common stock that largely exceeds supply may lead to price volatility in our common stock.

Following this offering, investors may purchase our common stock to hedge existing exposure in our common stock or to speculate on the price of our common stock. Speculation on the price of our common stock may involve long and short exposures. To the extent aggregate short exposure exceeds the number of shares of our common stock available for purchase in the open market, investors with short exposure may have to pay a premium to repurchase our common stock for delivery to lenders of our common stock. Those repurchases may in turn, dramatically increase the price of our common stock until investors with short exposure are able to purchase additional common shares to cover their short position. This is often referred to as a “short squeeze.” A short squeeze could lead to volatile price movements in our common stock that are not directly correlated to the performance or prospects of our company and once investors purchase the shares of common stock necessary to cover their short position the price of our common stock may decline.

**CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS AND
INDUSTRY AND MARKET DATA**

Special Note Regarding Forward-Looking Statements

This prospectus contains forward-looking statements that involve substantial risks and uncertainties. The forward-looking statements are contained principally in the sections titled “Prospectus Summary,” “Risk Factors,” “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and “Business,” but are also contained elsewhere in this prospectus. In some cases, you can identify forward-looking statements by the words “may,” “might,” “will,” “could,” “would,” “should,” “expect,” “intend,” “plan,” “objective,” “anticipate,” “believe,” “estimate,” “predict,” “project,” “potential,” “continue” and “ongoing,” or the negative of these terms, or other comparable terminology intended to identify statements about the future, although not all forward-looking statements contain these words. These statements relate to future events or our future financial performance or condition and involve known and unknown risks, uncertainties and other factors that could cause our actual results, levels of activity, performance or achievement to differ materially from those expressed or implied by these forward-looking statements. These forward-looking statements include, but are not limited to, statements about:

- our projected financial position and estimated cash burn rate;
- our estimates regarding expenses, future revenues and capital requirements;
- our ability to continue as a going concern;
- our need to raise substantial additional capital to fund our operation;
- the success, cost and timing of our clinical trials;
- our dependence on third parties in the conduct of our clinical trials;
- our ability to obtain the necessary regulatory approvals to market and commercialize our product candidates;
- the ultimate impact of the ongoing COVID-19 pandemic, or any other health epidemic, on our business, our clinical trials, our research programs, healthcare systems or the global economy as a whole;
- the potential that results of pre-clinical and clinical trials indicate our current product candidates or any future product candidates we may seek to develop are unsafe or ineffective;
- the results of market research conducted by us or others;
- our ability to obtain and maintain intellectual property protection for our current product candidates;
- our ability to protect our intellectual property rights and the potential for us to incur substantial costs from lawsuits to enforce or protect our intellectual property rights;
- the possibility that a third party may claim we or our third-party licensors have infringed, misappropriated or otherwise violated their intellectual property rights and that we may incur substantial costs and be required to devote substantial time defending against claims against us;
- our reliance on third parties;
- the success of competing therapies and products that are or become available;
- our ability to expand our organization to accommodate potential growth and our ability to retain and attract key personnel;
- the potential for us to incur substantial costs resulting from product liability lawsuits against us and the potential for these product liability lawsuits to cause us to limit our commercialization of our product candidates;

- market acceptance of our product candidates, the size and growth of the potential markets for our current product candidates and any future product candidates we may seek to develop, and our ability to serve those markets; and
- the successful development of our commercialization capabilities, including sales and marketing capabilities.

These forward-looking statements are subject to a number of risks, uncertainties and assumptions, including those described in “Risk Factors.” Moreover, we operate in a very competitive and rapidly changing environment. New risks emerge from time to time. It is not possible for our management to predict all risks, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements we may make. In light of these risks, uncertainties and assumptions, the forward-looking events and circumstances discussed in this prospectus may not occur and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements.

You should not rely upon forward-looking statements as predictions of future events. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee that the future results, levels of activity, performance or events and circumstances reflected in the forward-looking statements will be achieved or occur. Moreover, except as required by law, neither we nor any other person assumes responsibility for the accuracy and completeness of the forward-looking statements. We undertake no obligation to update publicly any forward-looking statements for any reason after the date of this prospectus to conform these statements to actual results or to changes in our expectations.

You should read this prospectus and the documents that we reference in this prospectus and have filed with the SEC as exhibits to the registration statement of which this prospectus forms a part with the understanding that our actual future results, levels of activity, performance and events and circumstances may be materially different from what we expect.

Industry and Market Data

This prospectus contains industry, market and competitive position data from our own internal estimates and research as well as independent industry publications, general publications and research surveys and studies conducted by third parties. This data involves a number of assumptions and limitations, and while we believe that the data from these industry publications that is included in this prospectus is reliable, we have not independently verified the data from third-party sources. In addition, while we believe that the results and estimates from our internal research are reliable, such results and estimates have not been verified by any independent source. The industry in which we operate is subject to a high degree of uncertainty and risk due to a variety of factors, including those described in “Risk Factors” and elsewhere in this prospectus. These and other factors could cause results to differ materially from those expressed in the estimates made by the independent parties and by us.

USE OF PROCEEDS

We estimate that the net proceeds to us from our issuance and sale of _____ shares of common stock in this offering will be approximately \$ _____ million (or \$ _____ million if the underwriters exercise their option to purchase additional shares of common stock in full), based upon an assumed initial public offering price of \$ _____ per share, which is the mid-point of the price range set forth on the cover page of this prospectus, and after deducting underwriting discounts and commissions and estimated offering expenses payable by us.

Each \$1.00 increase or decrease in the assumed initial public offering price of \$ _____ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, after deducting underwriting discounts and commissions and estimated offering expenses payable by us, would increase or decrease, as applicable, the net proceeds to us from this offering by approximately \$ _____ million, assuming the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same. We may also increase or decrease the number of shares we are offering. Each increase or decrease of 1.0 million in the number of shares we are offering at the assumed initial public offering price of \$ _____ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, after deducting underwriting discounts and commissions and estimated offering expenses payable by us, would increase or decrease, as applicable, the net proceeds to us from this offering by approximately \$ _____ million, assuming the assumed initial public offering price remains the same.

We intend to use the net proceeds from this offering as follows:

- approximately 60% to fund our research and development activities for BWV-101, BWV-102, BWV-201, BWV-301 and BWV 302, including manufacturing and pre-IND enabling studies;
- approximately 20% to fund Phase I clinical trials and regulatory review process for vaccine candidates, with an initial focus on BWV-101, BWV-102, BWV-201, subject to the outcomes of our preclinical studies; and
- the remainder for working capital and other general corporate purposes, including the additional costs associated with being a public company.

The foregoing is set forth based on the order of priority for each purpose and represents our intentions based upon our current plans and business conditions, which could change in the future as our plans and business conditions evolve. The amounts and timing of our actual expenditures may vary significantly depending on numerous factors, including the progress of our development, the status of and results from clinical trials, our sales, marketing and manufacturing efforts, any collaborations that we may enter into with third parties for our products and any unforeseen cash needs. As a result, our management will retain broad discretion over the allocation of the net proceeds from this offering.

We believe opportunities may exist from time to time to expand our current business through the acquisition or in-license of complementary products and product candidates. While we have no current agreements or commitments for any specific acquisitions or in-licenses at this time, we may use a portion of the net proceeds for these purposes.

Pending our use of the net proceeds from this offering, we intend to invest the net proceeds in a variety of capital preservation investments, including short-term, investment-grade, interest-bearing instruments and U.S. government securities.

DIVIDEND POLICY

We have never declared or paid any cash dividends on our capital stock. We do not anticipate paying cash dividends on our common stock in the foreseeable future. We currently intend to retain all available funds and any future earnings to support our operations and finance the growth and development of our business. Any future determination related to our dividend policy will be made at the discretion of our board of directors and will depend upon, among other factors, our results of operations, financial condition, capital requirements, contractual restrictions, business prospects, the requirements of current or then-existing debt instruments and other factors our board of directors may deem relevant.

CAPITALIZATION

The following table sets forth our cash and capitalization as of June 30, 2021:

- on an actual basis;
- on a pro forma basis to reflect (i) the conversion of all outstanding series seed preferred stock, pursuant to an optional conversion, effective upon consummation of this offering, which has been approved by requisite holders of our series seed preferred stock and (ii) the filing of our Amended and Restated Certificate of Incorporation upon the closing of this offering; and
- on a pro forma as adjusted basis to give further effect to our issuance and sale of _____ shares of common stock in this offering at an assumed initial public offering price of \$ _____ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, after deducting the underwriting discounts and commissions and estimated offering expenses payable by us.

The pro forma and pro forma as adjusted information below is illustrative only and our capitalization following the completion of this offering is subject to adjustment based on the initial public offering price of our common stock and other terms of this offering determined at pricing. You should read the following table in conjunction with “Use of Proceeds,” “Selected Financial Data,” “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” “Description of Capital Stock” and other financial information contained in this prospectus, including the financial statements and related notes appearing elsewhere in this prospectus.

	As of June 30, 2021		
	Actual (unaudited)	Pro Forma (unaudited)	Pro Forma As Adjusted ⁽¹⁾ (unaudited)
Cash	\$ 3,669,468		
Total liabilities	—		
Stockholders’ equity:			
Series Seed Preferred Stock: 1,150,000 shares designated; 1,146,138 shares issued and outstanding at June 30, 2021;	11		
Common stock, \$0.00001 par value, 2,300,000 shares authorized; 800,000 shares outstanding at June 30, 2021	8		
Additional paid-in-capital	7,349,732		
Accumulated deficit	(3,657,391)		
Total stockholders’ equity	3,692,360		
Total liabilities and stockholders’ equity	3,692,360		

(1) A \$1.00 increase or decrease in the assumed initial public offering price of \$ _____ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, would increase or decrease, as applicable, each of cash and cash equivalents, additional paid-in capital, total shareholders’ (deficit) equity and total capitalization by approximately \$ _____ million, assuming the number of shares offered by us, as stated on the cover page of this prospectus, remains unchanged and after deducting underwriting discounts and commissions and estimated offering expenses payable by us. Similarly, each increase or decrease of 1.0 million in the number of shares we are offering would increase or decrease, as applicable, each of cash and cash equivalents, additional paid-in capital, total shareholders’ (deficit) equity and total capitalization by \$ _____ million, assuming the assumed initial public offering price of \$ _____ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, remains the same and after deducting underwriting discounts and commissions and estimated offering expenses payable by us.

The number of shares of our common stock to be outstanding after this offering is based on 2,172,371 shares of common stock outstanding as of September 30, 2021 (after giving effect to the conversion of all outstanding shares of preferred stock into an aggregate of 1,372,371 shares of common stock), and excludes:

- 195,160 shares of common stock issuable upon the exercise of outstanding stock options under our 2019 Equity Incentive Plan, or the 2019 Plan, as of September 30, 2021;
- 154,840 shares of our common stock reserved for future issuance under the 2019 Plan, which, upon adoption of our 2021 Equity Incentive Plan, or the 2021 Plan, will be issuable under the 2021 Plan; and
- _____ shares of our common stock issuable upon the exercise of the warrant issued to the representative of the underwriters at the closing of this offering.

DILUTION

If you invest in our common stock in this offering, your ownership interest will be immediately diluted to the extent of the difference between the initial public offering price per share of our common stock and the pro forma as adjusted net tangible book value per share of our common stock immediately after this offering. Net tangible book value per share of common stock is determined by dividing our total tangible assets less total liabilities by the number of outstanding shares of our common stock.

Our historical net tangible book value (deficit) as of June 30, 2021 was approximately \$3.7 million or \$4.60 per share of common stock. Our pro forma net tangible book value (deficit) as of _____, 2021 was _____ or _____ per share of common stock.

Pro forma as adjusted net tangible book value (deficit) is our pro forma net tangible book value, after giving further effect to (i) the sale of _____ shares of our common stock in this offering at an assumed initial public offering price of \$ _____ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, after deducting underwriting discounts and commissions and estimated offering expenses payable by us, and (ii) the application of the net proceeds from this offering as described in the section of this prospectus entitled “Use of Proceeds.” This amount represents an immediate increase in pro forma net tangible book value (deficit) of \$ _____ per share to our existing shareholders, and an immediate dilution of \$ _____ per share to new investors participating in this offering.

The following table illustrates this dilution on a per share basis to new investors:

Assumed initial public offering price per share	\$ _____
Historical net tangible book value (deficit) per share as of [•], 2021	\$ _____)
Pro forma net tangible book value (deficit) per share as of [•], 2021, before giving effect to this offering	_____
Increase in pro forma net tangible book value (deficit) per share attributable to new investors participating in this offering	_____
Pro forma as adjusted net tangible book value (deficit) per share after this offering	_____
Dilution in pro forma net tangible book value (deficit) per share to new investors participating in this offering	\$ _____

A \$1.00 increase or decrease in the assumed initial public offering price of \$ _____ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, would increase or decrease, as applicable, the pro forma as adjusted net tangible book value (deficit) per share after this offering by approximately \$ _____ per share and decrease or increase, as appropriate, the dilution in pro forma net tangible book value (deficit) per share to investors participating in this offering by approximately \$ _____ per share, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting underwriting discounts and commissions and estimated offering expenses payable by us.

Similarly, a 1.0 million share increase or decrease in the number of shares offered by us, as set forth on the cover page of this prospectus, would increase or decrease, as appropriate, the pro forma as adjusted net tangible book value (deficit) per share after this offering by approximately \$ _____ and decrease or increase, as appropriate, the dilution in pro forma net tangible book value (deficit) per share to investors participating in this offering by approximately \$ _____, assuming the assumed initial public offering price of \$ _____ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, remains the same, after deducting underwriting discounts and commissions and estimated offering expenses payable by us.

The pro forma information discussed above is illustrative only and will change based on the actual initial public offering price, number of shares and other terms of this offering determined at pricing.

If the underwriters exercise in full their option to purchase _____ additional shares of our common stock in this offering, the pro forma as adjusted net tangible book value will increase to \$ _____ per share, representing an immediate increase in pro forma net tangible book value to existing shareholders of \$ _____ per share and an immediate dilution of \$ _____ per share to new investors participating in this offering.

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The following table sets forth, as of September 30, 2021, on the pro forma as adjusted basis described above, the differences between our existing shareholders and the purchasers of shares of common stock in this offering with respect to the number of shares of common stock purchased from us, the total consideration paid to us and the weighted average price paid per share paid to us, based on an assumed initial public offering price of _____ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, before deducting underwriting discounts and commissions and estimated offering expenses payable by us:

	Shares Purchased		Total Consideration		Weighted Average Price per Share
	Number	Percent	Amount	Percent	
Existing shareholders		%	\$	%	\$
New investors					
Total		100%	\$	100%	

If the underwriters exercise in full their option to purchase additional shares of our common stock in this offering, the number of shares held by existing shareholders will be reduced to _____ % of the total number of shares of common stock that will be outstanding upon completion of this offering, and the number of shares of common stock held by new investors participating in this offering will be further increased to _____ % of the total number of shares of common stock that will be outstanding upon completion of the offering.

We may choose to raise additional capital through the sale of equity or equity-linked securities due to market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans. To the extent that any options are issued under our equity incentive plan or we issue additional shares of common stock or equity-linked securities in the future, there will be further dilution to investors purchasing in this offering.

The number of shares of our common stock to be outstanding after this offering is based on 2,172,371 shares of common stock outstanding as of September 30, 2021 (after giving effect to the conversion of all outstanding shares of convertible preferred stock and accrued dividends into an aggregate of up to 1,372,371 shares of common stock), and excludes:

- 195,160 shares of common stock issuable upon the exercise of outstanding stock options under our 2019 Equity Incentive Plan, or the 2019 Plan, as of September 30, 2021;
- 154,840 shares of our common stock reserved for future issuance under the 2019 Plan, which, upon adoption of our 2021 Equity Incentive Plan, or the 2021 Plan, will be issuable under the 2021 Plan; and
- _____ shares of our common stock issuable upon the exercise of the warrant issued to the representative of the underwriters at the closing of this offering.

MANAGEMENT’S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

You should read the following discussion of our financial condition and results of operations in conjunction with “Selected Financial Data” and our financial statements and related notes included elsewhere in this prospectus. This discussion and analysis and other parts of this prospectus contain forward-looking statements based upon current beliefs, plans and expectations that involve risks, uncertainties and assumptions. Our actual results and the timing of selected events could differ materially from those anticipated in these forward-looking statements as a result of several factors, including those set forth under “Risk Factors” and elsewhere in this prospectus. You should carefully read the “Risk Factors” section of this prospectus to gain an understanding of the important factors that could cause actual results to differ materially from our forward-looking statements. Please also see the section entitled “Cautionary Note Regarding Forward-Looking Statements and Industry and Market Data” in this prospectus.

Overview

We are a biotechnology company focused on the research and development of transformational vaccines to prevent infectious diseases worldwide. Our versatile vaccine platform has unique molecular properties that enables delivery of various antigens, which can be utilized to develop singular or multi-targeted vaccines. Our lead influenza (flu) vaccine program uses proprietary technology to identify specific epitopes, or proteins of antigens, with cross-reactive properties, that enable the potential development of a universal flu vaccine. We are focused on developing novel vaccines that induce durable and long-term immunity. We believe that our pipeline and vaccine platform are synergistic for developing next generation preventive vaccines to improve both health outcomes and quality of life globally.

Infectious Disease Program	Candidate	Preclinical	Phase 1	Phase 2	Phase 3	Licensee	Status
Universal Flu	BWV-101						1H22: pre-clinical POC
H1 pre-pandemic	BWV-102						1H22: start IND enabling studies
S. pneumo induced AOM (intranasal)	BWV-201						1H22: start IND enabling studies
Norovirus / Rotavirus	BWV-301						1H22: pre-clinical POC
Norovirus / Malaria	BWV-302						2H22: start IND enabling studies

Since our inception in October 2018, we have devoted substantially all of our resources to performing research and development, undertaking preclinical studies and enabling manufacturing activities in support of our product development efforts, hiring personnel, acquiring and developing our technology and vaccine candidates, organizing and staffing our company, performing business planning, establishing our intellectual property portfolio and raising capital to support and expand such activities. We do not have any products approved for sale and have not generated any revenue from product sales. To date, we have financed our operations primarily with proceeds from our sale of preferred securities to seed investors. We will continue to require additional capital to develop our vaccine candidates and fund operations for the foreseeable future. Accordingly, until such time as we can generate significant revenue from sales of our vaccine candidates, if ever, we expect to finance our cash needs through public or private equity or debt financings, third-party (including government) funding and marketing and distribution arrangements, as well as other collaborations, strategic alliances and licensing arrangements, or any combination of these approaches.

We have incurred net losses since inception and expect to continue to incur net losses in the foreseeable future. Our net losses may fluctuate significantly from quarter-to-quarter and year-to-year, depending in large part on the timing of our preclinical studies, clinical trials and manufacturing activities, and our expenditures on other research

and development activities. As of June 30, 2021, the Company had working capital of approximately \$3.6 million and an accumulated deficit of approximately \$3.7 million. We will need to raise additional capital to fund our planned operations within one year from the issuance date of our financial statements.

While we believe that we can raise additional capital to fund our planned operations, until we generate revenue sufficient to support self-sustaining cash flows, if ever, we will need to raise additional capital to fund our continued operations, including our product development and commercialization activities related to our current and future products. There can be no assurance that additional capital will be available to us on acceptable terms, or at all, or that we will ever generate revenue sufficient to provide for self-sustaining cash flows. These circumstances raise substantial doubt about our ability to continue as a going concern. The accompanying financial statements do not include any adjustment that might be necessary if the Company is unable to continue as a going concern.

We do not expect to generate any revenue from commercial product sales unless and until we successfully complete development and obtain regulatory approval for one or more of our vaccine candidates, which we expect will take a number of years. We expect our expenses will increase substantially in connection with our ongoing activities, as we:

- advance vaccine candidates through preclinical studies and clinical trials;
- require the manufacture of supplies for our preclinical studies and clinical trials;
- pursue regulatory approval of vaccine candidates;
- hire additional personnel;
- operate as a public company.
- acquire, discover, validate and develop additional vaccine candidates; and
- obtain, maintain, expand and protect our intellectual property portfolio.

We rely and will continue to rely on third parties in the conduct of our preclinical studies and clinical trials and for manufacturing and supply of our vaccine candidates. We have no internal manufacturing capabilities, and we will continue to rely on third parties, of which the main suppliers are single-source suppliers, for our preclinical and clinical trial materials. Given our stage of development, we do not yet have a marketing or sales organization or commercial infrastructure. Accordingly, if we obtain regulatory approval for any of our vaccine candidates, we also expect to incur significant commercialization expenses related to product sales, marketing, manufacturing and distribution.

Because of the numerous risks and uncertainties associated with vaccine development, we are unable to predict the timing or amount of increased expenses or when or if we will be able to achieve or maintain profitability. Even if we are able to generate revenue from the sale of our vaccines, we may not become profitable. If we fail to become profitable or are unable to sustain profitability on a continuing basis, then we may be unable to continue our operations at planned levels and may be forced to reduce our operations.

Certain Significant Relationships

We have entered into grant, license and collaboration arrangements with various third parties as summarized below. For further details regarding these and other agreements, see the section titled “Business — Intellectual Property” and Note 5 to each of our audited financial statements and unaudited financial statements included elsewhere in this prospectus.

Ology Agreement

In July 2019, we entered into a development and manufacturing master services agreement with Ology Bioservices (which was later acquired by National Resilience, Inc.) (“Ology”), which we refer to as the Ology Agreement, pursuant to which Ology is obligated to perform manufacturing process development and clinical manufacture and supply of components.

Under the Ology Agreement, we will pay Ology agreed upon fees for Ology’s performance of manufacturing services, and we will reimburse Ology for its out-of-pocket costs associated with purchasing raw materials, plus a customary handling fee.

For additional details regarding our relationship with Ology, see the section entitled “Business — Manufacturing and Supply” and Note 5 to our financial statements included elsewhere in this prospectus.

Cincinnati Children’s Hospital Medical Center Agreement

On June 1, 2021, we entered into an exclusive, worldwide license agreement with Children’s Hospital Medical Center, d/b/a Cincinnati Children’s Hospital Medical Center, or CHMC, which we refer to as the CHMC Agreement, pursuant to which we obtained the right to develop and commercialize certain CHMC patents and related technology directed at a virus-like particle (VLP) vaccine platform that utilizes nanoparticle delivery technology, which may have potential broad application to develop vaccines for multiple infectious diseases.

Under the CHMC Agreement, we agreed to pay CHMC certain license fees, deferred license fees, development milestone fees, and running royalties beginning on the first net sale (among others). For additional details regarding our relationship with CHMC, see the section entitled “Business — Intellectual Property — Exclusive License Agreement with Children’s Hospital Medical Center, d/b/a Cincinnati Children’s Hospital Medical Center” included elsewhere in this prospectus. The CHMC license includes:

U.S. Patent Application No.	U.S. Patent No.	Granted Claim Type	U.S. Expiration	Foreign Counterparts
12/797,396	8,486,421	Compositions of the vaccine/vaccine platform	1/13/2031	CN107043408B EP2440582B1 JP5894528B2
13/924,906	9,096,644	Method of treatment	9/20/2030	CN107043408B EP2440582B1 JP5894528B2
13/803,057	9,562,077	Compositions of the vaccine platform	4/10/2034	none
16/489,095	pending	pending	[3/15/2038]*	Pending applications in Canada, China, EU and Japan
63/149,742 (filed 2/16/2021)	pending	pending	[February 2042]#	TBD
63/162,369 (filed 3/17/2021)	pending	pending	[March 2042]#	TBD

* Projected expiration if patent issues: 20 years from earliest non-provisional application filing date.

Non-provisional application not yet filed. Expiration projected 21 years from provisional application filing date. Dependent on timely conversion to non-provisional application and issuance of patent.

Oxford University Innovation Limited Agreement

On July 16, 2019, we entered into an exclusive, worldwide license agreement with Oxford University Innovation Limited, which we refer to as the OUI Agreement, pursuant to which we obtained the right to develop and commercialize certain licensed technology entitled “Immunogenic Composition.”

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Under the OUI Agreement, we agreed to fund three years’ worth of salaries for Dr. Craig Thompson in the University’ Department of Zoology through a sponsored research agreement with Oxford University, as well as royalties on all net sales of licensed products, along with certain development and milestone payments (among others). For additional details regarding our relationship with OUI, see the section entitled “Business — Intellectual Property — License Agreement Between Oxford University Innovation Limited and Blue Water Vaccines Inc.” included elsewhere in this prospectus. The OUI license includes:

U.S. Patent Application No.	U.S. Patent No.	Granted Claim Type	U.S. Expiration	Foreign Counterparts
16/326,749	11,123,422	Compositions and method of treatment	8/25/2037	Pending applications in Australia, Canada, China, EU and Japan
17/458,712	pending	pending	[8/25/2037]*	

* Projected expiration if patent issues: 20 years from earliest non-provisional application filing date.

St. Jude Children’s Research Hospital, Inc. Agreement

On January 27, 2020, we entered into an exclusive, worldwide license agreement with St. Jude Children’s Research Hospital, Inc., which we refer to as the St. Jude Agreement, pursuant to which we acquired the right to develop certain licensed products and produce vaccines for use in humans.

Under the St. Jude Agreement, we agreed to pay an initial license fee, an annual maintenance fee, milestone payments, patent reimbursement, and running royalties based on the net sales of licensed products. For additional details regarding our relationship with St. Jude, see the section entitled “Business — Intellectual Property — Exclusive License Agreement between St. Jude Children’s Research Hospital, Inc. & Blue Water Vaccines” included elsewhere in this prospectus. The St. Jude license includes:

U.S. Patent Application No.	U.S. Patent No.	Granted Claim Type	U.S. Expiration	Foreign Counterparts
14/345,988	9,265,819	Compositions and method of treatment	9/19/2032	none
pending [#]	pending	pending	[3/12/2040]*	Pending Applications in: Australia, Brazil, Canada, China, Europe, Hong Kong, Japan and Korea

* Projected expiration if patent issues: 20 years from earliest non-provisional application filing date.

U.S. National stage entry of WO 2020/183420 (PCT/IB2020/052250).

COVID-19 Impacts

We are continuing to closely monitor the impact of the global COVID-19 pandemic on our business and are taking proactive efforts designed to protect the health and safety of our employees and to maintain business continuity. We believe that the measures we are implementing are appropriate, and we will continue to monitor and seek to comply with guidance from governmental authorities and adjust our activities as appropriate. Based on guidance issued by federal, state and local authorities, we transitioned to a remote work model for a vast majority of our employees in March 2020. The COVID-19 pandemic has resulted in an impact to our development timelines, as the pandemic continues, we could continue to see an impact on our ability to advance our programs, obtain supplies from our contract manufacturer or interact with regulators, ethics committees or other important agencies due to limitations in regulatory authority, employee resources or otherwise. In any event, if the COVID-19 pandemic continues and persists for an extended period of time, we could experience significant disruptions to our development timelines, which would adversely affect our business, financial condition, results of operations and growth prospects.

In addition, while the potential economic impact brought by, and the duration of, the COVID-19 pandemic may be difficult to assess or predict, the pandemic could result in significant and prolonged disruption of global financial markets, reducing our ability to access capital, which could in the future negatively affect our liquidity. In addition, a recession or market correction resulting from the spread of COVID-19 could materially affect our business and the potential value of our common stock.

The extent of the impact of the COVID-19 pandemic on our development and regulatory efforts, our ability to raise sufficient additional capital on acceptable terms, if at all, and the future value of and market for our common stock will depend on future developments that are highly uncertain and cannot be predicted with confidence at this time, such as the ultimate duration of the pandemic, travel restrictions, quarantines, social distancing and business closure requirements in the U.S. and in other countries, and the effectiveness of actions taken globally to contain and treat COVID-19. For additional information about risks and uncertainties related to the COVID-19 pandemic that may impact our business, financial condition and results of operations, see the section titled “Risk Factors.”

Components of Results of Operations

Research and Development Expenses

Substantially all of our research and development expenses consist of expenses incurred in connection with the development of our product candidates. These expenses include fees paid to third parties to conduct certain research and development activities on our behalf, consulting costs, costs for laboratory supplies, product acquisition and license costs, certain payroll and personnel-related expenses, including salaries and bonuses, employee benefit costs and stock-based compensation expenses for our research and product development employees and allocated overheads, including information technology costs and utilities and expenses for the issuance of shares pursuant to the anti-dilution clause in the purchase of in process research and development technology. We expense both internal and external research and development expenses as they are incurred.

We do not allocate our costs by product candidate, as a significant amount of research and development expenses include internal costs, such as payroll and other personnel expenses, laboratory supplies and allocated overhead, and external costs, such as fees paid to third parties to conduct research and development activities on our behalf, are not tracked by product candidate.

We expect our research and development expenses to increase substantially for at least the next few years, as we seek to initiate additional clinical trials for our product candidates, complete our clinical programs, pursue regulatory approval of our product candidates and prepare for the possible commercialization of such product candidates. Predicting the timing or cost to complete our clinical programs or validation of our commercial manufacturing and supply processes is difficult and delays may occur because of many factors, including factors outside of our control. For example, if the FDA or other regulatory authorities were to require us to conduct clinical trials beyond those that we currently anticipate, we could be required to expend significant additional financial resources and time on the completion of clinical development. Furthermore, we are unable to predict when or if our product candidates will receive regulatory approval with any certainty.

General and Administrative Expenses

General and administrative expenses consist principally of payroll and personnel expenses, including salaries and bonuses, benefits and stock-based compensation expenses, professional fees for legal, consulting, accounting and tax services, including information technology costs, and other general operating expenses not otherwise classified as research and development expenses.

We anticipate that our general and administrative expenses will increase as a result of increased personnel costs, expanded infrastructure and higher consulting, legal and accounting services costs associated with complying with the applicable stock exchange and the SEC requirements, investor relations costs and director and officer insurance premiums associated with being a public company.

Other Income

Other income consists primarily of interest income.

Results of Operations**Comparison of Six Months ended June, 2021 and 2020**

The following table summarizes our statements of operations for the six months ended June 30, 2021 and 2020:

	Six months ended June 30, 2021	Six months ended June 30, 2020	\$ Change	% Change
	(Unaudited)	(Unaudited)		
Operating costs and expenses				
General and administrative	\$ 500,276	\$ 559,775	(59,499)	(10.6)%
Research and development	617,779	320,336	297,443	92.9%
Total operating expenses	1,118,055	880,111	237,944	27.0%
Loss from operations	(1,118,055)	(880,111)	(237,944)	27.0%
Other income				
Interest income	—	19,431	(19,431)	(100.0)%
Total other income	—	19,431	(19,431)	(100.0)%
Net Loss	\$ (1,118,055)	\$ (860,680)	(257,375)	29.9%

Operating Expenses**Research and Development Expenses**

During the six months ended June 30, 2021, research and development expenses increased by approximately \$0.3 million compared to the comparable prior year period. The increase was primarily attributable to an increase in licensing fees.

General and Administrative Expenses

During the six months ended June 30, 2021, general and administrative expenses decreased by approximately \$60,000 compared to the comparable prior year period. The decrease was mainly due to decrease in stock-based compensation expenses of approximately \$159,000, offset partially by an increase of professional and outside service fees of approximately \$70,000.

Other Income

During the six months ended June 30, 2021, other income decreased by approximately \$19,000 compared to the corresponding period in 2020. The decrease was primarily due to decrease in interest income after transitioning our bank account from a money market account to a business checking account.

Comparison of the Years Ended December 31, 2020 and 2019

The following table summarizes our statements of operations and comprehensive loss for the periods indicated:

	Year Ended December 31, 2020	Year Ended December 31, 2019	\$ Change	% Change
Operating costs and expenses				
General and administrative	\$ 1,097,161	\$ 820,058	277,103	33.8%
Research and development	524,908	60,174	464,734	772.3%
Total operating expenses	1,622,069	880,232	741,837	84.3%
Loss from operations	(1,622,069)	(880,232)	(741,837)	84.3%
Other income				
Interest income	22,603	58,317	(35,714)	(61.2)%
Total other income	22,603	58,317	(35,714)	(61.2)%
Net loss	\$ (1,599,466)	\$ (821,915)	(777,551)	94.6%

Research and Development Expenses

For the year ended December 31, 2020, research and development expenses increased by approximately \$0.5 million compared to 2019. The increase was primarily attributable to an increase in research contract expenses mainly related to our lead vaccine candidates, BWV-101 and BWV-102, of approximately \$0.2 million, stock-based compensation expenses of approximately \$0.2 million and licensing fees of approximately \$0.1 million.

General and Administrative Expenses

For the year ended December 31, 2020, general and administrative expenses increased by \$0.3 million compared to 2019. The increase was primarily attributable to an increase in personnel-related costs of approximately \$0.2 million, and stock-based compensation expenses of \$0.1 million.

Other Income

For the year ended December 31, 2020, other income decreased by \$36,000 compared to 2019. The decrease was primarily due to decrease in interest income after transitioning our bank account from a money market account to a business checking account.

Going Concern, Liquidity and Capital Resources**Going Concern**

There is substantial doubt about our ability to continue as a going concern for one year after the date that our June 30, 2021 financial statements are available to be issued, which is not alleviated by our plans. The financial statements do not reflect any adjustments relating to the recoverability and reclassification of assets and liabilities that might be necessary from the outcome of this uncertainty.

Since inception, we have devoted substantially all of our efforts to research and development, undertaking preclinical studies and enabling manufacturing activities in support of our product development efforts, hiring personnel, acquiring and developing our technology and vaccine candidates, organizing and staffing our company, performing business planning, establishing our intellectual property portfolio and raising capital to support and expand such activities. We do not have any products approved for sale and have not generated any revenue from product sales. We have incurred net losses in each year since inception and expect to continue to incur net losses in the foreseeable future. Our net loss was \$1.6 million for the year ended December 31, 2020. As of December 31, 2020, we had an accumulated deficit of \$2.5 million. We also generated negative operating cash flows of \$1.7 million for the year ended December 31, 2020.

For the six months ended June 30, 2021, our net loss was \$1.1 million and we used \$0.6 million of cash in operations. As of June 30, 2021, we had an accumulated deficit of \$3.7 million. Our cash is sufficient to continue operations, satisfy its obligations and fund the future expenditures that will be required to conduct the clinical and regulatory work to develop its product candidates until the second quarter of 2022.

Liquidity and Capital Resources

We have incurred losses since inception and have incurred negative cash flows from operations from inception through June 30, 2021. We have funded our operations to date primarily from the sale of preferred securities to seed investors totalling approximately \$6.9 million in net proceeds. As of June 30, 2021, we had \$3.7 million of cash and an accumulated deficit of \$3.7 million.

We will require significant amounts of additional capital to continue to fund our operations and commence and complete our research and development activities. We currently have limited resources to continue to fund our operations and if we are not able to obtain additional cash resources, we will not be able to continue operations. We will continue seeking additional financing sources to meet our working capital requirements, make continued investment in research and development and make capital expenditures needed for us to maintain and expand our business. We may not be able to obtain additional financing on terms favorable to us, if at all. If we are unable to obtain adequate financing or financing on terms satisfactory to us when we require it, or if we expend capital on projects that are not successful, our ability to continue to support our business growth and to respond to business challenges could be significantly limited, or we may even have to cease our operations. If we raise additional funds through further issuances of equity or convertible debt securities, our existing shareholders could suffer significant dilution, and any new equity securities we issue could have rights, preferences and privileges superior to those of holders of our common stock, including shares of common stock sold in this offering.

Future Funding Requirements

Our primary uses of cash are to fund our operations, which consist primarily of research and development expenditures related to our programs and general and administrative expenditures. We anticipate that we will continue to incur significant expenses for the foreseeable future as we continue to advance our vaccine candidates, expand our corporate infrastructure, including the costs associated with being a public company and further our research and development initiatives for our vaccine candidates. We are subject to all of the risks typically related to the development of new drug candidates, and we may encounter unforeseen expenses, difficulties, complications, delays and other unknown factors that may adversely affect our business. We anticipate that we will need substantial additional funding in connection with our continuing operations.

We believe that our existing cash as of the date of this prospectus, together with the net proceeds from this offering, will fund our current operating plans through at least the next 12 months from the date of this offering. However, we will need to raise additional capital prior to commencing pivotal trials for any of our vaccine candidates. Until we can generate a sufficient amount of revenue from the commercialization of our vaccine candidates or from collaboration agreements with third parties, if ever, we expect to finance our future cash needs through public or private equity or debt financings, third-party (including government) funding and marketing and distribution arrangements, as well as other collaborations, strategic alliances and licensing arrangements, or any combination of these approaches. The future sale of equity or convertible debt securities may result in dilution to our stockholders and, in the case of preferred equity securities or convertible debt, those securities could provide for rights, preferences or privileges senior to those of our common stock. Debt financings may subject us to covenant limitations or restrictions on our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends. Our ability to raise additional funds may be adversely impacted by deteriorating global economic conditions and the recent disruptions to and volatility in the credit and financial markets in the United States and worldwide resulting from the ongoing COVID-19 pandemic. There can be no assurance that we will be successful in acquiring additional funding at levels sufficient to fund our operations or on terms favorable or acceptable to us. If we are unable to obtain adequate financing when needed or on terms favorable or acceptable to us, we may be forced to delay, reduce the scope of or eliminate one or more of our research and development programs.

Our future capital requirements will depend on many factors, including:

- the timing, scope, progress, results and costs of research and development, testing, screening, manufacturing, preclinical and non-clinical studies and clinical trials, including any impacts related to the COVID-19 pandemic;
- the outcome, timing and cost of seeking and obtaining regulatory approvals from the FDA and comparable foreign regulatory authorities, including the potential for such authorities to require that we perform field efficacy studies for our vaccine candidates, require more studies than those that we currently expect or change their requirements regarding the data required to support a marketing application;
- the cost of building a sales force in anticipation of any product commercialization;
- the costs of future commercialization activities, including product manufacturing, marketing, sales, royalties and distribution, for any of our vaccine candidates for which we receive marketing approval;
- our ability to maintain existing, and establish new, strategic collaborations, licensing or other arrangements and the financial terms of any such agreements, including the timing and amount of any future milestone, royalty or other payments due under any such agreement;
- any product liability or other lawsuits related to our products;
- the expenses needed to attract, hire and retain skilled personnel;
- the revenue, if any, received from commercial sales, or sales to foreign governments, of our vaccine candidates for which we may receive marketing approval;
- the costs to establish, maintain, expand, enforce and defend the scope of our intellectual property portfolio, including the amount and timing of any payments we may be required to make, or that we may receive, in connection with licensing, preparing, filing, prosecuting, defending and enforcing our patents or other intellectual property rights;
- expenses needed to attract, hire and retain skilled personnel;
- the costs of operating as a public company; and
- the impact of the COVID-19 pandemic, which may exacerbate the magnitude of the factors discussed above.

A change in the outcome of any of these or other variables could significantly change the costs and timing associated with the development of our vaccine candidates. Furthermore, our operating plans may change in the future, and we may need additional funds to meet operational needs and capital requirements associated with such change.

Cash Flows

The following table summarizes our cash flows for the periods indicated:

	Six months ended June 30, 2021	Six months ended June 30, 2020	Year Ended December 31, 2020	Year Ended December 31, 2019
	(Unaudited)	(Unaudited)		
Net cash used in operating activities	(639,353)	(1,252,208)	(1,730,138)	(825,126)
Net cash used in investing activities	—	(6,027)	(11,792)	(4,500)
Net cash provided by financing activities	—	—	—	6,880,377
Net (decrease) increase in cash	(639,353)	(1,258,235)	(1,741,930)	6,050,751

Cash Flows from Operating Activities

Net cash used in operating activities for the six months ended June 30, 2021 was \$0.6 million, which primarily resulted from a net loss of \$1.1 million, and partially offset by a net change in our operating assets and liabilities of \$0.4 million and stock-based compensation of \$77,000.

Net cash used in operating activities for the six months ended June 30, 2020 was \$1.3 million, which primarily resulted from a net loss of \$0.9 million and a net change in our operating assets and liabilities of \$0.6 million, partially offset by stock-based compensation of \$0.2 million.

Net cash used in operating activities for the year ended December 31, 2020 was \$1.7 million, which primarily resulted from a net loss of \$1.6 million and a net change in our operating assets and liabilities of \$0.5 million, partially offset by stock-based compensation of \$0.3 million.

Net cash used in operating activities for the year ended December 31, 2019 was \$0.8 million, which primarily resulted from a net loss of \$0.8 million.

Cash Flows from Investing Activities

Net cash used in investing activities for the six months ended June 30, 2021 was \$0.

Net cash used in investing activities for the six months ended June 30, 2020 was \$6,000, which resulted from purchase of property and equipment.

Net cash used in investing activities for the year ended December 31, 2020 was \$12,000, which resulted from purchase of property and equipment.

Net cash used in investing activities for the year ended December 31, 2019 was \$5,000, which resulted from purchase of property and equipment.

Cash Flows from Financing Activities

Net cash used in financing activities for the six months ended June 30, 2021 and 2020, and for the year ended December 31, 2020 was \$0.

Cash provided by financing activities for the year ended December 31, 2019 was \$6.9 million, which primarily consisted of net proceeds from the issuance of our Series Seed preferred stock of \$6.9 million, partially offset by repayment of related party loan of \$55,000.

Legal Contingencies

From time to time, we may become involved in legal proceedings arising from the ordinary course of business. We record a liability for such matters when it is probable that future losses will be incurred and that such losses can be reasonably estimated.

Off-Balance Sheet Arrangements

During the periods presented we did not have, nor do we currently have, any off-balance sheet arrangements as defined in the rules and regulations of the SEC.

Recent Accounting Pronouncements Not Yet Adopted

See Note 3 to our financial statements included elsewhere in this prospectus for more information.

Critical Accounting Policies and Estimates

Our financial statements have been prepared in accordance with U.S. generally accepted accounting principles ("U.S. GAAP"). The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, and expenses and the disclosure of contingent assets and liabilities in our financial statements. On an ongoing basis, we evaluate our estimates and judgments, including those related

to accrued research and development expenses fair value of common stock and stock-based compensation. We base our estimates on historical experience, known trends and events and various other factors that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

While our significant accounting policies are described in more detail in Note 3 to our financial statements included elsewhere in this prospectus, we believe the following accounting policies and estimates to be most critical to the judgments and estimates used in the preparation of our financial statements.

Accrued Research and Development Expenses

We have entered into various agreements with contract manufacturing organizations, or CMOs, and may enter into contracts with clinical research organizations, or CROs, in the future. As part of the process of preparing our financial statements, we are required to estimate our accrued research and development expenses as of each balance sheet date. This process involves reviewing open contracts and purchase orders, communicating with our personnel and third parties to identify services that have been performed on our behalf and estimating the level of service performed and the associated cost incurred for the service when we have not yet been invoiced or otherwise notified of the actual cost. We make estimates of our accrued research and development expenses as of each balance sheet date based on facts and circumstances known to us at that time. We periodically confirm the accuracy of our estimates with the service providers and make adjustments, if necessary. The significant estimates in our accrued research and development expenses include the costs incurred for services performed by our vendors in connection with research and development activities for which we have not yet been invoiced.

We accrue for costs related to research and development activities based on our estimates of the services received and efforts expended pursuant to quotes and contracts with vendors, including CMOs, that conduct research and development on our behalf. The financial terms of these agreements are subject to negotiation, vary from contract to contract and may result in uneven payment flows. There may be instances in which payments made to our vendors will exceed the level of services provided and result in a prepayment of the research and development expense. Advance payments for goods and services that will be used in future research and development activities are expensed when the activity has been performed or when the goods have been received. We make significant judgments and estimates in determining accrued research and development liabilities as of each reporting period based on the estimated time period over which services will be performed and the level of effort to be expended. If the actual timing of the performance of services or the level of effort varies from our estimate, we adjust the accrual or prepaid expense accordingly.

Although we do not expect our estimates to be materially different from amounts actually incurred, if our estimates of the status and timing of services performed differ from the actual status and timing of services performed, it could result in us reporting amounts that are too high or too low in any particular period. To date, there have been no material differences between our estimates of such expenses and the amounts actually incurred.

Stock-Based Compensation

The Company expensed stock-based compensation to employees and non-employees over the requisite service period based on the estimated grant-date fair value of the awards. Stock-based awards to employees with graded-vesting schedules are recognized, using the accelerated attribution method, on a straight-line basis over the requisite service period for each separately vesting portion of the award. Changes in the estimated fair value of awards are recognized as compensation expense in the period of change.

The Company estimates the fair value of stock option grants using the Black-Scholes option pricing model and the assumptions used in calculating the fair value of stock-based awards represent management's best estimates and involve inherent uncertainties and the application of management's judgment.

Expected Term — The expected term of options represents the period that the Company's stock-based awards are expected to be outstanding based on the simplified method, which is the half-life from vesting to the end of its contractual term.

Expected Volatility — The Company computes stock price volatility over expected terms based on comparable companies historical common stock trading prices.

Common Stock Fair Value — The fair value of the common stock underlying the Company’s stock options was estimated at each grant date and was determined with the assistance of an independent third-party valuation expert. The assumptions underlying these valuations represented management’s best estimates, which involved inherent uncertainties and the application of significant levels of management judgment.

Risk-Free Interest Rate — The Company bases the risk-free interest rate on the implied yield available on U.S. Treasury securities with a remaining term commensurate with the estimated expected term.

Expected Dividend — The Company has never declared or paid any cash dividends on its common shares and does not plan to pay cash dividends in the foreseeable future, and, therefore, uses an expected dividend yield of zero in its valuation models.

The Company recognizes forfeitures of equity awards as they occur.

Fair value of common stock

In order to determine the fair value of shares of common stock of the Company when issuing stock options and computing their estimated stock-based compensation expense, its board of directors considered with input from third party valuations, among other things, contemporaneous valuations of the Company’s common stock. Given the absence of a public trading market of the Company’s capital stock to date, its board of directors has exercised reasonable judgment and considered a number of objective and subjective factors to determine the best estimate of the fair value of our common and preferred stock, including:

- the prices, rights, preferences and privileges of our preferred stock relative to our common stock;
- our business, financial condition and results of operations, including related industry trends affecting our operations;
- the likelihood of achieving a liquidity event, such as an initial public offering, or IPO, or sale of our company, given prevailing market conditions;
- the lack of marketability of our common stock;
- the market performance of comparable publicly traded companies;
- U.S. and global economic and capital market conditions and outlook; and
- Common stock valuation methodology.

In estimating the fair market value of common stock of the Company, its board of directors first determined the equity value of its business using accepted valuation methods.

The Company engaged a third party valuation specialist to conduct a valuation, which used its recent preferred stock financing as a starting point and determined the equity value of the company based on the Backsolve method using an Option Pricing Method (OPM) to calculate the implied value based on a market approach. The Company’s equity value was allocated using OPM to estimate the fair market value of the Company’s classes of equity.

Quantitative and Qualitative Disclosures About Market Risk

We are a smaller reporting company as defined by Rule 12b-2 of the Exchange Act and are not required to provide the information otherwise required under this item.

JOBS Act

Section 107 of the JOBS Act also provides that an “emerging growth company” can take advantage of the extended transition period provided in Section 7(a)(2)(B) of the Securities Act for complying with new or revised

accounting standards. In other words, an “emerging growth company” can delay the adoption of new or revised accounting standards until those standards would otherwise apply to private companies. We have elected to avail ourselves of this extended transition period.

For as long as we remain an “emerging growth company” under the recently enacted JOBS Act, we will, among other things:

- be exempt from the provisions of Section 404(b) of the Sarbanes-Oxley Act, which requires that our independent registered public accounting firm provide an attestation report on the effectiveness of our internal control over financial reporting;
- be permitted to omit the detailed compensation discussion and analysis from proxy statements and reports filed under the Exchange Act and instead provide a reduced level of disclosure concerning executive compensation; and
- be exempt from any rules that may be adopted by the Public Company Accounting Oversight Board requiring mandatory audit firm rotation or a supplement to the auditor’s report on the financial statements.

Although we are still evaluating the JOBS Act, we currently intend to take advantage of some or all of the reduced regulatory and reporting requirements that will be available to us so long as we qualify as an “emerging growth company,” including the extension of time to comply with new or revised financial accounting standards available under Section 102(b) of the JOBS Act. Among other things, this means that our independent registered public accounting firm will not be required to provide an attestation report on the effectiveness of our internal control over financial reporting so long as we qualify as an emerging growth company, which may increase the risk that weaknesses or deficiencies in our internal control over financial reporting go undetected. Likewise, so long as we qualify as an emerging growth company, we may elect not to provide you with certain information, including certain financial information and certain information regarding compensation of our executive officers, that we would otherwise have been required to provide in filings we make with the SEC, which may make it more difficult for investors and securities analysts to evaluate our company. As a result, investor confidence in our company and the market price of our common stock may be materially and adversely affected.

BUSINESS

Overview

We are a biotechnology company focused on the research and development of transformational vaccines to prevent infectious diseases worldwide. Our versatile vaccine platform has unique molecular properties that enables delivery of various antigens, which can be utilized to develop singular or multi-targeted vaccines. Our lead influenza (flu) vaccine program uses proprietary technology to identify specific epitopes, or proteins, with cross-reactive properties that enables the potential development of a universal flu vaccine. We are focused on developing novel vaccines that induce durable and long-term immunity. We believe that our pipeline and vaccine platform are synergistic for developing next generation preventive vaccines to improve both health outcomes and quality of life globally.

Our pipeline includes novel vaccine candidates exclusively licensed from renowned research institutions. We seek to develop vaccines that provide long-lasting immunity to harmful viral and bacterial pathogens that cause infections in patient populations with high unmet needs. Our exclusive license agreements include patented influenza epitopes of limited variability, or ELV, identified through a proprietary computational research and discovery process, discovered by Dr. Sunetra Gupta and her team at the University of Oxford. Our collaborators are pioneers in vaccine discovery and development. We are exploring the development of these influenza ELV's utilizing our Norovirus shell and protrusion (S&P) nanoparticle vaccine platform licensed from Cincinnati Children's Hospital Medical Center, or CHMC. We are also utilizing our platform to develop a vaccine for the prevention of gastroenteritis cause by both norovirus and rotavirus. Our exclusively licensed S. pneumoniae vaccine candidate is from St. Jude Children's Research Hospital. The vaccine is designed to prevent harmful middle-ear infections in children and is being developed for intranasal delivery well suited for pediatric patients. We leverage the expertise of our collaborators to pursue the discovery and development of vaccines for these diseases, which are high unmet needs globally.

In addition, we have expertise in identifying business development opportunities for our platform vaccines technologies and portfolio. This allows for both internal pipeline expansion and the ability to generate non-dilutive revenue from potential licensing partners to utilize our discovery engine vaccine platform. There is potential for adjunctive or next generation therapeutic exploration to enhance current standard of care options.

Vaccination has been used as an effective method of protecting individuals against harmful diseases by utilizing the body's natural defense system to develop resistance or immunity to infections (World Health Organization, <https://www.who.int/news-room/q-a-detail/herd-immunity-lockdowns-and-covid-19>). The body's immune system naturally creates antibodies and cell-mediated immunity to defend against foreign pathogens. Vaccines introduce or present these foreign pathogens, prompting the body's immune system produce a response protective against the pathogen without exposing the body to the relevant lethal or harmful infection (World Health Organization, <https://www.who.int/news-room/q-a-detail/herd-immunity-lockdowns-and-covid-19>). While vaccines are generally able to provide resistance against disease, many infectious diseases can evolve or mutate leading to shortcomings of traditional vaccines, such as yearly reformulations. We believe our vaccine candidates can provide an alternative to the current standards of care by harnessing durable and long-lived immune response to specific or multiple antigens.

The global vaccine market has recently experienced significant growth caused by rising awareness of the importance of immunization and vaccination benefits in emerging markets as well as by projects to fuel further global market expansion. For instance, The World Health Organization (WHO) has undertaken initiatives to increase immunization awareness through its Global Vaccine Action Plan and Global Immunization Vision and Strategy.

As such, market research professionals project the global vaccine market size to reach \$73.78 billion by 2028, representing a CAGR of 7.3% over the forecast period, driven by rising prevalence of infectious diseases, increasing government funding for vaccine production and growing emphasis on becoming immunized.

This market acceleration has been coupled with various strategic transactions in the sector, including consolidations and mergers and acquisitions in recent years. Major market participants have strategically acquired start-ups and mid-sized companies to broaden their products portfolios and service offerings. For instance, in February 2019, Bharat Biotech acquired Chiron Behring Vaccines, one of the leading manufacturers of rabies vaccines across the globe. Additionally, in October 2018, Emergent BioSolutions, a multinational specialty

biopharmaceutical company, acquired PaxVax for \$270 million, and in July 2017 Sanofi acquired Protein Sciences for \$650 million. The appetite of these companies to buttress their vaccine programs and pipelines reflects the increasing importance of vaccines in the healthcare sector, both nationally and worldwide.

The U.S. Centers for Disease Control, or CDC, its Advisory Committee on Immunization Practices, or ACIP, and similar international advisory bodies develop vaccine recommendations for both children and adults. New pediatric vaccines that receive ACIP preferred recommendations are almost universally adopted, and adult vaccines that receive a preferred recommendation are widely adopted. We believe that our vaccine candidates will be well-positioned to obtain these preferred recommendations, by virtue of their longer and more durable immunity, which could drive rapid and significant market adoption.

PIPELINE

Our vaccine candidates are being developed in a manner that is scalable, designed to be cost-effective and provide long term benefit to patients from infectious agents.

Infectious Disease Program	Candidate	Preclinical	Phase 1	Phase 2	Phase 3	Licensee	Status
Universal Flu	BWV-101					UNIVERSITY OF OXFORD	1H22: pre-clinical POC
H1 pre-pandemic	BWV-102						1H22: start IND enabling studies
S. pneumo induced AOM (intranasal)	BWV-201					St. Jude Children's Research Hospital	1H22: start IND enabling studies
Norovirus / Rotavirus	BWV-301					Cincinnati Children's	1H22: pre-clinical POC
Norovirus / Malaria	BWV-302						2H22: start IND enabling studies

Strategy

We aim to identify, discover and develop novel preventive vaccines for infectious diseases. Key elements of our strategy include:

- **Investment in advancing the development of our novel vaccine pipeline programs through IND-enabling activities and Phase I clinical studies.**
 - We plan to advance our main vaccine programs: influenza, *S. pneumoniae* induced AOM norovirus-rotavirus, and norovirus-malaria.
 - Our in-licensed vaccine candidates are carefully selected based on the following criteria: area of significant unmet medical need for preventive long-term vaccine; strong scientific rationale and established clinical and regulatory pathways; defined competitive landscape and potential future commercial opportunity; and license exclusivity.
- **Prioritizing the research and development for our lead influenza vaccine candidates, BWV-101 and BWV-102 through Phase I.**
 - Our goal is to develop a universal influenza vaccine that protects against all strains of influenza, including pandemic strains. In collaboration with The University of Oxford and CHMC, we are evaluating vaccine candidates to pursue the best development path forward to stimulate durable and broad-spectrum immunogenicity.
 - We will leverage the pre-clinical and clinical experience we gain from the development of BWV-102 to accelerate the development of the BWV-101 program. We expect that the manufacturing and clinical data collected will provide invaluable insight for development of the universal vaccine candidate.

- **Maximize and utilize the value of our collaborators and third-party vendors.**
 - We will combine disciplined business strategies to further expand the potential synergies with current collaborators.
- **Deploy and expand our proprietary norovirus S&P nanoparticle platform.**
 - Our immunogenic multi-purpose vaccine platform technologies can be utilized with an array of infectious disease agents to access multiple development pathways and allow for potential next-generation life cycle management to expand our pipeline and pursue business development opportunities. There is potential for the platform to pursue adjunctive therapies to currently available drugs, and for current therapies to be re-optimized and formulated to protect against multiple antigens.

Management and History

Blue Water Vaccines, Inc. was founded in October 2018 by our Chief Executive Officer, or CEO, Joseph Hernandez, with the initial goal of developing a transformational universal flu vaccine to treat and prevent infections in patients globally. Our initial technology, licensed from the University of Oxford, provides a novel approach to developing a universal influenza vaccine. Subsequently, our team has identified other program candidates and technologies to broaden and diversify our vaccine pipeline.

Mr. Hernandez, our Chairman and CEO, is a veteran entrepreneur, philanthropist, and operator with a broad skillset of founding, building, and selling companies, as well as executing business development transactions and securing private and public capital, including Digene, Noachis Terra and Blue Water Acquisition Corp. Mr. Hernandez was responsible for our initial \$7 million seed funding round from investors including CincyTech. In addition to his position as our Chairman and CEO, Mr. Hernandez also serves as the chairman of the board of directors for Clarus Therapeutics, Inc. (Nasdaq: CRXT) in addition to certain other private companies. Subsequently, a team of veteran industry executives and advisors were assembled, bringing valuable expertise to our growing infectious disease company.

Erin Henderson, who serves as our Chief Business Officer, has over 20 years of leading strategic transactions, governmental and stakeholder relations and corporate expansion. Previously, since 2010, she was the Managing Principal at The Aetos Group, a management consulting firm serving both the public and private sectors. Andrew Skibo is our Head of Biologic Operations and was recently Head of Global Biologics Operations at MedImmune/AstraZeneca and previously worked for Amgen and Genentech (now Roche), where he was responsible for operations, engineering, construction, and validation for large-scale capital projects related to bio-pharmaceutical manufacturing. Ronald Cobb, Ph.D., our Head of Science and Discovery, was recently Chief Scientific Officer at Ology Bioservices (formerly Nanotherapeutics) and previously worked for RTI Biologics and Berlex Biosciences. Brian Price, Ph.D., our Head of Technology Strategy, brings over 20 years of successful product development experience and business development growth based on programs in toxicology, analytics, and therapeutic and vaccine development.

Additionally, members of our Board of Directors have extensive expertise in the fields of life sciences, business, and finance. In addition to Mr. Hernandez, our directors upon the consummation of this offering include Michael Venerable, CEO of CincyTech, Kimberly Murphy, former VP, Commercialization Leader, influenza at GlaxoSmithKlein, Allan Shaw, an experienced biotechnology CFO and director nominee James Sapirstein, R.Ph., M.B.A, President and CEO of AzurRx BioPharma (NASDAQ:AZRX). Our Scientific Advisory Board includes Sunetra Gupta, Ph.D. Professor of Theoretical Epidemiology at The University of Oxford, a leading voice in infectious disease globally; David Zarley, Ph.D., with more than 30 years of experience in vaccine research and development, including former leadership roles at Pfizer and Wyeth; and, following the consummation of this offering, John Rice, Ph.D., Managing Director at CincyTech, with more than 30 years of biotechnology advising experience.

Subject to certain non-compete restrictions, our chief executive officer, Joseph Hernandez, and other key personnel may pursue other business or investment ventures while employed with us. Accordingly, they may have conflicts of interest in allocating time among various business activities and potentially competitive fiduciary and pecuniary interests that conflict with our interests. See “Risk Factors — Our Chief Executive Officer, Joseph Hernandez, holds certain management positions and directorships of other companies and may allocate his time to such other businesses, which may cause conflicts of interest in his determination as to how much

time to devote to our affairs and potentially competitive fiduciary and pecuniary interests that conflict with our interests.” For a complete discussion of the business affairs of our officers, directors and other personnel, please see “Management — Executive Officers and Directors.” Any such additional business activities or ventures may present conflicts to our interests. We do not believe that any such potential conflicts would materially affect our ability to conduct our operations.

Our Vaccine Platform

BWV Norovirus (NoV) S&P Nanoparticle Versatile Vaccine Platform

Bioengineering the shell (S) and protruding (P) domains of the norovirus capsid protein, polyvalent nanoparticles and polymers/oligomers provide a versatile vaccine platform with wide applications

Our Approach to Stimulating the Immune System for Infectious Disease Protection

Our S&P platform was co-invented by two researchers, Xi Jason Jiang, Ph.D., and Ming Tan, Ph.D., of the Division of Infectious Disease at the Cincinnati Children’s Hospital Medical Center. The pre-clinical research conducted at CHMC provided encouraging data that supports further investigation and development of the platform for our vaccine candidates. The S&P platform combines two or more immunogenic components, a norovirus antigen plus at least one additional antigen, together creating novel constructs. The norovirus nanoparticle enhances immunogenicity of the inserted antigen. The S & P particles themselves also act as antigens, and are large enough to trigger an immune response to a foreign substance. By combining the norovirus nanoparticle with one or more antigens from other infectious disease(s), the immune system is stimulated to create antibodies to both the norovirus and the additional antigen(s).

Key Elements of our Platform

We are leveraging our disruptive norovirus nanoparticle platform to develop novel, broad-spectrum vaccines for adult and child infectious disease prevention by taking advantage of:

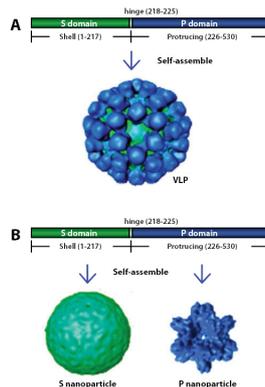
- *Flexible and Scalable discovery platform engine.* We believe we are able to design and create novel vaccines that are stable and scalable for broad spectrum prophylactics. Through this platform’s adaptability, we may opportunistically expand our pipeline and potentially collaborate with third parties for additional vaccines, as well as therapeutics.
- *Cost-effective and Rapid Production of Novel Vaccines.* We are potentially able to reduce the cost and time to manufacture a vaccine candidate by utilizing an E.coli expression platform, compared to traditional vaccine production which uses other, longer production-time platforms, such as Chinese Hamster Ovary (CHO) cells. We have bioengineered these nanoparticles to be stable and effective, as determined through animal immunogenicity studies, using E.coli expression which may provide cost savings and efficiency compared to other VLPs needing a eukaryotic expression system. (Pharmaceutics 2019, 11, 472; doi:10.3390/pharmaceutics11090472).
- *Multi-antigen and Pathogen Capabilities.* One of the key features of our platform is its ability to carry multiple antigens at a time, thereby creating a multi-targeted vaccine. It also provides the opportunity to develop vaccines for protection against not only viral pathogens, but also bacterial and potentially parasitic and fungal pathogens.
- *Therapeutic potential.* We believe our platform may offer opportunities to develop non-infectious disease therapeutic products, for example being used as a carrier or vehicle to transport drugs to specific target locations.

Viral capsid proteins are responsible for many basic functions necessary for viral life cycles, such as viral attachment and entry, and thus can elicit neutralizing antibodies against viral infection after immunization to humans and animals. Consequently, viral capsid proteins are promising vaccine targets against viral infection. Indeed, various capsid protein nanoparticles and complexes have been developed and used as nonreplicating subunit vaccines to combat various infectious diseases.

Unlike traditional live-attenuated and inactivated virus vaccines that need cultivation of infectious virions and are associated with certain safety concerns, the nonreplicating VLP vaccines derived from bioengineered viral capsid proteins do not involve an infectious agent and, therefore, may be safer and have lower manufacturing costs than traditional vaccines. Thus, VLP vaccines represent a next generation of innovative vaccine strategy.

Structure

- The NoV (VP1) capsid structure consists of two major domains a N-terminal shell (S) and C-terminal protruding (P) domains. The S domain builds the interior shell of the capsid and the P domain forms the dimeric protrusions of the capsid.
- The protrusions (P) of norovirus capsid interact with viral glycan receptors for attachment to host cells to initiate an infection.
- The S domain interacts homotypically and drives self-formation of an approximately 60 nm VLP.
- The P domain exhibits homotypic interactions, forming a 24 nm VLP with dimeric protrusions for stabilization of the viral capsid. Additionally, it can also form oligomers or polymers.



Due to the homotypic interaction attributed to the norovirus capsid domains, researchers at CHMC, through bioengineering, designed and generated two subviral nanoparticles, the 24-valent P_{24} and the 60-valent S_{60} nanoparticles, and P-derived polymers to serve as a multifunctional vaccine platform against different pathogens and illnesses.

- These nanoparticles and polymers are easily produced, highly stable, and extremely immunogenic and make them potent platforms to serve to display foreign antigens, self-assembling into chimeric nanoparticles or polymers as vaccine candidates.
- There are several preclinical animal studies have showed P_{24}/S_{60} chimeric vaccine candidates have high protective effects against viral pathogens or diseases. As set forth below in Table 1.
- Such VLPs and capsid-like nanoparticles may be excellent vaccine candidates against corresponding viral pathogens because they can retain arrays of antigenic epitopes that faithfully mimic those of the native virions, and these repeated viral antigens and epitopes stimulate strong immune responses in their animal and human hosts. In addition, such highly immunogenic subviral nanoparticles may also serve as versatile platforms that are able to display foreign antigens for improved immune responses to facilitate development of novel vaccines against various pathogens and diseases.
- The fact that the P_{24} VLP nanoparticles and polymers are composed of authentic norovirus antigens and retain norovirus-specific molecular patterns make it an excellent vaccine candidate against the norovirus.
- In addition, the natures of self-formation, high stability, polyvalence, and high immunogenicity, as evidenced by animal studies conducted in gnotobiotic pig models and mouse models, results

included herein, of the nanoparticles and polymers make them strong vaccine candidate platforms to display foreign antigens, resulting in chimeric nanoparticles as vaccine candidates against further pathogens and diseases.

Our multifunctional vaccine platform is a robust discovery engine and has broad application using both S₆₀ and P₂₄ nanoparticles to target multiple pathogens and illnesses.

Table 1. Summary of norovirus nanoparticles and polymers as vaccine candidates and platforms to display foreign antigens and epitopes.

Nanoparticle/ Polymer	Antigen/Epitope to be Displayed (Pathogen)	Chimeric Products as Vaccine Candidate	Immunity against Pathogens or Diseases	Reference
S ₆₀	VP8* (rotavirus)	S ₆₀ -VP8*	Rotavirus	[25,33]
P ₂₄	P domain (norovirus)	P ₂₄	Norovirus	[39,41]
P ₂₄	VP8* (rotavirus)	P ₂₄ -VP8*	Rotavirus and norovirus	[43]
P ₂₄	M2e (influenza virus)	P ₂₄ -M2e	Influenza virus	[51]
P ₂₄	HA2 B cell epitope (influenza virus)	Trivalent HA2-PP (P ₂₄ -HA2:90-105)	Influenza A virus and influenza B virus	[52]
P ₂₄	VP3 B cell epitope (EV71)	PP-71-6 (P ₂₄ -71-6)	EV71	[53]
P ₂₄	4E10/10E8 epitopes (HIV-1)	4E10-PP/10E8-PP	HIV-1	[54]
P ₂₄	Amyloid-beta, Aβ	PP-3copy-Aβ1-6	Alzheimer's disease	[55,56]
P polymer	P domains (noroviruses)	NoV P _{GI} -NoV P _{GII} GST NoV P*	Different noroviruses	[57,58]
P polymer	P domain (HEV)	NoV P-HEV P	Norovirus and HEV	[59]
P polymer	P domain (astrovirus) P domain (HEV)	Ast P-HEV P-NoV P	Norovirus, astrovirus, and HEV	[60]
P polymer	P domain (astrovirus) P domain (HEV) VP8* (rotavirus)	Ast P-HEV P-VP8*	Rotavirus, astrovirus, and HEV	[61]

Note: EV71, enterovirus 71; HIV-1, human immunodeficiency virus type 1; HEV, hepatitis E virus; Ast, astrovirus; NoV, norovirus; P, protruding domain; P*, the P domain with an end-linked cysteine-containing peptide that can self-assemble into oligomers; PP, P particle; GI, norovirus genogroup I; GII, norovirus genogroup II. Please see the main text for details.

The S₆₀ Nanoparticle as a Multifunctional vaccine platform

Recent technology has generated S nanoparticles using an *E. coli* system with stabilized expression and self-assembly. The S nanoparticles feature exposed C-terminal flexible hinge sites that offer ideal fusion sites for displaying foreign antigens.

Researchers at CHMC have developed a technology to produce uniform 60-valent NoV S₆₀ nanoparticles with high efficiency using a simple bacterial expression system. This was achieved by taking advantage of the homotypic interactions of the NoVVP1 S domain that naturally builds the interior shells of NoV capsids, as well as several modifications to stabilize the S domain proteins and enhance the inter-S domain interactions, respectively. Specifically, we introduced an R69A mutation to destruct the exposed protease cleavage sites on the surface of the native shell that otherwise leads to easy degradation of the S proteins. In addition, we introduced triple (V57C/Q58C/S136'C) cysteine mutations to establish inter-S domain disulfide bonds between two pairs of sterically close residues that belong to two neighboring S domains. This led to significantly enhanced stability and yields of the self-assembled S₆₀ nanoparticles produced by the simple *E. coli* system. The below bullets are supported by published data by Ming Xia, the co-inventor of the S&P platform, and his research team at CHMC.

- An important feature of our technology was to rationally introduce intermolecular disulfide bonds to stabilize the S₆₀ nanoparticles. This approach could also be used to stabilize other viral protein particles or complexes.
- The 60 freely exposed C-termini are a key feature facilitating the S₆₀ nanoparticle to be a useful vaccine platform. Foreign antigens or epitopes can simply be fused to the end of the S domain via flexible linker through recombinant DNA technology.
- Uniform 60-valent NoV VLPs or S particles produced in a bacterial expression system have not been produced before.

- Importantly, our S₆₀ nanoparticles maintained the native conformation with authentic antigenicity; thus, our NoV S₆₀ nanoparticle technology represents a significant bioengineering advancement as uniform 60-valent NoV VLP or S particle *via* an expression system have never been produced before (Xia et al. ACS Nano 2018, 12, 10665–10682).
- Uniform complexity and size of vaccine particles are important factors in quality control of vaccine products, as variations in complexity and size will result in variations in immunization outcomes of the vaccines.

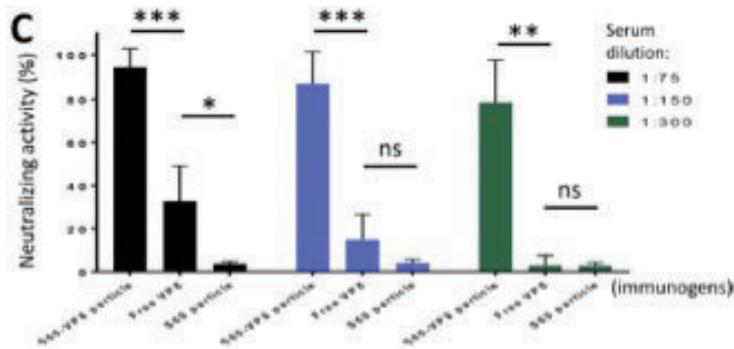
Broad application to fuse several antigens to the S₆₀ nanoparticle based on multiple studies listed below conducted by CHMC (Xia et al. ACS Nano 2018, 12, 10665–10682)

Table 1. List of Antigens That Have Been Displayed by the S₆₀ Nanoparticles

epitope/antigen	size (residue)	yield (mg/L bacteria culture)	S ₆₀ antigen particle formation	significant immune enhancement in mice ^e
RV VP8* antigen	159	~40	yes	yes
HA1 antigen ^d	223	~10	yes	yes
TSR/CSP _A antigen	67	~10	yes	ND
full RV VP8* antigen	231	~20	yes	ND
murine RV VP8* antigen ^d	159	~5	yes	yes
HEV protruding domain antigen ^e	187	~10	yes	ND

S₆₀ nanoparticles may serve as a polyvalent potent vaccine platform (Xia et al. ACS Nano 2018, 12, 10665–10682)

- We believe the self-assembled, polyvalent S₆₀ nanoparticle with 60 flexibly exposed S domain C-termini is an ideal vaccine platform for antigen presentation and immunogenicity enhancement.
- This has been supported by studies showing that when Hisx6 tag was fused to the hinge of the S domain via a linker, fusion proteins self-formed into the S₆₀ nanoparticles.
- This has also been demonstrated by constructing a chimeric, and reconfirmed by cryoEM density map, S₆₀ nanoparticle displaying 60 RV (rotavirus) VP8* proteins, the major rotavirus neutralizing antigen. The S₆₀-VP8*particles can be easily produced with high stability. The chimeric nanoparticle induced higher immunoglobulin, or IgG, response in mice (n=6) toward the displayed VP8*antigen than soluble VP8* antigen. Mouse sera experiments were completed analyzing vaccinated versus the control group to show neutralizing activity against RV infection. The statistical differences between the groups are (*P < 0.05, **P < 0.01, ***P < 0.001) as shown below (Xia et al. ACS Nano 2018, 12, 10665–10682).
- The RV surface spike protein, VP8* was tested for feasibility of the S₆₀ nanoparticle by the analysis using EM micrograph examination and ESI-MS analysis. S₆₀-VP8*particles exhibited stronger blockade in mice (n=6) sera after vaccination (P=0.0003)(Xia et al. ACS Nano 2018, 12, 10665–10682).
- The polyvalent B- and T-cell epitopes of the antigens on the polyvalent VLP platform led to induction of stronger humoral and cellular immune responses, respectively, in animals and humans compared with those elicited by the monovalent epitopes of the free antigen. Thus, the polyvalent VLP platform is likely to increase the immunogenicity of the displayed antigens. Mouse sera experiments were completed analyzing vaccinated versus the control group to show neutralizing activity against RV infection. The statistical differences between the groups are (*P < 0.05, **P < 0.01, ***P < 0.001) as shown below. (Xia et al. ACS Nano 2018, 12, 10665–10682).



The P₂₄ Nanoparticle as a versatile platform (Tan et al. *Nanomedicine*, 2012. 7.6,1-9)

The crystal structure of norovirus VLPs indicates that P domain is involved in strong dimeric interactions forming dimeric protrusions on the viral surface. The oligomeric interactions of the P domains are also observed at the five-fold axes to further stabilize the capsid structure. When the P domain protein was expressed using the *E. coli* system, it self-assembled into P dimers, as well as 24 valent P nanoparticles, P₂₄. P dimers and P₂₄ nanoparticles can exchange dynamically, depending on concentration of the P domain protein, indicating that the assembled P₂₄ particles at this stage were unstable and easy to disassemble back into P dimers. To facilitate P₂₄ nanoparticle formation, inter-P domain disulfide bonds were introduced through fusion of a cysteine-containing peptide to the end of the P domain. During the P₂₄ nanoparticle assembly, the cysteine patches were brought to the center of the P₂₄ nanoparticles, resulting in sterically close contact and thus forming inter-P domain disulfide bonds that significantly stabilized the P₂₄ nanoparticles, which could no longer disassemble back into the P dimers.

- P₂₄ nanoparticles can be produced using an *E. coli* expression system faster and a lower cost than VLPs.
- Both VLP and P₂₄ nanoparticles without adjuvant produce innate, humoral, and cellular immunity.
- The platform can be used to display foreign antigens, epitopes and viral pathogens and non-infectious disease.
- Studies have demonstrated immune response against flu, rotavirus, and norovirus using bi- or trivalent vaccine candidates developed using this approach, noting the potential for the development of a universal flu vaccine. Pre-clinical studies in influenza and rotavirus are provided below supporting our vaccine candidate programs. See — *Our Infectious Disease Vaccine Candidates*.

Our Infectious Disease Vaccine Candidates

Infectious diseases are one of the leading causes of death worldwide. Infectious disease is caused by microorganisms or pathogens, including viruses, bacteria, fungi, and parasites that infect an individual and cause disease. Diseases often cause high fever, inflammation, or other symptoms. While some diseases can be treated with drugs or therapeutics, some infectious agents evolve to become resistant to commonly used drugs, such as antibiotics, and can become difficult to control. Infectious diseases can be passed from person to person or transmitted by insects or other animals. In many cases, vaccines are used to elicit a protective immune response in the absence of an infection to render an individual immune to a particular infectious disease.

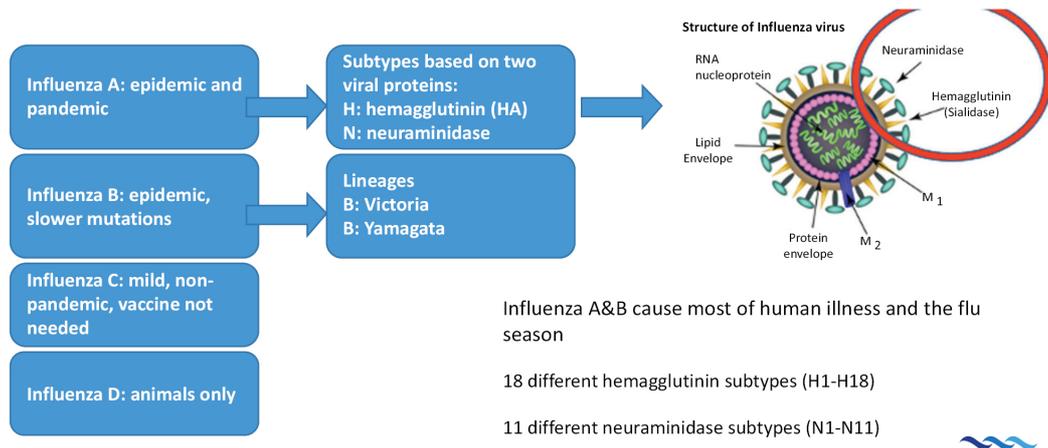
BWV-101: UNIVERSAL INFLUENZA & BWV-102 H1 INFLUENZA

The company’s lead vaccine programs are focused on developing transformational and novel influenza vaccines: BWV-101 for an influenza vaccine to provide protection against H1, H3 and Flu B infections; and BWV-102 for a H1 only vaccine. This program is licensed from the University of Oxford in which all relevant studies were performed to support our hypothesis. Our goal is to develop a vaccine that protects against all influenza strains that commonly infect humans by targeting specific parts of the influenza viruses, which are of limited variability across flu strains and induce a strong protective immune response. This POC will be leveraged to develop

BWV-101 by studying the cross-reactivity of different flu strains, H1, H3 and influenza B. The BWV-101 vaccine candidate may potentially provide a therapeutic benefit that negates the need for annual vaccination, vaccine reformulation, and provide long-lasting broad protection against the flu to millions globally (Thompson et al. Nature Communications. 2018. 9:385).

Influenza

Influenza is a viral infection of the respiratory system, causing an infected person to suffer from certain symptoms, including fever, muscle aches, runny nose, cough, congestion, headaches, and fatigue. The four types of influenza viruses include type A, B, C, and D. The type A and B influenza viruses are referred to as human influenza viruses that are primarily responsible for seasonal flu epidemics each year. Type A flu viruses are further divided into two subtypes, named based on differences in two viral surface proteins called hemagglutinin (H) and neuraminidase (N). Influenza types C and D present a lower priority for vaccination, as Type C viruses cause a mild respiratory illness in humans and has not been associated with human epidemics, and Type D viruses primarily affect cattle and are not known to cause illness in humans (<https://www.cdc.gov/flu/about/viruses/types.htm>).



There is a major unmet need for the development of a novel universal flu vaccine as a prophylactic therapy. Influenza is a major respiratory pathogen. The WHO estimates there are an estimated 1 billion cases of influenza infection with 3-5 million severe cases and 290,000-650,000 related respiratory human deaths worldwide every year. The estimate does not take into account deaths from other diseases such as cardiovascular disease, which can be influenza related. The next influenza pandemic is believed by many experts to be a potentially devastating global health threat. Influenza mortality rates are highest for the very young and elderly.

The global influenza vaccine market was valued at \$3.96 billion in 2018, and is projected to reach \$6.20 billion by 2026, representing a CAGR of 5.9% from 2019 to 2026. Currently, the standard of care and most effective protection against flu is through annual vaccination. The WHO estimates that worldwide, approximately \$4 billion is spent on influenza vaccines annually. However, the flu also a major cause of work absenteeism, leading to an estimated annual productivity loss in the U.S. of \$87 billion. Flu vaccination consists of a yearly injection of attenuated or inactivated (dead) influenza viruses to induce humoral immunity in the form of the antibodies against the current circulating or anticipated seasonal influenza strains. The induction of antibody-producing B-cells through vaccination allows the immune system to defend the body against the influenza virus circulating during the winter months.

An annual seasonal flu vaccine is the best way to help protect against flu. Vaccination has been shown to have many benefits including reducing the risk of flu illnesses, hospitalizations and even the risk of flu-related death in children. The CDC recommends use of any licensed, age-appropriate influenza vaccine during the 2020-2021

influenza season, including inactivated influenza vaccine (IIV), recombinant influenza vaccine (RIV), or live attenuated influenza vaccine (LAIV). No preference is expressed for any influenza vaccine over another. Both trivalent and quadrivalent influenza vaccines will be available. The trivalent vaccines formulation will include A(H1N1) pdm09, A(H3N2) and B/Victoria. The quadrivalent vaccine formulations will include A(H1N1) pdm09, A(H3N2) and B/Victoria, plus B/Yamagata (<https://www.cdc.gov/flu/about/viruses/types.htm>).

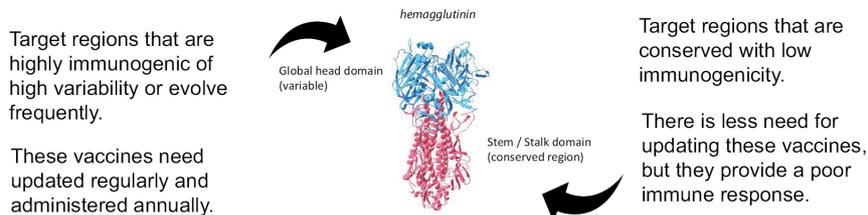
The current influenza vaccines induce antibodies that target regions of the virus that are highly variable and have serious shortcomings, as they:

- (i) must be administered annually,
- (ii) typically provide protection to only 50% of the individuals who receive it; and
- (iii) need to be updated annually and reformulated 6 months prior to influenza season, such that strains that are subsequently prevalent during the applicable “flu season” are not protected against by the vaccine.

Our Proprietary Epitope Discovery

Using the technology that we have exclusively licensed from the University of Oxford, we are developing a universal influenza vaccine. Our exclusive license agreements include patented influenza epitopes of limited variability, or ELV, identified through a proprietary computational research and discovery process, discovered by Dr. Sunetra Gupta and her team at the University of Oxford. We have acquired intellectual property for cross-protective epitopes to be used for our vaccine candidates that were developed and identified through a unique computational discovery process at Oxford University. The data produced through computational analysis at Oxford has shown that antigen evolution in influenza is limited to certain regions of the virus that facilitate binding and entry to host cells and these regions of limited antigenic variability are naturally immunogenic and therefore may be used to develop universal immunity to influenza viruses. We have identified epitopes of limited variability in H1 influenza that have circulated throughout history (since 1918) and make ideal vaccine targets and have completed similar analysis of H3 and Flu B strains for similar epitopes which will be used to produce our lead vaccine candidate BWV-101 as a universal vaccine for influenza infection. Due to the cross-reactive nature of the H1 epitopes in pre-pandemic H1 influenza A, we are also pursuing the development of a stand-alone H1 vaccine (BWV-102). These epitopes are able to be formulated into a vaccine candidate using our VLP platform technologies and may be evaluated using other vaccine technologies through partnerships in order to accelerate development of potential vaccines or to explore adjunct therapies (Thompson et al. Nature Communications. 2018. 9:385).

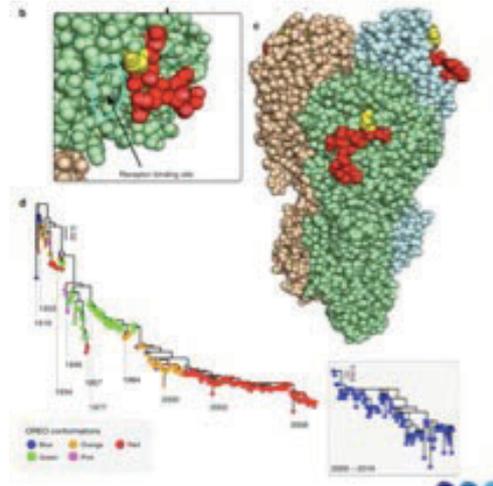
Current influenza vaccine can be divided into two groups:



A single conformational epitope is typically 8 to 15 amino acids in length and in an extreme circumstance (where every change creates an escape mutant), a single epitope could theoretically vary from 208 to 2015 different ways. Therefore, a highly variable virus like influenza should be able to mutate in countless ways during each subsequent season. This would inevitably lead to an explosion of genetic diversity and numerous circulating strains.

However, it seems that there is a constraint limiting how influenza evolves, leading to a single or limited number of strains dominating each season. In 2007, Sunetra Gupta led a group of researchers at the University of Oxford who published a proprietary mathematical model proposing that the single strain dominance, typically seen worldwide annually, could be explained by hypothesizing that epitopes of ‘limited variability’ exist (Antigenic Drift Hypothesis). The model hypothesizes that while there is a significant amount of mutation of influenza strains, this variability occurs in a specific portion of the virus, while certain epitopes are required to remain relatively constant and are more limited in their variability in order for the virus to infect individuals, thus clarifying how influenza is not as variable as commonly thought.

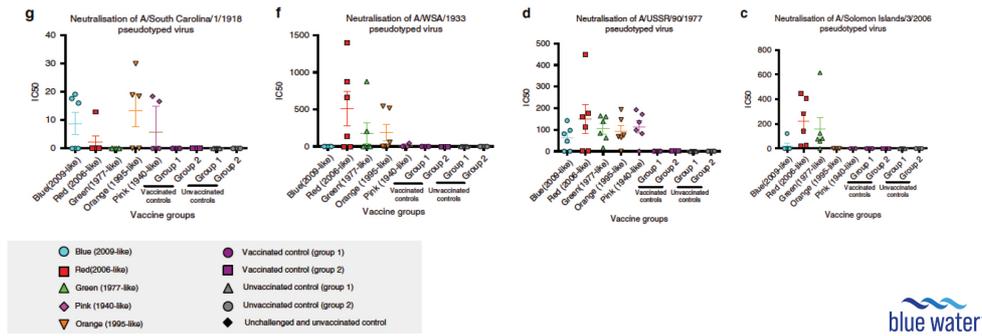
Antigenic Drift Hypothesis Illustration



The Antigenic Drift Hypothesis suggests the existence of epitopes of limited variability mediate a population’s immunity to influenza strains. As a particular influenza strain circulates in the population, immunity to a specific pattern of epitopes is induced. This leads the virus to change its antigenic configuration and cycle through its limited repertoire of antigenic conformations. However, population immunity also changes due to birth and death within the population (i.e. individuals in the population who had experienced and developed immunity to certain conformations die). This allows prior epitope conformations to reappear. The loss of herd immunity to these epitope of limited variability causes the emergence of epidemics (Thompson et al. Nature Communications. 2018. 9:385).

Oxford scientists have identified the naturally antigenic regions that drive immunity to influenza by evaluating serum from these from various age groups of humans using assays and ELISAs reveal periodic cross-reactivity to ELV. Pseudotype microneutralisation data reveals a cyclical pattern of epitope recognition. The studies of children’s sera were used to detect antibodies and demonstrated that young children ages 6 to 12 had immunity to historical influenza strains that circulated many years prior to when they were born and they could never have possibly been exposed to, one of which that last circulated in 1934. Mutagenesis of the identified regions of limited variability in various historical viruses removed the protective immunity. Furthermore, vaccination of mice, as shown below, with these regions of the influenza virus produced an identical immune

response that was observed in the children. For example, the mice vaccinated with either the region from the influenza virus circulating in 2006 or 1977 were protected against infection with an influenza with a virus that last circulated in 1934, replicating the immunity seen in children ages 6 to 12. (Thompson et al. Nature Communications. 2018. 9:385)



This work demonstrated that vaccination with just four variants of one region of limited variability in H1 influenza was able to elicit immunity to all historical H1 influenza strains. As these regions periodically reappear and disappear over time, vaccination with all of the possible variants would be expected to provide protection against future influenza strains as well. The identified epitopes are restricted in their variability due to presence of a receptor-binding site and small alpha helix structure between disulphide bonds.

The following research findings form the basis for our influenza vaccine candidates:

1. Epitopes of limited variability which are under strong immune selection exist within influenza.
2. These epitopes drive the antigenic evolution of influenza.
3. These epitopes cycle between a limited number of different conformations.
4. Epitopes of limited variability would make ideal vaccine targets.

BWV-101: Universal Influenza Vaccine

Our approach to developing a novel, universal flu vaccine for the prevention and protection against human influenza strains and potential pandemic strains by targeting specific limited variability epitopes includes the following steps and processes.

We are exploring development of an influenza vaccine utilizing both the S & P nanoparticles to determine the most effective and efficient presentation of our ELVs and the versatile S&P nanoparticle vaccine platform from CHMC with the H1 influenza antigens. Data in preclinical mice (Rotavirus-specific-antibody-free BALB/c mice, n=5-7) challenge studies inserted M2e, a spike protein of influenza, into a P-particle loop; showed mice that were vaccinated had 100% protection when injected with lethal doses of influenza (Tan et al. JOURNAL OF VIROLOGY, Jan. 2011, p. 753–764). This dual approach will allow us to gain valuable information as we further the development and manufacturing of the BWV-102 program and utilize it for the development of BWV-101. We are currently assessing the ELVs to determine the most effective and efficient route of antigen presentation. Additionally, we are currently optimizing antigens for H3 and Flu B to be included with the identified H1 antigens to finalize our universal influenza vaccine formulation.

We are using established manufacturing methods, including *E.coli* fermentation to produce our chimeric proteins, to reduce the cost and increase the efficiency and scalability of our manufacturing process for the vaccine. The antigens will be displayed by a proprietary virus-like particle (VLP) that can be produced in *E. coli* (Pharmaceutics 2019, 11, 472; doi:10.3390/pharmaceutics11090472). Our research and discovery model uses bioinformatics and phylogenetic analysis to identify possible sites of epitopes of limited variability before confirming their existence experimentally.

To date, we have identified naturally immunogenic epitopes for H1, H3 and influenza B. Bioinformatics studies and wet lab studies suggest that these epitopes, especially H1N1, and the chimeric scaffold configuration of our vaccine induce immunity due to induction of broad cross-reactive antibodies in other strains such as H10N3 (bird flu), and pandemic strains including H5NX, H7NX, and H9NX. H9NX (Thompson et al. *Nature Communications*. 2018. 9:385). Therefore, we foresee the development of H1N1 vaccine as a priority due to its high cross-reactive priorities.

BWV-102 Stand-Alone H1 Vaccine

We are developing our H1 stand-alone influenza prophylactic product, BWV-102, to address potential pandemic zoonotic H1 strains, specifically the G4 EA H1N1 identified by scientists and reported in June 2020, as a potential next pandemic strain. BWV-102 is being developed using the H1 ELVs identified by the team at the University of Oxford. While the product is designed to protect against infection from any H1 strain, there is potential for cross protection from H5 and H10 strain infections as well. Preclinical studies were conducted in Balb C mice (n=6) using a prime-boost-boost protocol (Thompson et al. *Nature Communications*. 2018. 9:385). The proposed Phase I clinical study will employ this prime -boost protocol; however, it is possible that a single dose of the vaccine candidate will confer protection against current and historical H1 strains with a prime-boost dose or a single dose.

As reported in 2020, the G4 EA H1N1 strain is the most prevalent influenza strain circulating among swine populations in China. The strain was first identified in 2016 and has been monitored by scientists in China through their swine surveillance program. The strain has genes from a mix of pig, avian and human viruses, including genes from the 2009 H1N1 flu pandemic virus. Currently, the G4 EA H1N1 strain is not transmissible human to human, however, scientists hypothesize that there is a high likelihood of strain reassortment occurring that could make human to human transmissibility possible. The current H1N1 influenza strain circulating may provide some protection against disease induced by G4 EA H1N1 infection.

The ability of the BWV-102 ELVs to induce an immune response and protection against heterologous challenge with historical strains was assessed in Balb-C mice (n=6) (Thompson et al. *Nature Communications*. 2018. 9:385). We are currently assessing the ELVs in combination with the S₆₀ particle, P₂₄ particle and a proprietary VLP, currently in development, to determine the most effective and efficient route of antigen presentation. Manufacturing of the product is expected to occur in *E. coli* (*Pharmaceutics* 2019, 11, 472; doi:10.3390/pharmaceutics11090472). We anticipate results of the VLP presentation assessments in the first half of 2022.

BWV-201 *Streptococcus pneumoniae* (*S. pneumoniae*) Vaccine

Our BWV-201 vaccine candidate is a live attenuated serotype-independent vaccine, for which early data supports further investigation to pursue a long-term preventive intranasal vaccine for *S. pneumoniae* induced acute otitis media, or AOM. We in-licensed the novel live attenuated *S. pneumoniae* strain from St. Jude Children's Research Hospital, or St. Jude, as a potential serotype independent vaccine.

The potential of this vaccine to provide a long-term, leading alternative treatment for AOM and subsequent introduction of a novel preventative standard of care. The development of a novel vaccine could eradicate potential short-term pain and/or long-term harmful side effects from contracting the virus. Complications from AOM include sensorineural hearing loss, or SNHL, in adults but are more relevant for the endangerment of children.

Researchers from St. Jude developed a strain of *S. pneumoniae* that contains greatly reduced virulence yet can transiently colonize the nasopharyngeal cavity, inducing immune responses to significantly decrease the incidence of AOM and sinusitis as demonstrated in animal models. Our vaccine production is a straightforward process, utilizing the entire novel attenuated bacterium with purification and concentration steps only in the downstream process, thereby reducing the time and cost of production significantly compared to commonly used polysaccharide or conjugate vaccines.

Based on information from the American Academy of Pediatrics, over 5 million cases of AOM are reported annually in the U.S., resulting in approximately 30 million medical care visits and over 10 million antibiotic prescriptions. AOM is the most common condition treated with antibiotics in the United States and increasing antibiotic resistance among the organisms responsible for AOM is of concern to researchers.

Additional statistics supporting the need for a novel preventive vaccine:

- The global AOM rate is 10.85%, or 709 million cases per year, with 51% occurring in children under 5 years old (Tong et al. BMC Health Serv Res. 2018; 18: 318).
- By 3 years of age, 80% of children globally are expected to have at least one episode of AOM. (Vergison A, Lancet Infect Dis. 2010 Mar;10(3):195-203. doi: 10.1016/S1473-3099(10)70012-8. PMID: 20185098.).
- Current treatment for AOM is by antibiotic prescription, with more than 80% of all consultations resulting in a prescription. (Haggard, M. Eur J Pediatr 170, 323 – 332 (2011). <https://doi.org/10.1007/s00431-010-1286-4>).
- Even with the introduction of the pneumococcal conjugate vaccine (PCV13) in 2010, 26-36% of cases of AOM in U.S. were caused by *S. pneumoniae*. (Casey JR, Kaur R, Friedel VC, Pichichero ME. Acute otitis media otopathogens during 2008 to 2010 in Rochester, New York. *Pediatr Infect Dis J*. 2013;32(8):805-809. doi:10.1097/INF.0b013e31828d9acc).
- Worldwide cases of AOM due to *S. pneumoniae* is estimated to be 30-50%. (Bergenzelz C, Hakansson AP. *Curr Otorhinolaryngol Rep*. 2017;5(2):115-124. doi: 10.1007/s40136-017-0152-6. Epub 2017 May 20. PMID: 28616365; PMCID: PMC5446555.).
- An estimated \$4.3 billion USD is spent on AOM treatment each year in the U.S. alone. (Tong S, BMC Health Serv Res. 2018 May 2;18(1):318. doi: 10.1186/s12913-018-3139-1. PMID: 29720156; PMCID: PMC5932897.).

The current standard of care treatment for AOM in children is reliant on antibiotics. The resolution rate of AOM in children is 81% without antibiotic treatment vs. 93% with antibiotic treatment. Antibiotic treatment of AOM in children has limitations, including recurrence within 30 days.

The CDC recommends broad pneumococcal vaccines for children younger than 2 and for adults over 65 years of age (CDC). The CDC also recommends vaccinations for children and adults age 2 through 64 either previously unvaccinated or partially vaccinated. Two vaccines are currently approved in the U.S. and other countries: Prevnar13 or PCV13 (Pfizer) (ii) Pneumovax or PPSV23 (Merck). An additional vaccine, Synflorix, is for approved use outside of the U.S. for the prevention of pneumococcal disease and *S. pneumoniae* induced AOM for the 10 serotypes included in the vaccine.

Therefore, an effective serotype independent *S. pneumoniae* AOM vaccine could significantly impact pediatric healthcare demand. As a preventative treatment, the vaccine's advantages include: reduction of near-term pain; reduction of recurrent AOM that may result in the need for tympanostomy tube placement; lessening of antibiotic usage, which would decrease the number of antibiotic resistant organisms in the environment; and avoiding potential long-term hearing loss.

Previous live, attenuated strains of *S. pneumoniae* were generated by deleting several highly immunogenic virulent genes and therefore may not be optimal vaccine candidates. Some of these deletions include antigens that induce potent antibody responses following pneumococcal carriage and otitis media in young children and therefore may not be optimal vaccine candidates.

Our technology in-licensed from St. Jude focuses on candidate genes essential for microbial adaptation to the host environment while maintaining virulence determinants. The St. Jude researchers developed a *S. pneumoniae* strain with a deletion in *ftsY*, a central component of the signal recognition pathway (SRP). SRP mutants have greatly reduced virulence, although virulence factors are still produced. The *S. pneumoniae ftsY* deletion strain may potentially make an ideal live attenuated vaccine, as it can transiently colonize the nasopharyngeal cavity without inducing immune responses to virulence protein antigens but does not cause invasive disease.

Our candidate vaccine is a live attenuated serotype-independent vaccine, that early data supports further development to pursue a potential long-term preventive intranasal treatment. BWV-201 will likely require two doses to provide life-long protection. BWV-201's has the ability to transiently colonize the nasopharyngeal cavity

and significantly decrease the incidence of AOM and sinusitis in animal models. The vaccine candidate is derived from the noninvasive serotype 19F strain BHN97, which normally causes sinusitis/purulent rhinitis and AOM. As previously noted, the *ftsY* gene was deleted by St. Jude researchers, and is designated BHN97DftsY (Rosch, Jason W et al. EMBO molecular medicine vol. 6,1 (2014): 141-54. doi:10.1002/emmm.201202150).

Our vaccine production is a straightforward approach, utilizing the entire bacterium with purification and concentration steps only in the downstream process thereby significantly reducing the time and cost of production compared to polysaccharide or conjugate vaccines.

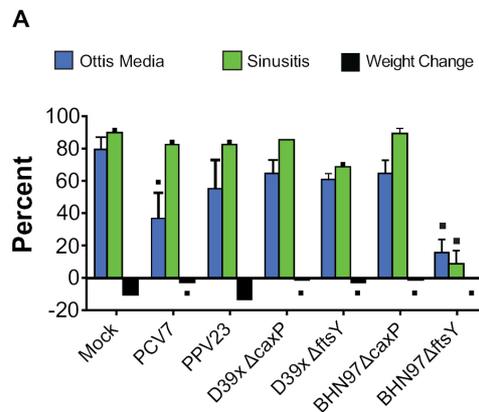
Preclinical data colonization and invasiveness and Otitis Media/Sinusitis Efficacy

Our pre-clinical data has shown encouraging results from the research and development of BWV-201 as a potential intranasal delivered vaccine candidate. Multiple animal models have demonstrated protection from AOM.

To demonstrate vaccine efficacy against AOM and sinusitis, mice were immunized (prime and two boosts) with Pevnar 7, Pevnar 13, Pneumovax, D39x and BHN197 *caxP* and *ftsY* deletion mutants. Deletion of *ftsY*, a central component of the signal recognition particle (SRP) pathway show heightened sensitivity to environmental stress and have greatly diminished virulence. Deletion of *caxP*, a calcium/magnesium transporter, renders host physiological conditions in blood and mucosa toxic to the bacterium. BHN97*ftsY* serotype 19F is also characterized in PCV7, PCV13, and PCV23 (Rosch, Jason W et al. EMBO molecular medicine vol. 6,1 (2014): 141-54. doi:10.1002/emmm.201202150).

This head-to-head preclinical study mice (n=25-31) that were either vaccinated by mock or live attenuated with deletions of either type 2 or 19F backgrounds. This was challenged by bioluminescent BMH97X twice daily for AOM and sinusitis. Histopathology was also used to analyze the ears of mice. Xenogen imaging PPV23 was used as a negative control.

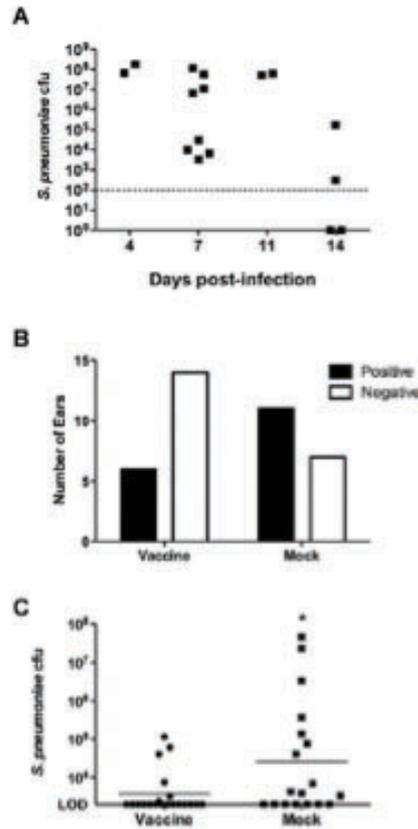
Two weeks following the second boost, the bioluminescent strain BHN97x (type 19F), a serotype included in Pevnar 7, Pneumovax and BHN97*ftsY* (referred to as homologous challenge) were introduced to the mice. Only BHN97 Δ *ftsY*, and to a lesser extent Pevnar 7, showed significant reduction in AOM and only BHN97 Δ *ftsY* demonstrated significantly reduced sinusitis compared to mock infected animals. The incidence of AOM was significantly ($p < 0.05$ compared to mock) lower in BHN97 Δ *ftsY*-vaccinated mice (Figure A-below). Only BHN97 Δ *ftsY* vaccine significantly decreased the incidence of sinusitis ($p < 0.05$). Measurement of luminescence at 24 and 72 h confirmed protection engendered by BHN97 Δ *ftsY*.



To determine if BHN97DftsY (serotype 19F) can induce heterotypic AOM protection (AOM caused by a *S. pneumoniae* serotype not contained in the vaccine), mice (n=20) were immunized as detailed above and challenged with BHN54 (serotype 7), which causes otitis media in about 50% of challenged animals. The control vaccine Pevnar 13 contains serotype 7; therefore, this study compares heterotypic (BHN97DftsY) versus homotypic (Pevnar 13) vaccine protection. BHN97DftsY had a 10-fold lower incidence of AOM, (* $p < 0.05$)

when compared to mock immunized animals, demonstrating that the attenuated vaccine does induce heterotypic protection. Bioluminescent signaling as well as, reduction in weight loss also demonstrated secondary analysis supporting vaccine protection.

BHN97DftsY induced protection from AOM was additionally confirmed in a chinchilla (n=20) animal model. The animals were immunized (prime and two boosts) and then challenged with BHN97 two weeks after the final boost. Vaccinated animals had a decreased incidence of culture-positive ears and had a significantly decreased number of recoverable bacteria from the middle ear (A). Following vaccination, a reduction in the number of culture positive ears in vaccinated group compared to the mock animals was observed (B) as well as significant reduction in recoverable CFUs from middle ear 7 days post challenge (C) * = $p < 0.05$ by Mann-Whitney.



A potential advantage of an attenuated *S. pneumoniae* vaccine such as BHN97DftsY is that immune responses are directed to bacterial proteins rather than just polysaccharides and should not be limited to serotype specific protection. Purified polysaccharide (PPV) vaccines such as Pneumovax (produced by Merck & Co.) and pneumococcal conjugate vaccines such as Prevnar 7/13/20 (produced by Wyeth/Pfizer) or Synflorix (produced by GlaxoSmithKline plc) are generally considered serotype specific, inducing protection to disease caused only by pneumococcal strains contained in the vaccines.

BWV-301 Norovirus-Rotavirus Vaccine Program

We are developing BWV-201 to prevent acute gastroenteritis, or AGE, caused by norovirus and rotavirus, utilizing the P₂₄ nanoparticle of our vaccine platform. The vaccine is based on one or two doses of the norovirus P₂₄ nanoparticle presenting 24 rotavirus VP8* antigens. Most cases of gastroenteritis are caused by viruses. The CDC reports that viral gastroenteritis infections cause 200,000 deaths in children worldwide each year. Common symptoms of viral gastroenteritis causes nausea, vomiting, diarrhea, anorexia, weight loss, and dehydration.

Gastroenteritis

Gastroenteritis, often called stomach flu, is inflammation of the gastrointestinal tract — the stomach and intestine. Symptoms may include diarrhea, vomiting and abdominal pain. Fever, lack of energy and dehydration may also occur. While gastroenteritis is usually caused by viruses, bacteria, parasites, and fungus can also cause gastroenteritis. Eating improperly prepared food, drinking contaminated water or close contact with a person who is infected can spread the disease. Norovirus and rotavirus are two viruses that cause gastroenteritis in adults and children.

In 2015, there were two billion cases of gastroenteritis, resulting in 1.3 million deaths globally. Children and those in the developing world are affected the most. In 2011, there were about 1.7 billion cases, resulting in about 700,000 deaths of children under the age of five. In the developing world, children less than two years of age frequently get six or more infections a year. It is less common in adults, partly due to the development of immunity. In adults, norovirus is the most common cause of severe disease. Rotavirus, however, is the common cause of AGE in children.

Norovirus

Norovirus causes significant debilitating AGE, with a reported 700 million infections and 20% of all diarrheal cases reported annually worldwide, according to the CDC. About 200 million cases are seen among children under 5 years old, leading to an estimated 50,000 child deaths every year. Norovirus is the cause of approximately 20% of all AGE cases worldwide each year. It is estimated that 68.9 cases of norovirus infection occur in every 1000 people. In North America, norovirus induced AGE tends to be seasonal, occurring in cooler, rainy months and particularly impacts groups in close proximity, such as in schools, dormitories, medical facilities, and cruise ships.

Norovirus costs \$60.3 billion worldwide each year (CDC). Globally, norovirus resulted in a total of approximately \$4.2 billion in direct health system costs and approximately \$60.3 billion in societal costs per year. Disease among children younger than 5 years cost society \$39.8 billion, compared to \$20.4 billion for all other age groups combined. Costs per norovirus illness varied by both region and age and was highest among adults ages 55 years and older. Productivity losses represented 84-99% of total costs varying by region. While low and middle income countries and high income countries had similar disease incidence (10,148 vs. 9,935 illness per 100,000 persons), high income countries generated 62% of global health system costs (Bartsch et al. PLoS One 2016; 11:e0151219).

In North America, the median yearly cost of outbreaks was \$7.6 million in direct medical costs, and \$165.3 million in productivity losses. An average of approximately 113,000 hospitalizations, 8.2-122.9 million missed school/work days, \$0.2-\$2.3 billion in direct medical costs, and \$1.4-\$20.7 billion in productivity losses was due to sporadic illness. The total economic impact of norovirus infection was \$10.6 billion based on the current incidence estimate 68.9 cases per 1000 population, or approximately \$0.15 million per person infected.

The total economic burden is greatest in young children but the highest cost per illness is among older age groups in some regions. These large costs overwhelmingly are from productivity losses resulting from acute illness. Low, middle, and high income countries all have a considerable economic burden, suggesting that norovirus gastroenteritis is a truly global economic problem.

There is not a norovirus vaccine on the market presently. There are, however, a number of rotavirus vaccines currently marketed around the world. RotaTeq, owned by Merck, a live, oral pentavalent vaccine and Rotarix, owned by GSK, a monovalent, human, live attenuated vaccine are recommended by the World Health Organization (WHO) for global use in children and approved for use in the U.S., Canada and Europe. Other monovalent vaccines are available but only approved for use in one country, either China, Vietnam or India.

Development

P₂₄ VLPs produced in *E. coli* and norovirus VP1 VLPs produced in a baculovirus expression system were both demonstrated to elicit innate, humoral and cellular immunity in a mouse model, indicating that both constructs have potential as norovirus virus candidates. In addition, when delivered intranasally both constructs were able to induce partial cross-variant protection against diarrhea in a gnotobiotic pig model. Ramesh et al. *Vaccines* 2019, 7, 777.

Rotavirus

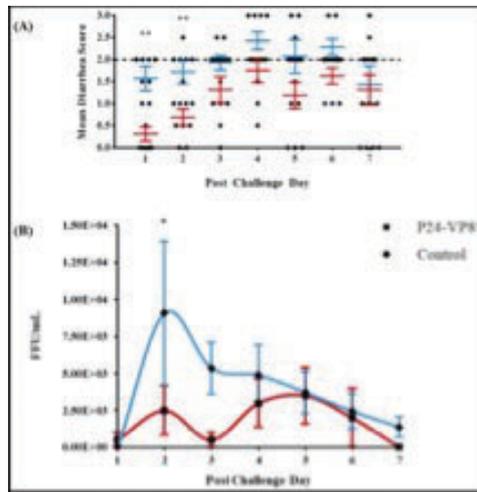
Rotavirus is the most common cause of diarrheal disease among infants and young children, causing an estimated 111 million episodes of diarrhea annually, 2 million hospitalizations and 352,000-592,000 deaths annually, according to the CDC. After the introduction of live attenuated oral vaccines the incidence of rotaviral hospitalizations and deaths have significantly declined. However, there is still a need for efficacious, cost-effective rotavirus vaccines.

The rotavirus vaccine is recommended by the CDC and ACIP as a prevention for children. However, managing the symptoms is the only way to help adults and children infected with either of the viruses. Due to the potential of death, most treatments are focused on dehydration prevention and management. Treatment involves getting enough fluids. For mild or moderate cases, this can typically be achieved by drinking oral rehydration solution (a combination of water, salts and sugar). In those who are breastfed, continued breastfeeding is recommended. For more severe cases, intravenous fluids may be needed and care provided in the hospital. Fluids may also be given by a nasogastric tube. Zinc supplementation is recommended in children. Antibiotics are generally not needed. However, antibiotics are recommended for young children with a fever and bloody diarrhea.

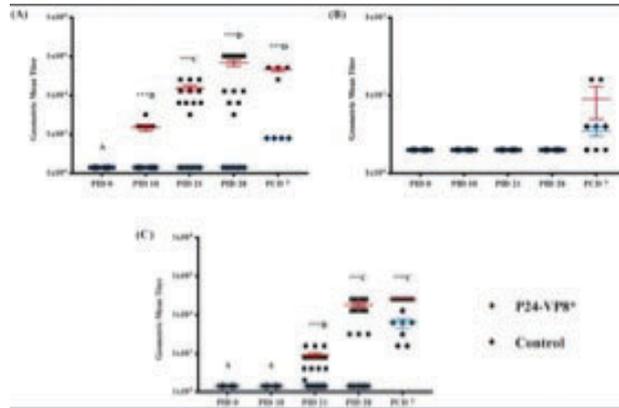
To determine the potential of the P₂₄ VLP to serve as a rotavirus vaccine candidate, the 159 amino acid VP8* protein was inserted into a P₂₄ domain surface loop. The fusion proteins self-assembled into P₂₄ VLPs, and the 24 rotavirus VP8* antigens were demonstrated by cryo-EM to be displayed on the outermost surface of the chimeric P₂₄ VLP. Mice (n=5-7) immunized intranasally with the P₂₄-VP8* or intramuscularly with Freund's adjuvant elicited significantly higher rotavirus neutralizing antibodies than the free VP8* immunized under the same conditions (IN or IM). (P >0.05), (Tan et al. *J. Virol.* 85(2):753-764. 2011).

P₂₄-VP8* VLPs were further characterized as a potential rotavirus vaccine in mouse and gnotobiotic pig challenge studies. A construct consisting of P₂₄ and the VP8* antigen from the murine rotavirus EDIM strain was constructed and tested using a murine rotavirus challenge model. Mice (n=5-7) were immunized with P₂₄-mouseVP8*, mouseVP8* alone or P₂₄-human VP8* 3 times intranasally without adjuvant. Rotavirus shedding was significantly lower in animals immunized with P₂₄-mouseVP8* than mock vaccinated or animals that received mouseVP8* only or P₂₄-humanVP8* * (P >0.05) (Tan et al. *J. Virol.* 85(2):753-764. 2011).

Additionally, an immunogenicity study was conducted in gnotobiotic pigs (n=25). A construct of P₂₄ and the VP8* antigen corresponding to human rotavirus Wa strain was tested in a gnotobiotic pig challenge model. Animals were immunized intramuscularly (IM) three times with either P₂₄-WuVP8* with aluminium hydroxide adjuvant or aluminium hydroxide alone and were challenged with human Wa rotavirus 7 days post dose three. Animals immunized with P₂₄-WuVP8* showed a significant reduction in the mean duration of diarrhea, virus shedding and significantly lower fecal cumulative consistency scores compared to adjuvant only control group (*, p < 0.05; **, p < 0.01). (Ramesh et al. *Vaccines* 7: 177 2019; doi:10.3390/vaccines7040177).



Additionally, serum samples were collected from the pigs at the times of P₂₄-VP8* vaccine administration (PID 0, PID 10, PID21 and PID 21) and VirHRV challenge (PID 27) and upon euthanasia (PCD 7). The P₂₄-VP8* vaccine was highly immunogenic in Gn pigs. It induced strong VP8*-specific serum IgG and Wa-specific virus-neutralizing antibody responses from post-inoculation day 21 to PCD 7. Comparisons between groups at the same time points were carried out using Student's t-test and significant differences are identified by *** (n = 10 – 15; p < 0.001). Tukey-Kramer HSD was used for the comparison of different time points within the same group, where different capital letters (A, B, C,D) indicate a significant difference, p < 0.01, and shared letters indicate no significant difference. These findings support further investigation of the norovirus dual nanoparticle vaccine. (Ramesh et al. *Vaccines* 7: 177 2019; doi:10.3390/vaccines7040177)



An effective norovirus culture-based neutralization assay is not available, due to the lack of an efficient cell culture system to produce human norovirus. Therefore, a surrogate neutralization assay has been developed in the field, measuring the ability of antisera to block norovirus VLP binding to host receptors. In addition to generating rotavirus neutralizing antibody, Tan et al (*J. Virol.* 86:753-764. 2011) demonstrated that anti- P₂₄-VP8* mouse sera blocked norovirus VLP binding, indicating that the insertion of the VP8* fragment did not inhibit induction of norovirus VLP binding antibodies and suggesting the P₂₄-VP8 construct could potentially serve as a single vaccine against both rotavirus and norovirus disease (P >0.05).

Our Vaccine

We hold the exclusive global license for the novel norovirus-rotavirus combination vaccine (except in China and Hong Kong) from Cincinnati Children's Hospital Medical Center, or CHMC, CHMC researchers engineered the norovirus major structural protein VP1 such that the N-terminal shell (S) and C-terminal protruding (P) domains of VP1 could be expressed as separate S₆₀ and P₂₄ virus-like particles (VLPs). Unlike norovirus VLPs composed of the intact VP1 protein or the unmodified S₆₀ fragment, our S₆₀ and P₂₄ VLPs can be expressed in *E. coli*. The researchers demonstrated that S₆₀ VLPs could be used to present foreign antigens on the surface of the S₆₀ VLP. Further, it has also demonstrated that foreign antigens could also be expressed on the surface of the P₂₄ VLP. The proposed norovirus-rotavirus vaccine is based on the P₂₄ VLP technology. Our vaccine production is based on an *E. coli* expression platform.

Development

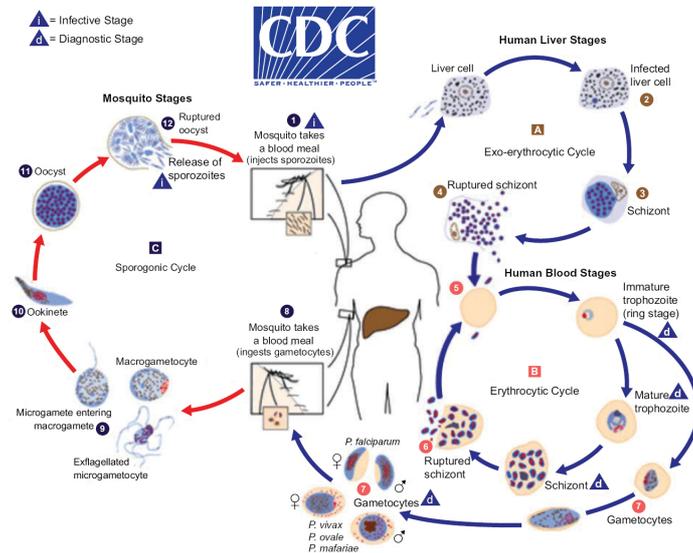
Following IND submission, if accepted, we intend to initiate our Phase I clinical trial in healthy adults ages 18 to 54. If approved, we believe our vaccine is well positioned to receive a recommendation from the CDC, ACIP, and similar international advisory groups for inclusion in vaccine programs.

BWV-302: Norovirus-malaria vaccine program

Additionally, we are currently investigating a malaria vaccine, BWV-302, utilizing our norovirus platform. The vaccine is designed to offer protection from both norovirus and malaria, infectious diseases that occur frequently together in geographic regions. The vaccine utilizes a protein identified on the surface of the plasmodium parasite being presented on the surface of the norovirus nanoparticle. Preclinical study results testing our vaccine design are expected in 2022.

Malaria

Malaria can be a deadly disease caused by protozoan parasites from the Plasmodium family, primarily spread by mosquitos (CDC, <https://wwwnc.cdc.gov/travel/diseases/malaria>). Malaria may also, at times, be transmitted through blood transfusion, organ transplantation and from mother to fetus. (CDC, <https://wwwnc.cdc.gov/travel/yellowbook/2020/travel-related-infectious-diseases/malaria>). While transmission through blood transfusion is rare in the U.S., there are no approved blood tests currently available to screen blood donation for malaria. There were approximately 219 million cases of malaria reported in 2019 globally, resulting in approximately 409,000 deaths, of which approximately 67% were children. (WHO, <https://www.who.int/news-room/fact-sheets/detail/malaria>). Symptoms of malaria normally manifest themselves within 7 to 10 days of exposure, and can at times, be mistaken for other illnesses, including influenza. Severe malaria is life-threatening and can cause multi-organ failure in adults and severe anemia, metabolic acidosis and cerebral malaria in children. The World Health Organization estimates that almost half of the global population is at risk of contracting malaria. Infants, children under 5 years of age, pregnant women and immune compromised individuals are highest risk of developing the disease. Additionally, non-immune migrants, mobile populations and travelers are at risk of developing severe disease. Neurological issues in children may continue to persist after cerebral malaria, including ataxia, palsey, speech impairment, deafness and blindness.



More than 100 species of Plasmodium have been identified. Four of the species have been recognized as naturally infecting humans, while one that infects macaques and has been identified as a cause of zoonotic malaria. In rare cases, additional species may infect humans. The primary four parasites that cause human infection are *P. falciparum*, *P. vivax*, *P. ovale* and (<https://www.cdc.gov/malaria/about/biology/index.html>). *P. knowlesi* is naturally occurring in macaques in Southeast Asia and has recently been reported as the cause zoonotic malaria, especially in Malaysia. *P. falciparum* is found world-wide, can cause severe malaria and is the predominate human malaria causing species around the world.

There is currently one vaccine for malaria, RTS,S/AS01 (MVI-GSK) targeting the falciparum CS protein, which received a positive opinion from the European Medicines Agency (EMA) for use outside of the European Union in infants 6 weeks of age and older. (<https://www.ema.europa.eu/en/news/first-malaria-vaccine-receives-positive-scientific-opinion-ema>) According to the EMA, the World Health Organization and the relevant regulatory agencies for countries outside of the European Union can authorize its use. The vaccine is currently being administered to infants and children in parts of Africa within high transmission regions. The vaccine's efficacy appears to wane after five years (Laurens MB. RTS,S/AS01 vaccine (Mosquirix™): an overview. *Hum Vaccin Immunother.* 2020;16(3):480-489. doi:10.1080/21645515.2019.1669415). The recommended course of action for preventing malaria is prevention of mosquito bites, and for those most vulnerable, a preventative treatment with sulfadoxine-pyrimethamine, especially in high transmission areas (WHO). In certain regions, the WHO has recommended the addition of amodiaquine to children under 5 years of age monthly during the high transmission season, along with sulfadoxine-pyrimethamine. Many regions employ mosquito control measures to reduce mosquito populations, however, 73 countries have reported mosquito resistance to at least 1 of the 4 most commonly used insecticides, while 23 countries have reported mosquito resistance to all of the commonly used insecticides.

Once malaria is diagnosed, the two most common treatments are Chloroquine phosphate and Artemisinin-based combination (ACT) therapies. Chloroquine is the preferred treatment, however, some malaria parasites have become resistant to chloroquine and it may not be an effective treatment. ACT is a combination of two or more drugs that work against the malaria parasite in different ways. This is usually the preferred treatment for chloroquine-resistant malaria. However, as recently reported in Nature Medicine, there is growing concern about Artemisinin - derivative resistant *P.falciparum* in the Greater Mekong subregion (Cambodia, Thailand, Vietnam, Myanmar and Laos) (<https://www.nature.com/articles/s41591-020-1005-2.pdf>). Previous occurrences of resistant strains also first appeared in the Greater Mekong subregion and then spread to other parts of the world. (<https://www.nature.com/articles/s41591-020-1005-2.pdf>).

Our Vaccine

We hold the exclusive global license for the novel norovirus-malaria combination vaccine from Cincinnati Children’s Hospital Medical Center, or CHMC, CHMC researchers engineered the norovirus major structural protein VP1 such that the N-terminal shell (S) and C-terminal protruding (P) domains of VP1 could be expressed as separate S₆₀ and P₂₄ virus-like particles (VLPs). Unlike norovirus VLPs composed of the intact VP1 protein or the unmodified S₆₀ fragment, our S₆₀ and P₂₄VLPs can be expressed in *E. coli*. The researchers, Xi Jason Jiang, Ph.D., and Ming Tan, Ph.D., demonstrated that S₆₀ VLPs could be used to present foreign antigens on the surface of the S₆₀ VLP. Further, it has also demonstrated that foreign antigens could also be expressed on the surface of the P₂₄ VLP. The proposed norovirus-malaria vaccine, P-CSαTSR is based on the P₂₄ VLP technology. Our vaccine production is based on an *E.coli* expression platform.

The circumsporozoite (CS) protein is the major surface component of *P. falciparum* sporozoites and is essential for host cell invasion. Our vaccine, developed by Jiang and Ming from CHMC, combines a small domain of the CS protein with the norovirus P₂₄ particle creating a chimeric nanoparticle capable of eliciting an immune response. A mouse immunization study was conducted using the P₂₄ particle presenting the small domain of the CS protein. M Mice (n=16) were immunized three times with the chimeric nanoparticle using aluminum hydroxide as an adjuvant, 3D7-His, 3D7-GST and PBS. Sera was collected and evaluated.

High antibody titers, as determined by ELISA, were observed after the second immunization and higher titers were observed after the third immunization. The antibodies were also shown to recognize the plasmodium falciparum 3D7 strain using immunofluorescence assays. These data demonstrate the potential of our vaccine candidate against malaria.

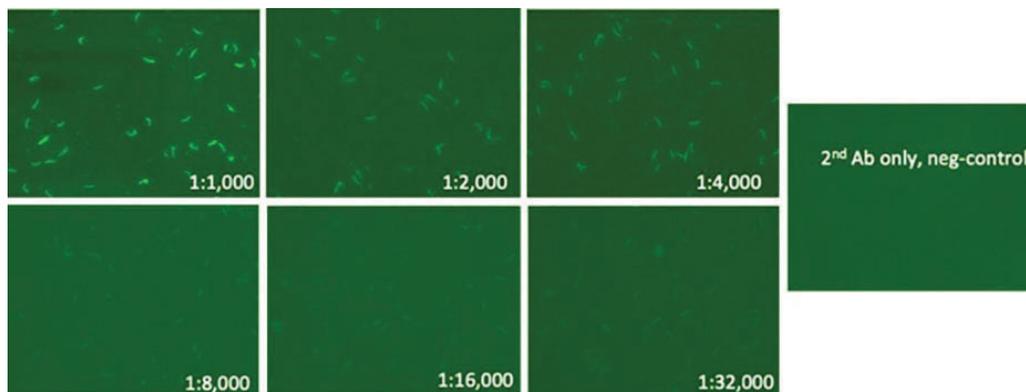
Antibody titer after 2nd immunization

	3D7-PP	3D7-His	3D7-GST
Mouse-1	25600	800	400
Mouse-2	51200	<100	400
Mouse-3	25600	400	400
Mouse-4	25600	<100	800

Antibody titer after 3rd immunization

	3D7-PP	3D7-His	3D7-GST
Mouse-1	201400	25600	12800
Mouse-2	402800	12800	12800
Mouse-3	201400	25600	12800
Mouse-4	402800	12800	12800

IFA of plasmodium sporozoites (3D7) stained with anti-P₂₄ particle presenting the small domain of the CS protein mouse sera



Development

Following IND submission, if accepted, we intend to initiate our Phase I clinical trial in healthy adults ages 18 to 54 in the first half of 2023.

Government Regulation and Product Approval

The FDA and other regulatory authorities at federal, state and local levels, as well as in foreign countries, extensively regulate, among other things, the research, development, testing, manufacture, quality control, import, export, safety, effectiveness, labeling, packaging, storage, distribution, record keeping, approval, advertising, promotion, marketing, post-approval monitoring and post-approval reporting of drugs and biologics such as those we are developing.

Small molecule drugs are subject to regulation under the Food, Drug, and Cosmetic Act, or FDCA, and biological products are additionally subject to regulation under the Public Health Service Act, or PHSA, and both are subject to additional federal, state, local and foreign statutes and regulations. We, along with third-party contractors, will be required to navigate the various preclinical, clinical and commercial approval requirements of the governing regulatory agencies of the countries in which we wish to conduct studies or seek approval or licensure of our product candidates.

United States

U. S. Biopharmaceuticals Regulation

The process required by the FDA before drug and biologic product candidates may be marketed in the United States generally involves the following:

- completion of extensive preclinical laboratory tests and animal studies performed in accordance with applicable regulations, including the FDA's Good Laboratory Practice, or GLP, regulations;
- submission to the FDA of an investigational new drug application, IND, which must become effective before clinical trials may begin;
- approval by an independent institutional review board or ethics committee at each clinical site before the trial is commenced;
- performance of adequate and well-controlled human clinical trials in accordance with FDA's Good Clinical Practice, or GCP, regulations to establish the safety and efficacy of a drug candidate and safety, purity and potency of a proposed biologic product candidate for its intended purpose;
- preparation of and submission to the FDA of a new drug application, or NDA, or biologics license application, or BLA, as applicable, after completion of all pivotal clinical trials;
- satisfactory completion of an FDA Advisory Committee review, if applicable;
- a determination by the FDA within 60 days of its receipt of an NDA or BLA to file the application for review;
- satisfactory completion of an FDA pre-approval inspection of the manufacturing facility or facilities at which the proposed product is produced to assess compliance with current Good Manufacturing Practice requirements, or cGMPs, and of selected clinical investigation sites to assess compliance with GCPs; and
- FDA review and approval of an NDA, or licensure of a BLA, to permit commercial marketing of the product for particular indications for use in the United States.

Preclinical and Clinical Development

Prior to beginning the first clinical trial with a product candidate, we must submit an IND to the FDA. An IND is a request for authorization from the FDA to administer an investigational new drug product to humans. The central focus of an IND submission is on the general investigational plan and the protocol or protocols for preclinical studies and clinical trials. The IND also includes results of animal and in vitro studies assessing the toxicology, pharmacokinetics, pharmacology and pharmacodynamic characteristics of the product, chemistry, manufacturing and controls information, and any available human data or literature to support the use of the investigational product. An IND must become effective before human clinical trials may begin. The IND automatically becomes effective 30

days after receipt by the FDA, unless the FDA, within the 30-day period, raises safety concerns or questions about the proposed clinical trial. In such a case, the IND may be placed on clinical hold and the IND sponsor and the FDA must resolve any outstanding concerns or questions before the clinical trial can begin. Submission of an IND therefore may or may not result in FDA authorization to begin a clinical trial.

Clinical trials involve the administration of the investigational product to human subjects under the supervision of qualified investigators in accordance with GCPs, which include the requirement that all research subjects provide their informed consent for their participation in any clinical study. Clinical trials are conducted under protocols detailing, among other things, the objectives of the study, the parameters to be used in monitoring safety and the effectiveness criteria to be evaluated. A separate submission to the existing IND must be made for each successive clinical trial conducted during product development and for any subsequent protocol amendments. Furthermore, an independent institutional review board for each site proposing to conduct the clinical trial must review and approve the plan for any clinical trial and its informed consent form before the clinical trial begins at that site, and must monitor the study until completed. Regulatory authorities, the institutional review board or the sponsor may suspend a clinical trial at any time on various grounds, including a finding that the subjects are being exposed to an unacceptable health risk or that the trial is unlikely to meet its stated objectives. Some studies also include oversight by an independent group of qualified experts organized by the clinical study sponsor, known as a data safety monitoring board, which provides authorization for whether or not a study may move forward at designated check points based on access to certain data from the study and may halt the clinical trial if it determines that there is an unacceptable safety risk for subjects or other grounds, such as no demonstration of efficacy.

For purposes of biopharmaceutical development, human clinical trials are typically conducted in three sequential phases that may overlap or be combined;

- *Phase 1.* The investigational product is initially introduced into patients with the target disease or condition. These studies are designed to test the safety, dosage tolerance, absorption, metabolism and distribution of the investigational product in humans, the side effects associated with increasing doses, and, if possible, to gain early evidence on effectiveness.
- *Phase 2.* The investigational product is administered to a limited patient population to evaluate the preliminary efficacy, optimal dosages and dosing schedule and to identify possible adverse side effects and safety risks.
- *Phase 3.* The investigational product is administered to an expanded patient population to further evaluate dosage, to provide statistically significant evidence of clinical efficacy and to further test for safety, generally at multiple geographically dispersed clinical trial sites. These clinical trials are intended to establish the overall risk/benefit ratio of the investigational product and to provide an adequate basis for product approval.

In some cases, the FDA may require, or companies may voluntarily pursue, additional clinical trials after a product is approved to gain more information about the product. These so-called Phase 4 studies may be made a condition to approval of the application. Concurrent with clinical trials, companies may complete additional animal studies and develop additional information about the characteristics of the product candidate and must finalize a process for manufacturing the product in commercial quantities in accordance with cGMP requirements. The manufacturing process must be capable of consistently producing quality batches of the product candidate and, among other things, must develop methods for testing the identity, strength, quality and purity of the final product, or for biologics, the safety, purity and potency. Additionally, appropriate packaging must be selected and tested and stability studies must be conducted to demonstrate that the product candidate does not undergo unacceptable deterioration over its shelf life.

During all phases of clinical development, regulatory agencies require extensive monitoring and auditing of all clinical activities, clinical data, and clinical study investigators. The FDA or the sponsor or its data safety monitoring board may suspend a clinical study at any time on various grounds, including a finding that the research patients or patients are being exposed to an unacceptable health risk. Similarly, an institutional review board can suspend or terminate approval of a clinical study at its institution if the clinical study is not being conducted in accordance with the institutional review board's requirements or if the biological product candidate has been associated with unexpected serious harm to patients. There are also requirements governing the reporting of ongoing clinical trials and completed clinical trial results to public registries. Sponsors of clinical trials of FDA-regulated products are required to register and disclose certain clinical trial information, which is publicly available at www.clinicaltrials.gov.

NDA/BLA Submission and Review

Assuming successful completion of all required testing in accordance with all applicable regulatory requirements, the results of product development, nonclinical studies and clinical trials are submitted to the FDA as part of an NDA or BLA, as applicable, requesting approval to market the product for one or more indications. The application must include all relevant data available from pertinent preclinical studies and clinical trials, including negative or ambiguous results as well as positive findings, together with detailed information relating to the product's chemistry, manufacturing, controls, and proposed labeling, among other things. The submission of an application requires payment of a substantial application user fee to the FDA, unless a waiver or exemption applies. The FDA has sixty days from the applicant's submission to either issue a refusal to file letter or accept the application for filing, indicating that it is sufficiently complete to permit substantive review.

Once an NDA or BLA has been accepted for filing, the FDA's goal is to review standard applications within 10 months after it accepts the application for filing, or, if the application qualifies for priority review, six months after the FDA accepts the application for filing. In both standard and priority reviews, the review process is often significantly extended by FDA requests for additional information or clarification. The FDA reviews an NDA to determine whether a drug is safe and effective for its intended use and a BLA to determine whether a biologic is safe, pure and potent. FDA also reviews whether the facility in which the product is manufactured, processed, packed or held meets standards designed to assure and preserve the product's identity, safety, strength, quality, potency and purity. The FDA may convene an advisory committee to provide clinical insight on application review questions. Before approving an NDA or BLA, the FDA will typically inspect the facility or facilities where the product is manufactured. The FDA will not approve an application unless it determines that the manufacturing processes and facilities are in compliance with cGMP requirements and adequate to assure consistent production of the product within required specifications. Additionally, before approving an application, the FDA will typically inspect one or more clinical sites to assure compliance with GCPs. If the FDA determines that the application, manufacturing process or manufacturing facilities are not acceptable, it will outline the deficiencies in the submission and often will request additional testing or information. Notwithstanding the submission of any requested additional information, the FDA ultimately may decide that the application does not satisfy the regulatory criteria for approval.

After the FDA evaluates an application and conducts inspections of manufacturing facilities where the investigational product and/or its drug substance will be manufactured, the FDA may issue an approval letter or a Complete Response letter. An approval letter authorizes commercial marketing of the product with specific prescribing information for specific indications. A Complete Response letter will describe all of the deficiencies that the FDA has identified in the application, except that where the FDA determines that the data supporting the application are inadequate to support approval, the FDA may issue the Complete Response letter without first conducting required inspections, testing submitted product lots and/or reviewing proposed labeling. In issuing the Complete Response letter, the FDA may recommend actions that the applicant might take to place the application in condition for approval, including requests for additional information or clarification, which may include the potential requirement for additional clinical studies. The FDA may delay or refuse approval of an application if applicable regulatory criteria are not satisfied, require additional testing or information and/or require post-marketing testing and surveillance to monitor safety or efficacy of a product.

If regulatory approval of a product is granted, such approval will be granted for particular indications and may entail limitations on the indicated uses for which such product may be marketed. For example, the FDA may approve the application with a risk evaluation and mitigation strategy, or REMS, to ensure the benefits of the product outweigh its risks. A REMS is a safety strategy to manage a known or potential serious risk associated with a product and to enable patients to have continued access to such medicines by managing their safe use, and could include medication guides, physician communication plans, or elements to assure safe use, such as restricted distribution methods, patient registries and other risk minimization tools. The FDA also may condition approval on, among other things, changes to proposed labeling or the development of adequate controls and specifications. Once approved, the FDA may withdraw the product approval if compliance with pre- and post-marketing requirements is not maintained or if problems occur after the product reaches the marketplace. The FDA may require one or more Phase 4 post-market studies and surveillance to further assess and monitor the product's safety and effectiveness after commercialization, and may limit further marketing of the product based on the results of these post-marketing studies.

Expedited Development and Review Programs

The FDA offers a number of expedited development and review programs for qualifying product candidates. The fast track program is intended to expedite or facilitate the process for reviewing new products that meet certain criteria. Specifically, new products are eligible for fast track designation if they are intended to treat a serious or life-threatening disease or condition and demonstrate the potential to address unmet medical needs for the disease or condition. Fast track designation applies to the combination of the product and the specific indication for which it is being studied. The sponsor of a fast track product has opportunities for frequent interactions with the review team during product development and, once an NDA or BLA is submitted, the product may be eligible for priority review. A fast track product may also be eligible for rolling review, where the FDA may consider for review sections of the NDA or BLA on a rolling basis before the complete application is submitted, if the sponsor provides a schedule for the submission of the sections of the application, the FDA agrees to accept sections of the application and determines that the schedule is acceptable, and the sponsor pays any required user fees upon submission of the first section of the application.

A product intended to treat a serious or life-threatening disease or condition may also be eligible for breakthrough therapy designation to expedite its development and review. A product can receive breakthrough therapy designation if preliminary clinical evidence indicates that the product, alone or in combination with one or more other drugs or biologics, may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development. The designation includes all of the fast track program features, as well as more intensive FDA interaction and guidance beginning as early as Phase 1 and an organizational commitment to expedite the development and review of the product, including involvement of senior managers.

Any marketing application for a drug or biologic submitted to the FDA for approval, including a product with a fast track designation and/or breakthrough therapy designation, may be eligible for other types of FDA programs intended to expedite the FDA review and approval process, such as priority review and accelerated approval. A product is eligible for priority review if it has the potential to provide a significant improvement in the treatment, diagnosis or prevention of a serious disease or condition. Priority review designation means the FDA's goal is to take action on the marketing application within six months of the 60-day filing date.

Additionally, products studied for their safety and effectiveness in treating serious or life-threatening diseases or conditions may receive accelerated approval upon a determination that the product has an effect on a surrogate endpoint that is reasonably likely to predict clinical benefit, or on a clinical endpoint that can be measured earlier than irreversible morbidity or mortality, that is reasonably likely to predict an effect on irreversible morbidity or mortality or other clinical benefit, taking into account the severity, rarity, or prevalence of the condition and the availability or lack of alternative treatments. As a condition of accelerated approval, the FDA will generally require the sponsor to perform adequate and well-controlled post-marketing clinical studies to verify and describe the anticipated effect on irreversible morbidity or mortality or other clinical benefit. In addition, the FDA currently requires as a condition for accelerated approval pre-approval of promotional materials, which could adversely impact the timing of the commercial launch of the product.

Fast track designation, breakthrough therapy designation and priority review do not change the standards for approval but may expedite the development or approval process. Even if a product qualifies for one or more of these programs, the FDA may later decide that the product no longer meets the conditions for qualification or decide that the time period for FDA review or approval will not be shortened.

Orphan Drug Designation

Under the Orphan Drug Act, the FDA may grant orphan designation to a drug or biologic intended to treat a rare disease or condition, which is a disease or condition that affects fewer than 200,000 individuals in the United States, or more than 200,000 individuals in the United States for which there is no reasonable expectation that the cost of developing and making available in the United States a drug or biologic for this type of disease or condition will be recovered from sales in the United States for that drug or biologic. Orphan drug designation must be requested before submitting an NDA or BLA. After the FDA grants orphan drug designation, the generic identity of the therapeutic agent and its potential orphan use are disclosed publicly by the FDA. The orphan drug designation does not convey any advantage in, or shorten the duration of, the regulatory review or approval process.

If a product that has orphan drug designation subsequently receives the first FDA approval for the disease for which it has such designation, the product is entitled to orphan drug exclusive approval (or exclusivity), which means that the FDA may not approve any other applications, including a full NDA or BLA, to market the same drug or biologic for the same indication for seven years, except in limited circumstances, such as a showing of clinical superiority to the product with orphan drug exclusivity or if the FDA finds that the holder of the orphan drug exclusivity has not shown that it can assure the availability of sufficient quantities of the orphan drug to meet the needs of patients with the disease or condition for which the drug was designated. Orphan drug exclusivity does not prevent the FDA from approving a different drug or biologic for the same disease or condition, or the same drug or biologic for a different disease or condition. Among the other benefits of orphan drug designation are tax credits for certain research and a waiver of the NDA or BLA application fee.

A designated orphan drug may not receive orphan drug exclusivity if it is approved for a use that is broader than the indication for which it received orphan designation. In addition, exclusive marketing rights in the United States may be lost if the FDA later determines that the request for designation was materially defective.

Post-Approval Requirements

Any products manufactured or distributed by us pursuant to FDA approvals are subject to pervasive and continuing regulation by the FDA, including, among other things, requirements relating to record-keeping, reporting of adverse experiences, periodic reporting, product sampling and distribution, and advertising and promotion of the product. After approval, most changes to the approved product, such as adding new indications or other labeling claims, are subject to prior FDA review and approval. There also are continuing user fee requirements, under which the FDA assesses an annual program fee for each product identified in an approved NDA or BLA. Biopharmaceutical manufacturers and their subcontractors are required to register their establishments with the FDA and certain state agencies, and are subject to periodic unannounced inspections by the FDA and certain state agencies for compliance with cGMPs, which impose certain procedural and documentation requirements upon us and our third-party manufacturers. Changes to the manufacturing process are strictly regulated, and, depending on the significance of the change, may require prior FDA approval before being implemented. FDA regulations also require investigation and correction of any deviations from cGMPs and impose reporting requirements upon us and any third-party manufacturers that we may decide to use. Accordingly, manufacturers must continue to expend time, money and effort in the area of production and quality control to maintain compliance with cGMPs and other aspects of regulatory compliance.

The FDA may withdraw approval if compliance with regulatory requirements and standards is not maintained or if problems occur after the product reaches the market. Later discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, or with manufacturing processes, or failure to comply with regulatory requirements, may result in revisions to the approved labeling to add new safety information; imposition of post-market studies or clinical studies to assess new safety risks; or imposition of distribution restrictions or other restrictions under a REMS program. Other potential consequences include, among other things:

- restrictions on the marketing or manufacturing of a product, complete withdrawal of the product from the market or product recalls;
- fines, warning or untitled letters or holds on post-approval clinical studies;
- refusal of the FDA to approve pending applications or supplements to approved applications, or suspension or revocation of existing product approvals;
- product seizure or detention, or refusal of the FDA to permit the import or export of products;
- consent decrees, corporate integrity agreements, debarment or exclusion from federal healthcare programs;
- mandated modification of promotional materials and labeling and the issuance of corrective information;
- the issuance of safety alerts, Dear Healthcare Provider letters, press releases and other communications containing warnings or other safety information about the product; or
- injunctions or the imposition of civil or criminal penalties.

The FDA closely regulates the marketing, labeling, advertising and promotion of biopharmaceutical products. A company can make only those claims relating to safety and efficacy, purity and potency that are approved by the FDA and in accordance with the provisions of the approved label. However, companies may share truthful and not misleading information that is otherwise consistent with a product's FDA approved labeling. The FDA and other agencies actively enforce the laws and regulations prohibiting the promotion of off-label uses. Failure to comply with these requirements can result in, among other things, adverse publicity, warning letters, corrective advertising and potential civil and criminal penalties. Physicians may prescribe legally available products for uses that are not described in the product's labeling and that differ from those tested by us and approved by the FDA. Such off-label uses are common across medical specialties. Physicians may believe that such off-label uses are the best treatment for many patients in varied circumstances. The FDA does not regulate the behavior of physicians in their choice of treatments. The FDA does, however, restrict manufacturer's communications on the subject of off-label use of their products.

U.S. Market Exclusivity

A biological product can obtain pediatric market exclusivity in the U.S., which, if granted, adds six months to existing exclusivity periods, including some regulatory exclusivity periods tied to patent terms. This six-month exclusivity, which runs from the end of other exclusivity protection or patent term, may be granted based on the voluntary completion of a pediatric study in accordance with an FDA-issued "Written Request" for such a study.

The Biologics Price Competition and Innovation Act of 2009, or BPCIA, created an abbreviated approval pathway for biological products shown to be biosimilar to, or interchangeable with, an FDA-licensed reference biological product. This amendment to the PHSA attempts to minimize duplicative testing.

Biosimilarity, which requires that there be no clinically meaningful differences between the biological product and the reference product in terms of safety, purity, and potency, can be shown through analytical studies, animal studies, and a clinical trial or trials. Interchangeability requires that a product is biosimilar to the reference product and the product must demonstrate that it can be expected to produce the same clinical results as the reference product and, for products administered multiple times, the biologic and the reference biologic may be interchanged after one has been previously administered without increasing safety risks or risks of diminished efficacy relative to exclusive use of the reference biologic. However, complexities associated with the larger, and often more complex, structure of biological products, as well as the process by which such products are manufactured, pose significant hurdles to implementation that are still being worked out by the FDA.

The FDA will not accept an application for a biosimilar or interchangeable product based on the reference biological product until four years after the date of first licensure of the reference product, and the FDA will not approve an application for a biosimilar or interchangeable product based on the reference biological product until 12 years after the date of first licensure of the reference product. "First licensure" typically means the initial date the particular product at issue was licensed in the U.S. Date of first licensure does not include the date of licensure of (and a new period of exclusivity is not available for) a biological product if the licensure is for a supplement for the biological product or for a subsequent application by the same sponsor or manufacturer of the biological product (or licensor, predecessor in interest, or other related entity) for a change (not including a modification to the structure of the biological product) that results in a new indication, route of administration, dosing schedule, dosage form, delivery system, delivery device or strength, or for a modification to the structure of the biological product that does not result in a change in safety, purity, or potency.

The BPCIA is complex and continues to be interpreted and implemented by the FDA. In addition, government proposals have sought to reduce the 12-year reference product exclusivity period. Other aspects of the BPCIA, some of which may impact the BPCIA exclusivity provisions, have also been the subject of recent litigation. As a result, the ultimate implementation and impact of the BPCIA is subject to significant uncertainty.

Pediatric Study Plan and Pediatric Exclusivity

Under the Pediatric Research Equity Act, as amended, or the PREA, certain NDAs and certain NDA supplements must contain data that can be used to assess the safety and efficacy of the product candidate for the claimed indications in all relevant pediatric subpopulations and to support dosing and administration for each pediatric subpopulation for which the product is safe and effective. The FDA may grant deferrals for submission of pediatric data or full or partial waivers. The PREA requires that a sponsor who is planning to submit a marketing application

for a product candidate that includes a new active ingredient, new indication, new dosage form, new dosing regimen or new route of administration submit an initial Pediatric Study Plan, or the PSP, within 60 days of an end-of-phase 2 meeting or, if there is no such meeting, as early as practicable before the initiation of the phase 3 or phase 2/3 study. The initial PSP must include an outline of the pediatric study or studies that the sponsor plans to conduct, including study objectives and design, age groups, relevant endpoints and statistical approach, or a justification for not including such detailed information, and any request for a deferral of pediatric assessments or a full or partial waiver of the requirement to provide data from pediatric studies along with supporting information. The FDA and the sponsor must reach an agreement on the PSP. A sponsor can submit amendments to an agreed-upon initial PSP at any time if changes to the pediatric plan need to be considered based on data collected from preclinical studies, early phase clinical trials and/or other clinical development programs. Unless otherwise required by regulation, the PREA does not apply to a drug for an indication for which orphan designation has been granted, except that the PREA will apply to an original NDA for a new active ingredient that is orphan-designated if the drug is a molecularly targeted cancer product intended for the treatment of an adult cancer and is directed at a molecular target that the FDA determines to be substantially relevant to the growth or progression of a pediatric cancer.

A drug can also obtain pediatric market exclusivity in the United States. Pediatric exclusivity, if granted, adds six months to existing exclusivity periods and patent terms. This six-month exclusivity, which runs from the end of other exclusivity protection or patent term, may be granted based on the voluntary completion of a pediatric study in accordance with an FDA-issued “Written Request” for such a study.

Patent Term Restoration and Extension

Depending upon the timing, duration and specifics of the FDA approval of our product candidates, some of our U.S. patents may be eligible for limited patent term extension. The provisions of the Drug Price Competition and Patent Term Restoration Act, informally known as the Hatch-Waxman Act, permit a patent restoration term of up to five years as compensation for patent term lost during product development and the FDA regulatory review process. However, patent term restoration cannot extend the remaining term of a patent beyond a total of 14 years from the product’s approval date. The patent term restoration period is generally one-half the time between the effective date of an IND and the submission date of a BLA plus the time between the submission date of a BLA and the approval of that application. Only one patent applicable to an approved product is eligible for the extension and the application for the extension must be submitted prior to the expiration of the patent. The USPTO, in consultation with the FDA, reviews and approves the application for any patent term extension or restoration. In the future, we may apply for restoration of patent term for one of our currently owned or licensed patents to add patent life beyond its current expiration date, depending on the expected length of the clinical trials and other factors involved in the filing of the relevant BLA.

Many other countries also provide for patent term extensions or similar extensions of patent protection for biologic products. For example, in Japan, it may be possible to extend the patent term for up to five years and in Europe, it may be possible to obtain a supplementary patent certificate that would effectively extend patent protection for up to five years.

Federal and State Fraud and Abuse, Data Privacy and Security, and Transparency Laws and Regulations

In addition to FDA restrictions on marketing of pharmaceutical products, federal and state healthcare laws and regulations restrict business practices in the biopharmaceutical industry. These laws may impact, among other things, our current and future business operations, including our clinical research activities, and proposed sales, marketing and education programs and constrain the business or financial arrangements and relationships with healthcare providers and other parties through which we market, sell and distribute our products for which we obtain marketing approval. These laws include anti-kickback and false claims laws and regulations, data privacy and security, and transparency laws and regulations, including, without limitation, those laws described below.

The U.S. federal Anti-Kickback Statute prohibits any person or entity from, among other things, knowingly and willfully offering, paying, soliciting or receiving remuneration to induce or in return for purchasing, leasing, ordering or arranging for or recommending the purchase, lease or order of any item or service reimbursable under Medicare, Medicaid or other federal healthcare programs. The term “remuneration” has been broadly interpreted to include anything of value. The U.S. federal Anti-Kickback Statute has been interpreted to apply to arrangements between pharmaceutical manufacturers on the one hand and prescribers, purchasers and formulary managers on the

other. Although there are a number of statutory exceptions and regulatory safe harbors protecting some common activities from prosecution, the exceptions and safe harbors are drawn narrowly. Practices that involve remuneration that may be alleged to be intended to induce prescribing, purchases or recommendations may be subject to scrutiny if they do not qualify for an exception or safe harbor. Several courts have interpreted the statute's intent requirement to mean that if any one purpose of an arrangement involving remuneration is to induce referrals of federal healthcare covered business, the statute has been violated.

A person or entity does not need to have actual knowledge of this statute or specific intent to violate it in order to have committed a violation. In addition, the government may assert that a claim including items or services resulting from a violation of the U.S. federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the federal civil False Claims Act or the civil monetary penalties laws.

Federal civil and criminal false claims laws and civil monetary penalties laws, including the federal civil False Claims Act, which can be enforced by individuals through civil whistleblower and qui tam actions, prohibit any person or entity from, among other things, knowingly presenting, or causing to be presented, a false claim for payment to the federal government or knowingly making, using or causing to be made or used a false record or statement material to a false or fraudulent claim to the federal government. A claim includes "any request or demand" for money or property presented to the U.S. government. Several pharmaceutical and other healthcare companies have been prosecuted under these laws for allegedly providing free product to customers with the expectation that the customers would bill federal programs for the product. Other companies have been prosecuted for causing false claims to be submitted because of the companies' marketing of products for unapproved, and thus non-reimbursable, uses.

The federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, created additional federal criminal statutes that prohibit, among other things, knowingly and willfully executing a scheme to defraud any healthcare benefit program, including private third-party payors and knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false, fictitious or fraudulent statement in connection with the delivery of or payment for healthcare benefits, items or services. Also, many states have similar fraud and abuse statutes or regulations that apply to items and services reimbursed under Medicaid and other state programs, or, in several states, apply regardless of the payor.

In addition, we may be subject to data privacy and security regulation by both the federal government and the states in which we conduct our business. HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act, or HITECH, and their respective implementing regulations, impose specified requirements on certain types of individuals and entities relating to the privacy, security and transmission of individually identifiable health information. Among other things, HITECH makes HIPAA's security standards directly applicable to "business associates," defined as independent contractors or agents of covered entities, which include certain healthcare providers, healthcare clearinghouses and health plans, that create, receive, maintain or transmit individually identifiable health information in connection with providing a service for or on behalf of a covered entity. HITECH also increased the civil and criminal penalties that may be imposed against covered entities, business associates and possibly other persons, and gave state attorneys general new authority to file civil actions for damages or injunctions in federal courts to enforce HIPAA and seek attorney's fees and costs associated with pursuing federal civil actions. In addition, state laws govern the privacy and security of health information in certain circumstances, many of which are not pre-empted by HIPAA, differ from each other in significant ways and may not have the same effect, thus complicating compliance efforts.

The federal Physician Payments Sunshine Act requires certain manufacturers of drugs, devices, biologics and medical supplies for which payment is available under Medicare, Medicaid or the Children's Health Insurance Program, with specific exceptions, to report annually to the Centers for Medicare & Medicaid Services, or CMS, information related to payments or other transfers of value made to physicians and teaching hospitals, and applicable manufacturers and applicable group purchasing organizations to report annually to CMS ownership and investment interests held by physicians and their immediate family members.

We may also be subject to state laws that require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government, state laws that require drug manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers, marketing expenditures or drug pricing, and state and local laws that require the registration of pharmaceutical sales representatives.

Because of the breadth of these laws and the narrowness of available statutory exceptions and regulatory safe harbors, it is possible that some of our business activities could be subject to challenge under one or more of such laws. If our operations are found to be in violation of any of the federal and state laws described above or any other governmental regulations that apply to us, we may be subject to significant criminal, civil and administrative penalties including damages, fines, imprisonment, disgorgement, additional reporting requirements and oversight if we become subject to a corporate integrity agreement or similar agreement to resolve allegations of non-compliance with these laws, contractual damages, reputational harm, diminished profits and future earnings, disgorgement, exclusion from participation in government healthcare programs and the curtailment or restructuring of our operations, any of which could adversely affect our ability to operate our business and our results of operations. To the extent that any of our products are sold in a foreign country, we may be subject to similar foreign laws and regulations, which may include, for instance, applicable post-marketing requirements, including safety surveillance, anti-fraud and abuse laws, implementation of corporate compliance programs, reporting of payments or transfers of value to healthcare professionals, and additional data privacy and security requirements.

Healthcare Reform

Coverage and Reimbursement

The future commercial success of our product candidates, if approved, will depend in part on the extent to which third-party payors, such as governmental payor programs at the federal and state levels, including Medicare and Medicaid, private health insurers and other third-party payors, provide coverage of and establish adequate reimbursement levels for our product candidates. Third-party payors generally decide which products they will pay for and establish reimbursement levels for those products. In particular, in the United States, no uniform policy for coverage and reimbursement exists. Private health insurers and other third-party payors often provide coverage and reimbursement for products based on the level at which the government, through the Medicare program, provides coverage and reimbursement for such products, but also on their own methods and approval process apart from Medicare determinations. Therefore, coverage and reimbursement can differ significantly from payor to payor.

In the United States, the European Union, or EU, and other potentially significant markets for our product candidates, government authorities and third-party payors are increasingly attempting to limit or regulate the price of products, particularly for new and innovative products, which often has resulted in average selling prices lower than they would otherwise be. Further, the increased emphasis on managed healthcare in the United States and on country and regional pricing and reimbursement controls in the EU will put additional pressure on product pricing, reimbursement and usage. These pressures can arise from rules and practices of managed care groups, judicial decisions and laws and regulations related to Medicare, Medicaid and healthcare reform, pharmaceutical coverage and reimbursement policies and pricing in general.

Third-party payors are increasingly imposing additional requirements and restrictions on coverage and limiting reimbursement levels for products. For example, federal and state governments reimburse products at varying rates generally below average wholesale price. These restrictions and limitations influence the purchase of products. Third-party payors may limit coverage to specific products on an approved list, or formulary, which might not include all of the FDA-approved products for a particular indication. Similarly, because certain of our product candidates are physician-administered, separate reimbursement for the product itself may or may not be available. Instead, the administering physician may only be reimbursed for providing the treatment or procedure in which our product is used. Third-party payors are increasingly challenging the price and examining the medical necessity and cost-effectiveness of products, in addition to their safety and efficacy. We may need to conduct expensive pharmacoeconomic studies in order to demonstrate the medical necessity and cost-effectiveness of our product candidates, in addition to the costs required to obtain the FDA approvals. Our product candidates may not be considered medically necessary or cost-effective. A payor's decision to provide coverage for a product does not imply that an adequate reimbursement rate will be approved. Adequate third-party payor reimbursement may not be available to enable us to realize an appropriate return on our investment in product development. Legislative proposals to reform healthcare or reduce costs under government insurance programs may result in lower reimbursement for our product candidates, if approved, or exclusion of our product candidates from coverage and reimbursement. The cost containment measures that third-party payors and providers are instituting and any healthcare reform could significantly reduce our revenue from the sale of any approved product candidates.

The United States and some foreign jurisdictions are considering enacting or have enacted a number of additional legislative and regulatory proposals to change the healthcare system in ways that could affect our ability to sell our product candidates profitably, if approved. Among policy makers and payors in the United States and elsewhere, there is significant interest in promoting changes in healthcare systems with the stated goals of containing healthcare costs, improving quality and expanding access. In the United States, the pharmaceutical industry has been a particular focus of these efforts, which include major legislative initiatives to reduce the cost of care through changes in the healthcare system, including limits on the pricing, coverage, and reimbursement of pharmaceutical and biopharmaceutical products, especially under government-funded healthcare programs, and increased governmental control of drug pricing.

There have been several U.S. government initiatives over the past few years to fund and incentivize certain comparative effectiveness research, including creation of the Patient-Centered Outcomes Research Institute under the ACA. It is also possible that comparative effectiveness research demonstrating benefits in a competitor's product could adversely affect the sales of our product candidates.

The ACA became law in March 2010 and substantially changed the way healthcare is financed by third-party payors, and significantly impacts the U.S. pharmaceutical industry. Among other measures that may have an impact on our business, the ACA established an annual, nondeductible fee on any entity that manufactures or imports specified branded prescription drugs and biologic agents; a new Medicare Part D coverage gap discount program; and a new formula that increased the rebates a manufacturer must pay under the Medicaid Drug Rebate Program. Additionally, the ACA extended manufacturers' Medicaid rebate liability, expands eligibility criteria for Medicaid programs, and expanded entities eligible for discounts under the Public Health Service Act. At this time, we are unsure of the full impact that the ACA will have on our business.

Since its enactment, there have been judicial and Congressional challenges to certain aspects of the ACA, as well as recent efforts by the Trump administration to repeal or replace certain aspects of the ACA, and we expect such challenges and amendments to continue. Since January 2017, President Trump has signed two Executive Orders and other directives designed to delay the implementation of certain ACA provisions or otherwise circumvent requirements for health insurance mandated by the ACA. Concurrently, Congress has considered legislation that would repeal or repeal and replace all or part of the ACA. While Congress has not passed comprehensive repeal legislation, two bills affecting the implementation of certain taxes under the ACA have been signed into law. The Tax Cuts and Jobs Act of 2017, or Tax Act, includes a provision that repealed, effective January 1, 2019, the tax-based shared responsibility payment imposed by the ACA on certain individuals who fail to maintain qualifying health coverage for all or part of a year that is commonly referred to as the "individual mandate." On January 22, 2018, President Trump signed a continuing resolution on appropriations for fiscal year 2018 that delayed the implementation of certain ACA-mandated fees, including the so-called "Cadillac" tax on certain high cost employer-sponsored insurance plans, the annual fee imposed on certain health insurance providers based on market share, and the medical device excise tax on nonexempt medical devices. The Bipartisan Budget Act of 2018, or the BBA, among other things, amended the ACA, effective January 1, 2019, to increase from 50% to 70% the point-of-sale discount that is owed by pharmaceutical manufacturers who participate in Medicare Part D and to close the coverage gap in most Medicare drug plans, commonly referred to as the "donut hole." In July 2018, CMS published a final rule permitting further collections and payments to and from certain ACA qualified health plans and health insurance issuers under the ACA adjustment program in response to the outcome of federal district court litigation regarding the method CMS uses to determine this risk adjustment. In December 2018, a U.S. District Court Judge in the Northern District of Texas, or Texas District Court Judge, ruled that the individual mandate is a critical and inseparable feature of the ACA, and therefore, because it was repealed as part of the Tax Act, the remaining provisions of the ACA are invalid as well. While the Texas District Court Judge, as well as the Trump administration and CMS, have stated that the ruling will have no immediate effect, it is unclear how this decision, subsequent appeals, and other efforts to repeal and replace the ACA will impact the ACA.

In addition, other legislative changes have been proposed and adopted since the ACA was enacted. In August 2011, the President signed into law the Budget Control Act of 2011, as amended, which, among other things, included aggregate reductions to Medicare payments to providers of 2% per fiscal year, which began in 2013 and, following passage of subsequent legislation, including the BBA, will continue through 2027 unless additional Congressional action is taken. In January 2013, the American Taxpayer Relief Act of 2012 was enacted which, among other things, reduced Medicare payments to several types of providers and increased the statute of limitations period for the government to recover overpayments to providers from three to five years.

Further, there has been increasing legislative and enforcement interest in the United States with respect to drug pricing practices. Specifically, there have been several recent U.S. Congressional inquiries and proposed and enacted federal and state legislation designed to, among other things, bring more transparency to drug pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for drugs. At the federal level, the Trump administration's budget proposal for fiscal year 2019 contains further drug price control measures that could be enacted during the 2019 budget process or in other future legislation, including, for example, measures to permit Medicare Part D plans to negotiate the price of certain drugs under Medicare Part B, to allow some states to negotiate drug prices under Medicaid, and to eliminate cost sharing for generic drugs for low-income patients. Additionally, the Trump administration released a "Blueprint" to lower drug prices and reduce out of pocket costs of drugs that contains additional proposals to increase manufacturer competition, increase the negotiating power of certain federal healthcare programs, incentivize manufacturers to lower the list price of their products and reduce the out of pocket costs of drug products paid by consumers. The U.S. Department of Health and Human Services, or HHS, has already started the process of soliciting feedback on some of these measures and is implementing others under its existing authority. For example, in September 2018, CMS announced that it will allow Medicare Advantage plans the option to use step therapy for Part B drugs beginning January 1, 2019. On January 31, 2019, the HHS Office of Inspector General proposed modifications to U.S. federal Anti-Kickback Statute safe harbors which, among other things, may affect rebates paid by manufacturers to Medicare Part D plans, the purpose of which is to further reduce the cost of drug products to consumers. In addition, CMS issued a final rule, effective on July 9, 2019, that requires direct-to-consumer television advertisements of prescription drugs and biological products, for which payment is available through or under Medicare or Medicaid, to include in the advertisement the Wholesale Acquisition Cost, or list price, of that drug or biological product if it is equal to or greater than \$35 for a monthly supply or usual course of treatment. Prescription drugs and biological products that are in violation of these requirements will be included on a public list. Congress and the Trump administration have each indicated that it will continue to seek new legislative and/or administrative measures to control drug costs. At the state level, legislatures have increasingly passed legislation and implemented regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing. In addition, regional healthcare authorities and individual hospitals are increasingly using bidding procedures to determine which drugs and suppliers will be included in their healthcare programs. Furthermore, there has been increased interest by third party payors and governmental authorities in reference pricing systems and publication of discounts and list prices. These measures could reduce future demand for our products or put pressure on our pricing.

Additionally, in May 2018, the Trickett Wendler, Frank Mongiello, Jordan McLinn, and Matthew Bellina Right to Try Act of 2017, or the Right to Try Act, was signed into law. The law, among other things, provides a federal framework for certain patients to access certain investigational new drug products that have completed a Phase 1 clinical trial and that are undergoing investigation for FDA approval. Under certain circumstances, eligible patients can seek treatment without enrolling in clinical trials and without obtaining FDA permission under the FDA expanded access program. There is no obligation for a drug manufacturer to make its drug products available to eligible patients as a result of the Right to Try Act.

Foreign Regulation

In order to market any product outside of the United States, we would need to comply with numerous and varying regulatory requirements of other countries regarding safety and efficacy and governing, among other things, clinical trials, marketing authorization, commercial sales and distribution of our product candidates. For example, in the EU, we must obtain authorization of a clinical trial application, or CTA, in each member state in which we intend to conduct a clinical trial. Whether or not we obtain FDA approval for a drug, we would need to obtain the necessary approvals by the comparable regulatory authorities of foreign countries before we can commence clinical trials or marketing of the drug in those countries. The approval process varies from country to country and can involve additional product testing and additional administrative review periods. The time required to obtain approval in other countries might differ from and be longer than that required to obtain FDA approval. Regulatory approval in one country does not ensure regulatory approval in another, but a failure or delay in obtaining regulatory approval in one country may negatively impact the regulatory process in others.

Further, some countries outside of the United States, including the EU member states, Switzerland and the United Kingdom, have also adopted data protection laws and regulations, which impose significant compliance obligations. In the EU, the collection and use of personal health data is governed by the provisions of the General Data Protection Regulation, or GDPR. The GDPR became effective on May 25, 2018, repealing its predecessor directive and increasing responsibility and liability of pharmaceutical companies in relation to the processing of personal data of EU subjects. The GDPR, together with the national legislation of the EU member states governing the processing of personal data, impose strict obligations and restrictions on the ability to process personal data, including health data from clinical trials and adverse event reporting. In particular, these obligations and restrictions concern potentially burdensome documentation requirements, granting certain rights to individuals to control how we collect, use, disclose, retain and process information about them, the information provided to the individuals, the transfer of personal data out of the EU, security breach notifications, and security and confidentiality of the personal data. The processing of sensitive personal data, such as physical health condition, may impose heightened compliance burdens under the GDPR and is a topic of active interest among foreign regulators. In addition, the GDPR provides for more robust regulatory enforcement and fines of up to €20 million or 4% of the annual global revenue of the noncompliant company, whichever is greater. Data protection authorities from the different EU member states may interpret the GDPR and national laws differently and impose additional requirements, which add to the complexity of processing personal data in the EU. Guidance on implementation and compliance practices are often updated or otherwise revised.

European Union

European Union Coverage Reimbursement and Pricing

In the European Union, pricing and reimbursement schemes vary widely from country to country. Some countries provide that drug products may be marketed only after a reimbursement price has been agreed. Some countries may require the completion of additional studies that compare the cost-effectiveness of a particular drug candidate to currently available therapies, or so called health technology assessments, in order to obtain reimbursement or pricing approval. For example, the European Union provides options for its member states to restrict the range of drug products for which their national health insurance systems provide reimbursement and to control the prices of medicinal products for human use. European Union member states may approve a specific price for a drug product or may instead adopt a system of direct or indirect controls on the profitability of the company.

EU Drug regulation

In order to market any product outside of the United States, we would need to comply with numerous and varying regulatory requirements of other countries and jurisdictions regarding quality, safety and efficacy and governing, among other things, clinical trials, marketing authorization, commercial sales and distribution of our products. Whether or not we obtain FDA approval for a product, we would need to obtain the necessary approvals by the comparable foreign regulatory authorities before we can commence clinical trials or marketing of the product in foreign countries and jurisdictions such as in China and Japan. Although many of the issues discussed above with respect to the United States apply similarly in the context of the EU, the approval process varies between countries and jurisdictions and can involve additional product testing and additional administrative review periods. The time required to obtain approval in other countries and jurisdictions might differ from and be longer than that required to obtain FDA approval. Regulatory approval in one country or jurisdiction does not ensure regulatory approval in another, but a failure or delay in obtaining regulatory approval in one country or jurisdiction may negatively impact the regulatory process in others. Failure to comply with applicable foreign regulatory requirements, may be subject to, among other things, fines, suspension or withdrawal of regulatory approvals, product recalls, seizure of products, operating restrictions and criminal prosecution.

Non-clinical studies and clinical trials

Similarly to the United States, the various phases of non-clinical and clinical research in the EU are subject to significant regulatory controls.

Non-clinical studies are performed to demonstrate the health or environmental safety of new chemical or biological substances. Non-clinical studies must be conducted in compliance with the principles of good laboratory practice (GLP) as set forth in EU Directive 2004/10/EC. In particular, non-clinical studies, both in vitro and in vivo,

must be planned, performed, monitored, recorded, reported and archived in accordance with the GLP principles, which define a set of rules and criteria for a quality system for the organizational process and the conditions for non-clinical studies. These GLP standards reflect the Organization for Economic Co-operation and Development requirements.

Clinical trials of medicinal products in the EU must be conducted in accordance with EU and national regulations and the International Conference on Harmonization (ICH) guidelines on good clinical practices (GCP) as well as the applicable regulatory requirements and the ethical principles that have their origin in the Declaration of Helsinki. Additional GCP guidelines from the European Commission, focusing in particular on traceability, apply to clinical trials of advanced therapy medicinal products. If the sponsor of the clinical trial is not established within the EU, it must appoint an entity within the EU to act as its legal representative. The sponsor must take out a clinical trial insurance policy, and in most EU member states, the sponsor is liable to provide ‘no fault’ compensation to any study subject injured in the clinical trial.

Certain countries outside of the United States, including the EU, have a similar process that requires the submission of a clinical study application (CTA) much like the IND prior to the commencement of human clinical studies. A CTA must be submitted to each country’s national health authority and an independent ethics committee, much like the FDA and the IRB, respectively. Once the CTA is approved by the national health authority and the ethics committee has granted a positive opinion in relation to the conduct of the trial in the relevant member state(s), in accordance with a country’s requirements, clinical study development may proceed.

The CTA must include, among other things, a copy of the trial protocol and an investigational medicinal product dossier containing information about the manufacture and quality of the medicinal product under investigation. Currently, CTAs must be submitted to the competent authority in each EU member state in which the trial will be conducted. Under the new Regulation on Clinical Trials, which is currently expected to become applicable by early 2022, there will be a centralized application procedure where one national authority takes the lead in reviewing the application and the other national authorities have only a limited involvement. Any substantial changes to the trial protocol or other information submitted with the CTA must be notified to or approved by the relevant competent authorities and ethics committees. Medicines used in clinical trials must be manufactured in accordance with good manufacturing practice (GMP). Other national and EU-wide regulatory requirements also apply.

Marketing Authorizations

To market a medicinal product in the EU and in many other foreign jurisdictions, we must obtain separate regulatory approvals. More concretely, in the EU, medicinal product candidates can only be commercialized after obtaining a Marketing Authorization (MA). To obtain regulatory approval of an investigational medicinal product under EU regulatory systems, we must submit a marketing authorization application (MAA.) The process for doing this depends, among other things, on the nature of the medicinal product. There are two types of MAs:

- the “Union MA”, which is issued by the European Commission through the Centralized Procedure, based on the opinion of the Committee for Medicinal Products for Human Use (CHMP) of the European Medicines Agency (EMA) and which is valid throughout the entire territory of the EU. The Centralized Procedure is mandatory for certain types of products, such as (i) medicinal products derived from biotechnology medicinal products, (ii) designated orphan medicinal products, (iii) advanced therapy products (such as gene therapy, somatic cell therapy or tissue-engineered medicines), and (iv) medicinal products containing a new active substance indicated for the treatment certain diseases, such as HIV/AIDS, cancer, neurodegenerative diseases, diabetes, other auto-immune and viral diseases. The Centralized Procedure is optional for products containing a new active substance not yet authorized in the EU, or for products that constitute a significant therapeutic, scientific or technical innovation or that the granting of authorization would be in the interest of public health in the EU; and
- “National MAs”, which are issued by the competent authorities of the EU member states and only cover their respective territory, are available for products not falling within the mandatory scope of the Centralized Procedure. Where a product has already been authorized for marketing in an EU member state, this National MA can be recognized in another member state through the Mutual Recognition Procedure. If the product has not received a National MA in any member state at the time of application, it can be approved simultaneously in various member states through the Decentralized Procedure. Under

the Decentralized Procedure an identical dossier is submitted to the competent authorities of each of the member states in which the MA is sought, one of which is selected by the applicant as the Reference member state.

Under the above-described procedures, in order to grant the MA, the EMA or the competent authorities of the EU member states make an assessment of the risk-benefit balance of the product on the basis of scientific criteria concerning its quality, safety and efficacy.

Under the Centralized Procedure, the maximum timeframe for the evaluation of a MAA by the EMA is 210 days. Where there is a major public health interest and an unmet medical need for a product, the CHMP may perform an accelerated review of a MA in no more than 150 days (not including clock stops). Innovative products that target an unmet medical need and are expected to be of major public health interest may be eligible for a number of expedited development and review programs, such as the PRIME scheme, which provides incentives similar to the breakthrough therapy designation in the US. PRIME is a voluntary scheme aimed at enhancing the EMA's support for the development of medicines that target unmet medical needs. It is based on increased interaction and early dialogue with companies developing promising medicines, to optimize their product development plans and speed up their evaluation to help them reach patients earlier. Product developers that benefit from PRIME designation can expect to be eligible for accelerated assessment but this is not guaranteed. The benefits of a PRIME designation include the appointment of a CHMP rapporteur before submission of a MAA, early dialogue and scientific advice at key development milestones, and the potential to qualify products for accelerated review earlier in the application process.

MAAs have an initial duration of five years. After these five years, the authorization may be renewed for an unlimited period on the basis of a reevaluation of the risk-benefit balance, unless the EMA decides, on justified grounds relating to pharmacovigilance, to mandate one additional five-year renewal period.

Data and marketing exclusivity

The EU also provides opportunities for market exclusivity. Upon receiving MA, new chemical entity, or reference product candidates, generally receive eight years of data exclusivity and an additional two years of market exclusivity. If granted, the data exclusivity period prevents generic or biosimilar applicants from relying on the pre-clinical and clinical trial data contained in the dossier of the reference product when applying for a generic or biosimilar MA in the EU during a period of eight years from the date on which the reference product was first authorized in the EU. The market exclusivity period prevents a successful generic or biosimilar applicant from commercializing its product in the EU until 10 years have elapsed from the initial authorization of the reference product in the EU. The overall 10-year market exclusivity period can be extended to a maximum of eleven years if, during the first eight years of those 10 years, the MA holder obtains an authorization for one or more new therapeutic indications which, during the scientific evaluation prior to their authorization, are held to bring a significant clinical benefit in comparison with existing therapies. However, there is no guarantee that a product will be considered by the EU's regulatory authorities to be a new chemical entity, and products may not qualify for data exclusivity.

Pediatric Development

In the EU, MAAs for new medicinal products candidates have to include the results of trials conducted in the pediatric population, in compliance with a pediatric investigation plan (PIP) agreed with the EMA's Pediatric Committee (PDCO). The PIP sets out the timing and measures proposed to generate data to support a pediatric indication of the drug for which MA is being sought. The PDCO can grant a deferral of the obligation to implement some or all of the measures of the PIP until there are sufficient data to demonstrate the efficacy and safety of the product in adults. Further, the obligation to provide pediatric clinical trial data can be waived by the PDCO when these data is not needed or appropriate because the product is likely to be ineffective or unsafe in children, the disease or condition for which the product is intended occurs only in adult populations, or when the product does not represent a significant therapeutic benefit over existing treatments for pediatric patients. Once the MA is obtained in all EU Member States and study results are included in the product information, even when negative, the product is eligible for six months' supplementary protection certificate extension (if any is in effect at the time of authorization).

Post-Approval Requirements

Similar to the United States, both MA holders and manufacturers of medicinal products are subject to comprehensive regulatory oversight by the EMA, the European Commission and/or the competent regulatory authorities of the member states. The holder of a MA must establish and maintain a pharmacovigilance system and appoint an individual qualified person for pharmacovigilance who is responsible for oversight of that system. Key obligations include expedited reporting of suspected serious adverse reactions and submission of periodic safety update reports (PSURs).

All new MAA must include a risk management plan (RMP) describing the risk management system that the company will put in place and documenting measures to prevent or minimize the risks associated with the product. The regulatory authorities may also impose specific obligations as a condition of the MA. Such risk-minimization measures or post-authorization obligations may include additional safety monitoring, more frequent submission of PSURs, or the conduct of additional clinical trials or post-authorization safety studies.

The advertising and promotion of medicinal products is also subject to laws concerning promotion of medicinal products, interactions with physicians, misleading and comparative advertising and unfair commercial practices. All advertising and promotional activities for the product must be consistent with the approved summary of product characteristics, and therefore all off-label promotion is prohibited. Direct-to-consumer advertising of prescription medicines is also prohibited in the EU. Although general requirements for advertising and promotion of medicinal products are established under EU directives, the details are governed by regulations in each member state and can differ from one country to another.

The aforementioned EU rules are generally applicable in the European Economic Area (EEA) which consists of the 27 EU member states plus Norway, Liechtenstein and Iceland.

For other countries outside of the EU, such as countries in Latin America or Asia (e.g. China and Japan), the requirements governing the conduct of clinical studies, product licensing, pricing and reimbursement vary from country to country. In all cases, again, the clinical studies are conducted in accordance with GCP and the applicable regulatory requirements and the ethical principles that have their origin in the Declaration of Helsinki. If we fail to comply with applicable foreign regulatory requirements, we may be subject to, among other things, fines, suspension or withdrawal of regulatory approvals, product recalls, seizure of products, operating restrictions and criminal prosecution.

Privacy and data protection laws

We are also subject to laws and regulations in non-US countries covering data privacy and the protection of health-related and other personal information. For instance, EU member states and other jurisdictions have adopted data protection laws and regulations, which impose significant compliance obligations. Laws and regulations in these jurisdictions apply broadly to the collection, use, storage, disclosure, processing and security of personal information that identifies or may be used to identify an individual, such as names, contact information, and sensitive personal data such as health data. These laws and regulations are subject to frequent revisions and differing interpretations,

As of May 2018, the General Data Protection Regulation (GDPR) replaced the Data Protection Directive with respect to the processing of personal data in the European Union. The GDPR imposes many requirements for controllers and processors of personal data, including, for example, higher standards for obtaining consent from individuals to process their personal data, more robust disclosures to individuals and a strengthened individual data rights regime, shortened timelines for data breach notifications, limitations on retention and secondary use of information, increased requirements pertaining to health data and pseudonymised (i.e., key-coded) data and additional obligations when we contract third-party processors in connection with the processing of the personal data. The GDPR allows EU member states to make additional laws and regulations further limiting the processing of genetic, biometric or health data. Failure to comply with the requirements of GDPR and the applicable national data protection laws of the EU member states may result in fines of up to €20,000,000 or up to 4% of the total worldwide annual turnover of the preceding financial year, whichever is higher, and other administrative penalties.

Japan

Japanese drug regulation

Non-clinical studies and clinical trials

Being a member of the International Conference on Harmonization (ICH), Japan has pharmaceutical regulations fundamentally similar to those of the United States or EU.

Non-clinical studies are performed to demonstrate the health safety of new chemical or biological substances. Non-clinical studies must be conducted in compliance with the principles of Japanese good laboratory practice (GLP) which reflect the Organization for Economic Co-operation and Development requirements. Currently, Japan and EU have a mutual recognition agreement for GLP, and data generated compliant with EU requirements will be accepted by the Japanese authorities. There is no similar agreement with the United States.

Clinical trials of medicinal products in Japan must be conducted in accordance with Japanese regulations based on ICH guidelines governing good clinical practices (GCP). They focus on ethics of the clinical trial and protection of the privacy of the trial subjects. If the sponsor of the clinical trial is not established within Japan, it must appoint an entity within the country to act as its caretaker who should be authorized to act on the sponsor's behalf. The sponsor must take out a clinical trial insurance policy, and, according to the industry agreement, should put in place a common compensation policy for the injuries from the trial.

Prior to the commencement of human clinical studies, the sponsor must complete evaluation of the safety of the investigative product, and submit a clinical trial notification and the protocol to the authorities in advance, upon agreement of the IRB of the participating institutions. When the authorities do not comment on the notification, the sponsor may proceed with the clinical trial.

Any substantial changes to the trial protocol or other information submitted must be cleared by the IRB and notified to the authorities. Medicines used in clinical trials must be manufactured in accordance with good manufacturing practice (GMP).

Product approval

To market a medicinal product in Japan, we must obtain regulatory approval. To obtain regulatory approval of an investigational medicinal product, we must submit a new drug application. The process for doing this depends, among other things, on the nature of the medicinal product and there are currently a few different pathways for approval. If the product is designed for treating certain "difficult diseases" or those whose patient size is limited, we may be able to obtain designation as an orphan drug product if it demonstrates unique therapeutic value. Approval application for such designated orphan products will be processed on an expedited basis and the authorities' requirement for clinical data will be much limited. Separately, the latest amendment to the law introduced separate pathways for (i) truly innovative products with a unique mode of action and (ii) those which will satisfy unmet medical needs. These products will also be processed on an expedited basis.

The evaluation of applications will be based on an assessment of the risk-benefit balance of the product on the basis of scientific criteria concerning its quality, safety and efficacy. Once the review organization complete its review task, the matter will be considered by the advisory committee of experts, and the government will grant approval upon positive recommendation from the committee.

The volume and quality of the clinical data will be the key determinant of the approval decision. Clinical trial data generated overseas will be accepted as part of the data package consistent with the ICH recommendation. Typically, a limited dose response clinical trial for Japanese subjects is required to ensure that data are extrapolatable for the Japanese population. In a more recent development, the authorities encourage manufacturers to organize an international joint clinical trial with some Japanese participation under a joint protocol, to expedite the clinical trial process. Regulatory approval does not expire.

Licensing requirement

Separate from the approval requirement, it is also mandatory to possess a distribution license of an appropriate class for the manufacturer to commercially distribute the product in Japan. Non-Japanese companies who possess only the product approval may designate an appropriate license holder in Japan to commercially distribute the product, rather than distributing it on its own. The license is valid for 5 years.

Intellectual Property

Exclusive License Agreement with Children’s Hospital Medical Center, d/b/a Cincinnati Children’s Hospital Medical Center

On June 1, 2021 (the “Effective Date”), the Company entered into a license agreement with Children’s Hospital Medical Center, d/b/a Cincinnati Children’s Hospital Medical Center (“CHMC”) to develop and commercialize certain CHMC patents and related technology directed at a virus-like particle (VLP) vaccine platform that utilizes nanoparticle delivery technology, which may have potential broad application to develop vaccines for multiple infectious diseases (“the CHMC Agreement”). The license is exclusive, worldwide, and is for all uses (other than the “Excluded Field” of immunization against, and prevention, control, or reduction in severity of gastroenteritis caused by Rotavirus and Norovirus in China and Hong Kong). The license is sublicensable with prior CHMC written approval consistent with the terms of the CHMC Agreement.

The CHMC Agreement includes the below patents, which we refer to as the “Licensed Patents”, and any divisionals, continuations and continuations-in-part thereto (solely to the extent that the claims in the continuations-in-part are directed to the subject matter specifically claimed in the Licensed Patents, and they have the same priority date as the Licensed Patents, but do not include any different or additional claims), and any patents resulting therefrom:

U.S. Patent Application No.	U.S. Patent No.	Granted Claim Type	U.S. Expiration	Foreign Counterparts
12/797,396	8,486,421	Compositions of the vaccine/vaccine platform	1/13/2031	CN107043408B EP2440582B1 JP5894528B2
13/924,906	9,096,644	Method of treatment	9/20/2030	CN107043408B EP2440582B1 JP5894528B2
13/803,057	9,562,077	Compositions of the vaccine platform	4/10/2034	none
16/489,095	pending	pending	[3/15/2038]*	Pending applications in Canada, China, EU and Japan
63/149,742 (filed 2/16/2021)	pending	pending	[February 2042]#	TBD
63/162,369 (filed 3/17/2021)	pending	pending	[March 2042]#	TBD

* Projected expiration if patent issues: 20 years from earliest non-provisional application filing date.
Non-provisional application not yet filed. Expiration projected 21 years from provisional application filing date. Dependant on timely conversion to non-provisional application and issuance of patent.

The CHMC Agreement also grants the Company a non-exclusive limited license to use and copy internally any technical information in existence and known before the Effective Date by CHMC solely as necessary for the use and practice of the Licensed Patents (the “Technology”).

The term of the CHMC Agreement begins on the Effective Date and extends on a jurisdiction by jurisdiction and product by product basis until the later of: (i) the last to expire Licensed Patent; (ii) ten (10) years after the first commercial sale; or, (iii) entrance onto the market of a biosimilar or interchangeable product. CHMC has reserved the right to practice, have practiced, and transfer the Licensed Patents and Technology for research and development purposes, including education, research, teaching, publication and public service, but not to use or practice the Licensed Patents or Technology in Field of Use for any commercial or profit purpose.

The Licensed Patents granted to the Company under the CHMC Agreement are also subject to any rights of the United States federal, state and/or local Government(s), as well as nonprofit entities, if certain patents or technologies were created in the course of Government-funded or non-profit entity-funded research. The CHMC Agreement also contains compulsory licensing provisions under which CHMC must notify the Company in writing whenever CHMC may become aware of third parties that are interested in obtaining rights to the Licensed Patents or Technology for purposes that are beyond the scope of the Company's development and commercialization plan. The Company may elect to pursue the new purposes itself (and negotiate commercially reasonable development targets), or enter into sublicense negotiations with the interested third party. However, if the Company fails to meet its development targets for the new purposes or fails to enter into a sublicense agreement with the interested third party within nine (9) months of the notice from CHMC, then the new purpose will be excluded from the license grant and CHMC will be free to pursue licensing of the Licensed Patents or Technology within the Excluded Field to an interested third party.

Any patented modification, alteration or improvement of any invention claimed in a Licensed Patents or Technology which is conceived or reduced to practice solely by the Company ("Company Improvement") is owned by the Company; however, for any such Company Improvement, the Company will automatically grant to CHMC a worldwide, perpetual, sublicensable, nonexclusive, paid-up, royalty-free license to use any Company Improvements solely for clinical or non-clinical, non-commercial research, testing, educational and patient care purposes. The CHMC Agreement also provides the Company with an option to license any CHMC or jointly patented modification, alteration or improvement of any invention claimed in a Licensed Patent ("CHMC Improvement" and "Joint Improvement, respectively"), with option fee for each Improvement that the Company elects to include in the license grant of the CHMC Agreement.

As described in further detail below, obligations under the CHMC Agreement could require the Company to pay up to an aggregate of approximately \$59.75 million assuming all fees and milestone payments (excluding any royalty arrangements) are fulfilled under CHMC Agreement.

Pursuant to the CHMC Agreement, the Company paid to CHMC a one-time five-digit initial license fee; thereafter, the Company is required to pay a six-digit deferred license fee upon the earlier of the Company's first to occur convertible debt or equity raise after the Effective Date. On the one year anniversary of the Effective Date, the Company will be required to pay to CHMC an additional deferred six-digit license fee.

Under the CHMC Agreement, the Company is obligated to use commercially reasonable efforts to bring licensed products to market through diligent research and development, testing, manufacturing and commercialization and to use best efforts to make all necessary regulatory filings and obtain all necessary regulatory approvals, and achieve milestones relating to development and sales, and report to CHMC on progress. The Company will also be obligated to pay the agreed upon development milestone payments to CHMC.

Development milestones include: (i) IND filings of each Licensed Product; (ii) BLA or equivalent allowed for Licensed Product in U.S. or E.U.; (iii) first commercial sale of licensed product in the U.S.; (iv) first commercial sale of licensed product in the E.U.; (v) first commercial sale of licensed product in Japan; (vi) first commercial sale in ROW; (vii) conclusion of the first calendar year. Pursuant to the terms of the CHMC Agreement, if the Company fails to achieve milestones or make milestone payments on certain milestones, and cannot mutually agree with CHMC on an amendment to the milestones, then CHMC will have the option of converting any and all of such exclusive licenses to nonexclusive licenses.

In addition to the fees discussed above, beginning on the first Net Sale, the Company will pay CHMC running royalties on a quarterly basis as a percentage of Net Sales (as defined in the CHMC Agreement) of the Company, its affiliates and any subsidiaries. Similarly, in the event the Company enters into a sublicense agreement, the Company shall pay CHMC a percentage of all non-royalty sublicensing revenues received from the sublicensee. There are single digit royalty rates for products and processes for P-Particle VLP Bivalent vaccine for norovirus and rotavirus;

for products and processes for Universal Flu Vaccine(s); and for all other products or processes for other indications. To date, no payments have been made related to the milestones or royalties. Before any Valid Claims (as defined in the CHMC Agreement) exist, the running royalty rates are reduced by fifty percent (50%).

The CHMC Agreement also contains an anti-stacking provision pursuant to which in the event the Company is legally required to pay royalties to one or more third parties whose patent rights dominate the Licensed Patents, and would therefore be infringed by exercise of the license rights granted in the CHMC Agreement, the Company may reduce running royalty payments by fifty percent (50%). In the event the Company grants sublicenses, the Company is obligated to pay CHMC as follows: (i) specified percentage of revenue received prior to first Net Sale of first Licensed Product; (ii) specified percentage for revenue received after first Net Sales of first Licensed Product but before first Net Sales of second Licensed Product; or, (iii) specified percentage for revenues received after first Net Sales of second Licensed Product.

CHMC reserved the first and sole right, using in-house or outside legal counsel selected by CHMC, to prepare, file, prosecute, maintain and extend patents and patent applications, and the Company agreed to reimburse CHMC for its legal and administrative costs incurred in the course of doing such. The Company also agreed to reimburse CHMC for incurred legal fees as of the Effective Date. CHMC will provide the Company a reasonable opportunity to comment during prosecution and will consider the Company's comments, but CHMC retained control over all final decisions. If CHMC elects to not be responsible for the prosecution or maintenance of any such patents, the Company will receive a sixty (60) days' written notice upon which the Company may elect, at the Company's expense, to assume the responsibilities and obligations to prosecute and maintain the patents (among other things); thereafter, the Company will use reasonable efforts to give CHMC an opportunity to comment, but the final decision with respect to such matter will remain with the Company.

The CHMC Agreement contains no CHMC representations or warranties. The CHMC Agreement also requires the Company to indemnify CHMC and other related parties against all claims, suit, actions, demands, judgments, or investigations arising out of any product the Company produces under the CHMC Agreement, as set forth in the CHMC Agreement, and requires the Company, beginning with the earlier of the first clinical trial or commercial sale or other commercialization to obtain liability insurance.

CHMC will have the first and sole right but not the obligation, at its own expense, to initiate an infringement suit or other appropriate actions against third party infringers and receives all therefrom. For joint suits initiated against third party infringers and receives damages or profits recovered therefrom. In the event CHMC does not, within six (6) months after becoming aware of infringement, secure cessation of the infringement, the Company will have the right to initiate suit at its own expense. Any damages or profits that the Company recovers will be treated as Net Sales subject to royalties after the Company has been compensated for its costs in handling such action. In the event of a joint infringement suit, the Company and CHMC will agree in writing who will control the action and how cost and recoveries will be shared.

The Company may terminate the CHMC Agreement for convenience, at any time prior to first commercial sale of a product or process by providing one hundred and eighty (180) days' written notice to CHMC. It may also terminate for a CHMC uncured material breach. CHMC may terminate the CHMC Agreement for an uncured Company material breach or insolvency or bankruptcy. In the event the Company's material breach is for failure to meet any of the milestone payments, the Company is entitled to a nonexclusive license to continue developing indications that have already entered development at any stage or in which the Company has invested in developing. CHMC may also terminate the CHMC Agreement to the fullest extent permitted by law in the countries of the worldwide territory, in the event the Company or its affiliates challenge or induce others set up challenges to the validity or enforceability of any of the Licensed Patents and the Company will be obligated reimburse CHMC for its costs, including reasonable attorneys' fees.

Option Agreement between Oxford University Innovation Limited and Blue Water Vaccines Inc.

On December 18, 2018, the Company entered into an option agreement with Oxford University Innovation Limited ("OUI"), pursuant to which the Company paid an option fee of double digit thousands US dollars to OUI in exchange for a period of exclusivity, in advance of a fundraising of fifteen million dollars (\$15,000,000). Under the option agreement, the Company has the right to exercise the option for the grant of the right to the Company to an exclusive, worldwide license to PCT Patent Application number PCT/GB/2017/052510, any patents granted

in response to that application, any corresponding foreign patents and applications deriving priority from that application, and any addition, continuation, continuation-in-part, division, reissue, renewal or extension based thereon, and related know-how and confidential information (the “Technology”).

Exercise of the option by the Company was conditional upon the Company submitting a business plan for the subsequent two years, including a development plan for the technology and a financial projection, demonstrating the Company’s ability to develop the Technology and evidence of the Company’s solvency and receipt of fifteen million dollars (\$15,000,000) in funds for the development of the Technology. The Company has agreed that, as a condition precedent to the license becoming effective, it must provide funding for three years of salary for Dr. Craig Thompson in Oxford’s Department of Zoology, a minimum of four hundred and twenty thousand pounds (£420,000).

License Agreement Between Oxford University Innovation Limited and Blue Water Vaccines Inc.

On July 16, 2019, the Company entered into an exclusive, worldwide agreement (“OUI Agreement”) with Oxford University Innovation Limited (“OUI”), pursuant to which the Company obtained an exclusive worldwide license for all fields to PCT Patent Application number PCT/GB/2017/052510, entitled “Immunogenic Composition,” any patents granted in response to that application, any corresponding foreign patents and applications deriving priority from that application, and any addition, continuation, continuation-in-part, division, reissue, renewal or extension based thereon, and a nonexclusive license to related know-how and confidential information, as set forth in the below chart (the “Licensed Technology”):

U.S. Patent Application No.	U.S. Patent No.	Granted Claim Type	U.S. Expiration	Foreign Counterparts
16/326,749	11,123,422	Compositions and method of treatment	8/25/2037	Pending applications in Australia, Canada, China, EU and Japan
17/458,712	pending	pending	[8/25/2037]*	

* Projected expiration if patent issues: 20 years from earliest non-provisional application filing date.

The OUI Agreement has a term concluding ten years following the last to expire of all licensed patents and patent applications as defined under the terms of the OUI Agreement. The license was conditional upon the Company entering into a separate agreement with Oxford University to provide funding for three years’ salary for Dr. Craig Thompson in the University’s Department of Zoology, which amounts to a minimum of four hundred and twenty thousand pounds (£420,000), which was paid by the Company in January 2020.

Improvements to the Licensed Technology as defined in the OUI Agreement belong to OUI and are included in the Licensed Technology. All Company Improvements of belong to the Company. The Company granted to OUI, and OUI subsequently granted to Oxford University, a non-transferable, irrevocable, perpetual, royalty-free license to use and publish the Licensed Technology and the Company’s Improvements upon the Licensed Technology for non-commercial use. If a Licensed Product is covered by the Medicines Access Policy of Oxford University to promote, the Company shall adhere to the requirements of the Medicines Access Policy.

As described in further detail below, obligations under the OUI Agreement could require the Company to pay an aggregate of up to approximately \$51 million in connection with all fees and milestone payments (excluding any royalty arrangements) that may be incurred thereunder.

The Company did not pay a signing fee to OUI and is obligated to pay a single digit royalty on all net sales of licensed products, as defined in the OUI Agreement, as well as double-digit royalties on any sums received by the Company from any sublicensee (including all up-front, milestone and other one-off payments received by the Company from any sub-licenses or other contracts granted by the Company with respect to the licensed technology). After the expiration or revocation of the last Valid Claim (as defined in the OUI Agreement) covering a Licensed Product, a “step down” royalty rate shall apply to such Licensed Technology. If the Company has to pay royalties to a third party to use a proprietary manufacturing process proprietary adjuvants in order to make or have made a Licensed Product, the Company will be able to deduct from all royalty payments, up to a maximum amount of twenty-five percent (25%) of the royalties due to OUI. The OUI Agreement entitles the Company to supply a commercially reasonable quantity (not exceeding 5% of units sold in any quarter) of licensed products for promotional sampling.

In the event that royalties paid to OUI do not amount to the “minimum sum” under the OUI Agreement for a particular year, the Company is obligated to make up the difference between the royalties actually paid and such minimum sum. The minimum sums vary over time, and reduces to \$0 once the “step down” applies. The minimum sums and milestone fees are indexed to the RPI (Retail Prices index for all items which is published in the United Kingdom by the Office for National Statistics, or any replacement of it) and will be increased or decreased as appropriate as set forth in the OUI Agreement.

The Company is obligated to use its best efforts to develop and market Licensed Products in accordance with its development plan report to OUI on progress and achieve the following milestones and must pay OUI nonrefundable milestone fees as follows when it achieves them: initiation of first Phase I study; initiation of first Phase II study; initiation of first Phase III/pivotal registration studies; first submission of application for regulatory approval (BLA/NDA); marketing authorization in the United States; marketing authorization in any EU country; marketing authorization in Japan; first marketing authorization in any other country; first commercial sale in Japan; first commercial sale in any ROW country; first year that annual sales equal or exceed certain thresholds.

The Company is obligated to pay, and has paid, a low 5-digit number of British pounds to OUI for any past patent expenses that were incurred prior to the execution of the OUI Agreement. Upon consultation with the Company and at the Company’s expense, OUI shall prosecute, use all reasonable endeavors to maintain and renew the patents throughout the duration of the OUI Agreement. The Company and OUI agreed to inform each other in writing of any misappropriation or infringement of any rights to the licensed technology; however, the Company has the first right to take legal action at its own cost in relation to any such misappropriation or infringement, but must discuss any proposed legal action with OUI and take into account any legitimate interest of OUI in the legal action that it takes. If the Company notifies OUI that it does not intend to take legal action in such matters, OUI may take any legal action at its own cost. All profits or damages recovered after unrecovered costs and expenses are deducted are treated as net sales for which royalties would be due.

OUI makes no warranties at all with regard to the Licensed Technology or whether use of it will infringe third party rights. The Company is required to indemnify OUI and Oxford University from all third party claims, damages, and liabilities asserted by third parties arising directly or indirectly from use of the Licensed Technology; marketing of Licensed Products; or breach of the OUI Agreement. The OUI Agreement is governed by English law and the parties agreed to submit to the exclusive jurisdiction of English Courts for resolution of any disputes arising out of or in connection with the OUI Agreement, with the exception of actions relating to intellectual property disputes or confidential information which may be brought in any court of competent jurisdiction.

Either party may terminate the OUI Agreement for an uncured material breach. The Company may terminate the OUI Agreement for any reason at any time upon six months’ written notice expiring after the third anniversary of the OUI Agreement. OUI may terminate immediately if the Company has a petition presented for its winding-up or passes a resolution for winding up other than for a bona fide amalgamation or reconstruction or compounds with its creditors or has a receiver or administrator appointed. OUI may also terminate if the Company opposes or challenges the validity of any of the patents or applications in the Licensed Technology; raises the claim that the know-how of the Licensed Technology is not necessary to develop and market Licensed Products; or in OUI’s reasonable opinion, is taking inadequate or insufficient steps develop or market Licensed Products and does not take any further steps that OUI requests by written notice within a reasonable time.

Exclusive License Agreement between St. Jude Children’s Research Hospital, Inc. & Blue Water Vaccines

On January 27, 2020 (the “Effective Date”), the Company entered into an exclusive, worldwide license agreement with St. Jude Children’s Research Hospital, Inc. (“St. Jude”), pursuant to which St. Jude granted the Company an exclusive license to develop licensed products and produce vaccines for use in humans (“St. Jude Agreement”) under U.S. Provisional Patent Application No. 61/537,290 (U.S. Patent No. 9,265,819 issued on February 23, 2016), and U.S. Provisional Patent Application No. 62/817,748 (filed March 13, 2019), and any issued patents, divisions, continuations, continuations-in-part, to the extent that the claims are directed to subject matter described in the above-referenced patent applications and are entitled to the priority date of the existing patent rights,

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re-examinations, substitutions, renewals, restorations, additions, or registrations thereof, as well as non-United States counterparts thereof, and extensions and supplementary protection certificates thereon (“Patent Rights”), all as set forth in the below chart:

U.S. Patent Application No.	U.S. Patent No.	Granted Claim Type	U.S. Expiration	Foreign Counterparts
14/345,988	9,265,819	Compositions and method of treatment	9/19/2032	none
pending [#]	pending	pending	[3/12/2040]*	Pending Applications in: Australia, Brazil, Canada, China, Europe, Hong Kong, Japan and Korea

* Projected expiration if patent issues: 20 years from earliest non-provisional application filing date.

U.S. National stage entry of WO 2020/183420 (PCT/IB2020/052250).

The license is sublicensable consistent with the terms and conditions of the St. Jude Agreement, provided that the Company remains responsible for the performance by each of its sublicensees. The license is subject to any government rights the United States has reserved, and St. Jude retained the right to make, have made, provide and use for St. Jude’s non-commercial research and clinical purposes, including the right to distribute St. Jude’s biological material disclosed and claimed in the Patent Rights for non-profit academic research use to non-commercial entities as is customary in the scientific community and to sell the biological materials as research reagents for research use only by the scientific community.

As described in further detail below, obligations under the St. Jude Agreement could require the Company to pay an aggregate of up to close to \$1,000,000 in connection with all fees and milestone payments (excluding any royalty arrangements) that may be incurred thereunder.

In exchange for the licenses, the Company paid St. Jude an initial five-digit license fee, and is required to pay a five-digit annual maintenance fee beginning on the first anniversary of the Effective Date (which is waived if all of the developmental milestones scheduled for completion before such annual fee is due have been achieved), milestone payments, patent reimbursement, and running royalties based on net sales of licensed products under the St. Jude Agreement.

Under the St. Jude Agreement, the Company is obligated to use commercially reasonable efforts to develop and commercialize the licensed product(s). If the Company fails to achieve the development milestones contained in the St. Jude Agreement, and if the Company and St. Jude fail to agree upon a mutually satisfactory revised time line, St. Jude will have the right to terminate the St. Jude Agreement.

The milestones include the following events: (i) complete IND enabling study by 2020; (ii) Initiate animal toxicology study by last half of 2020; (iii) file IND by first half of 2021; (iv) complete Phase I Clinical Trial by first half of 2022; (v) commence Phase II Clinical Trial by first half of 2024; (vi) commence Phase III Clinical Trial by 2026; and, (vii) regulatory approval, U.S. or foreign equivalent by 2026. Upon achievement of certain development and commercialization milestones, the Company is required to make milestone payments to St. Jude between the achievement of certain milestones (commencement of a Phase III clinical trial through first commercial sale).

Additionally, the Company is obligated to make running single-digit royalty payments payable, for each licensed product(s) sold by the Company, its affiliates or sublicensees, based on the net sales for the duration of the St. Jude Agreement. Furthermore, the Company is obligated to pay a double-digit percentage of other consideration received for any sublicensees.

The Company reimbursed St. Jude a 5-digit sum for certain patent costs incurred by St. Jude prior to the Effective Date of the St. Jude Agreement, and is obligated to reimburse St. Jude for reasonable patent costs incurred by St. Jude subsequent to the Effective Date.

The Company is responsible for and shall bear all expenses relating to the filing, prosecution, and maintenance of all patent rights licensed under the St. Jude Agreement. The Company has the first right to enforce any patent against infringement, and shall keep St. Jude informed of the status of such; however, before the Company may commence any action with respect to any such alleged infringement, the Company shall take into consideration the views of St. Jude and the potential effect on the public interest.

Prior to initial human testing or first commercial sale of a licensed product, and thereafter so long as the licensed products are being sold in any particular country, the Company (and its sublicensees) is required to obtain and maintain insurance to cover its indemnity obligations, and to obtain and maintain product liability insurance coverage.

St. Jude represented and warranted that it has good and marketable title to the Patent Rights, but made no other representations and warranties. The term of the agreement commenced on the Effective Date, and shall continue, in each country, until the date of expiration of the last to expire valid claim included within the Patent Rights in that country. Either party may terminate the St. Jude Agreement in the event the other party (a) files or has filed against it a petition under the Bankruptcy Act (among other things) or (b) fails to perform or otherwise breaches its obligations under the St. Jude Agreement, and has not cured such failure or breach within sixty (60) days. The Company may terminate for any reason on thirty (30) days written notice.

Manufacturing and Supply

We currently do not own or operate any manufacturing facilities, but our strategic partnership with Ology Bioservice (which was later acquired by National Resilience, Inc.) (“Ology”) provides us with access to substantial resources to facilitate an independent supply path to the market. Ology is a leading global contract manufacturer with deep domain expertise and experience in large and small-scale production of clinical, as well as commercial-stage products. We have entered into agreements with Ology to secure capacity, technical expertise and resources to support the production of our products and processes that are intended to scale to commercial scale at Ology or other commercial manufacturing sites.

In July 2019, we entered into a development and manufacturing master services agreement with Ology, which we refer to, as amended, as the Ology Agreement, pursuant to which Ology is obligated to perform manufacturing process development and clinical manufacture and supply of components.

Under the Ology Agreement, we will pay Ology agreed upon fees for Ology’s performance of manufacturing services, and we will reimburse Ology for its out-of-pocket costs associated with purchasing raw materials, plus a customary handling fee. The Company entered into an initial Project Addendum on October 18, 2019 and the Company was required to pay Ology an aggregate of approximately \$4 million. Due to unforeseen delays associated with COVID-19, the Company and Resilience entered into a letter agreement dated January 9, 2020 to stop work on the project. The Company paid Ology \$100,000 for services, of which \$48,600 remains as prepaid expense as of December 31, 2020 and June 30, 2021. The second Project Addendum was executed May 21, 2021 and the Company is obligated to pay Ology an aggregate amount of approximately \$2.8 million, plus reimbursement for materials and outsourced testing, which will be billed at cost plus 15%.

Either party may terminate a Project Addendum and/or the Ology Agreement upon the material breach of any provision of this Agreement by the other Party if such breach is not cured by the breaching party within thirty (30) calendar days after receipt by the breaching Party of written notice of such default. The Company may terminate the Ology Agreement or the associated Project Addendum for any or no reason upon sixty (60) days’ prior written notice to Ology.

For additional details regarding our relationship with Ology, see Note 5 to our financial statements included elsewhere in this prospectus.

Employees

As of September 30, 2021, we had 2 full-time and 7 subcontracted employees. None of our employees are represented by a collective bargaining agreement, and we have never experienced any work stoppage. We believe we have good relations with our employees.

Properties and Facilities

We are currently leasing an office located at 201 E Fifth Street, Suite 1900, Cincinnati, OH 45202, which is renewed on a monthly basis. All of our research and development is performed on the premises of our third-party providers.

Legal Proceedings

From time to time we may be involved in various disputes and litigation matters that arise in the ordinary course of business. We are currently not a party to any material legal proceedings.

Changes in and Disagreements with Accountants

None.

Corporation Information

We were incorporated in Delaware on October 26, 2018. Our principal executive offices are located at 201 E Fifth Street, Suite 1900, Cincinnati, OH 45202, and our telephone number is (513) 620-4101. Our corporate website address is www.bluewatervaccines.com. The information contained on or accessible through our website is not a part of this prospectus, and the inclusion of our website address in this prospectus is an inactive textual reference only.

MANAGEMENT**Executive Officers and Directors**

The following table provides information regarding our executive officers and directors as of September 30, 2021:

Name	Age	Position(s)
<i>Executive Officers and Directors</i>		
Joseph Hernandez	49	Chief Executive Officer and Director
Erin Henderson	47	Chief Business Officer
Jon Garfield	56	Interim Chief Financial Officer ⁽¹⁾
<i>Non-Employee Directors</i>		
Kimberly Murphy	58	Director
John Rice, Ph.D.	71	Director ⁽²⁾
Allan L. Shaw	57	Director
Michael Venerable	58	Director
James Sapirstein	60	Director Nominee

(1) We intend to hire a permanent chief financial officer prior to the consummation of this offering.

(2) Mr. Rice will be resigning from his position as a director effective upon the consummation of this offering.

Executive Officers and Directors***Executive Officers*****Joseph Hernandez**

Joseph Hernandez has been the Chief Executive Officer & Executive Chairman for Blue Water Vaccines Inc. since October 2018. He has a background in company creation, early stage technology development, as well as private and public market financing. He brings leadership to the team, backed by a strong educational foundation in biology, medicine, molecular genetics, microbiology, epidemiology, marketing, and finance. Over the course of his career, he has founded or led eight entrepreneurial companies in cutting edge areas of healthcare and pharmaceuticals. After years of building his career at Merck & Co. (NYSE:MRK) from December 1998 to January 2001 and Digene from 2005 to 2009 (acquired by Qiagen (NYSE:QGEN)) from 2005 to 2009, Mr. Hernandez founded and became the President and CEO of Innovative Biosensors from 2004 to 2009. Later, Mr. Hernandez served as the Founder and Chairman of Microlin Bio Inc. from August 2013 to January 2017 and as Chairman of the Board of Ember Therapeutics (OTCMKTS:EMBT) from April 2014 to January 2019. He was also the Chairman of Sydys Corporation from May 2016 to January 2019. In 2018, Mr. Hernandez founded Blue Water Vaccines, an early stage biotechnology company focused on manufacturing a universal influenza vaccine in partnership with the University of Oxford in England. He has served as Chairman of Blue Water Vaccines, Inc. since 2019. Most recently, in January 2020, he founded and in May 2020 sold Noachis Terra, Inc. (acquired by Oragenics (NYSE:OGEN)) a company developing a vaccine for COVID-19. From May, 2020 to September 2021, Mr. Hernandez was also the chairman and chief executive officer of Blue Water Acquisition Corp. (NASDAQ: BLUW) (“BWAC”), a special purpose acquisition company which completed its initial public offering in December 2020. On September 9, 2021, Blue Water Acquisition Corp. consummated a business combination with Clarus. Mr. Hernandez currently serves as a director of the post-combination entity, Clarus Therapeutics Holdings Inc. (NASDAQ:CRXT) (“Clarus”), where he serves as a member of the Audit and Compensation Committees. He completed his undergraduate studies in Neuroscience, M.Sc. in Molecular Genetics and Microbiology, M.B.A. all at the University of Florida and is completing his M.Sc. in Chronic Disease Epidemiology and Biostatistics at Yale University.

Erin Henderson

Erin Henderson has been the Chief Business Officer for Blue Water Vaccines Inc. since September 2020 and has extensive experience in program and project management, business operational management, marketing, fundraising and public-private partnership development and implementation. She joined the company in September 2019. Prior to joining Blue Water Vaccines, since 2010, Ms. Henderson was the Founder and Managing Partner for The Aetos Group, a management consulting company working with public, private, governmental and

non-governmental organizations focused on operational efficiency, Lean Six Sigma implementation, revenue development strategy and real estate acquisition strategy. Erin began her career at Lockwood Greene Engineers, followed by The Facility Group. She led local, state and federal governmental relations for the University of West Georgia and was responsible for identifying and securing financial support from both the public and private sector. Erin completed her undergraduate studies in Chemical Engineering from Auburn University. Erin serves on the Board of the Greater Gainesville Chamber of Commerce and the Board of Danscompany of Gainesville.

Jon Garfield our Interim Chief Financial Officer, has over 20 years of financial leadership experience, specifically with healthcare companies. Mr. Garfield regularly provides consulting services to private equity funds and privately held companies. Mr. Garfield has served as the CEO of Unity MSK since February 2021. He has served as a consultant of Bay State Physical Therapy from June 2018 to February 2019 and also as a director beginning in February 2019. Since June 2008, he has served as the chairman of the audit committee of Xnrgi, Inc. From April 2016 to June 2017, Mr. Garfield was the CFO of Pyramid Healthcare, also a private equity backed healthcare company. Prior to Pyramid Healthcare, Mr. Garfield served as the CFO of Monte Nido in January 2012 until January 2016. Before Monte Nido, he served as CFO of Clearant, Inc., (OTCBB:CLRI) a publicly-traded medical device company, and Network IP and Simplified Development, where he oversaw the finance and treasury functions, implemented systems upgrades, and pursued a number of growth initiatives. Mr. Garfield was previously a Co-Founder and Vice President of Acquisitions for Coach USA, a consolidator of ground transportation entities throughout North America, and was heavily involved in over 50 acquisitions and the eventual IPO of the company. Earlier in his career, he held positions with PricewaterhouseCoopers and Arthur Andersen. Mr. Garfield was the Chief Financial Officer of BWAC from December 2020 until it completed a business combination with Clarus in September 2021. Mr. Garfield received a B.B.A. in accounting from the University of Texas.

Significant Employees

Dr. Ronald R. Cobb, Ph.D.

Ron Cobb, Head of Science and Discovery for Blue Water Vaccines, Inc. since August 2021, is a Geneticist and Molecular Biologist with 25 years of pharmaceutical R&D and manufacturing experience. Dr. Cobb began his career at Research Triangle Institute in 1985 where he had the unique opportunity to work with Drs. Wall and Wani, who discovered Camptothecin and Taxol. At Tanabe Research Laboratories, Dr. Cobb initiated discovery programs seeking small molecule inhibitors of inflammatory diseases both while supporting all internal drug discovery screening efforts with protein expression services. In 1999 Dr. Cobb was recruited to Berlex Biosciences (US Division of Schering AG) to head up the protein expression section of the Protein Expression and Gene Therapy Group, where he supported gene expression for both research and clinical development phase project and was a member of the Scientific Advisory Committee and Worldwide Antibody Development Committee for Schering. At the end of 2005, Dr. Cobb joined the Research and Development Group at RTI Biologics where he was named the Director of Research, then to the Director of Research and Development. Under his guidance, 21 new products were released in 2009. Dr. Cobb joined Nanotherapeutics, Inc. (now National Resilience) as Vice President of Biologics in January 2011 and was Chief Scientific Officer in 2014 through 2021 and was PI for over \$200M in drug development contracts. He has co-authored over 60 peer-reviewed manuscripts and is currently working with BioDeals, LLC as Managing Director. Dr. Cobb received a BA in Biology at Wake Forest University and a Ph.D. in Biochemistry from the Medical College of Georgia.

Andrew Skibo, Ph.D.

Mr. Skibo has been the Head of Biologics Operations for Blue Water Vaccines, Inc. since June 2021. Mr. Skibo is a seasoned biopharmaceutical operations executive with deep cross-functional experience in international biopharmaceutical manufacturing, process scale-up, internal and external supply chain network design strategy and major capital project expansions. He has extensive international experience having been responsible for the design and startup of major pharmaceutical manufacturing facilities in USA, UK, Europe, Russia, Singapore and China. He is deeply familiar with all aspects of biotechnology product scale up and launch, having held related roles since the founding days of large-scale biotechnology commercial production. He has a broad understanding of many enterprise operations having held roles in Research and Process Development, Commercial/Business Development, Engineering and Strategic Planning.

Mr. Skibo served as EVP Operations at Medimmune, and Head of Biologics Operations at Astra Zeneca for eleven years. He retired from that full time role in April 2019, but continues to serve as Technical Advisor to EVP Operations, AstraZeneca. In his role, he was responsible for the development and improvement of AstraZeneca's

mono-clonal antibody operations and influenza seasonal and pandemic LAIV Flu operations. He developed the network strategy for these operations and implemented them in ten plants across eight sites (including two new sites) in the USA, UK, Europe and China. He transformed a previously challenging regulatory quality environment (warning letter) to best in class status. He oversaw the development of four BLA's and biologics product launches in 2017 to 2019, and has held related roles for nine product launches in his career.

In both his role with MedImmune/AstraZeneca and his role on the Board of ISPE, Mr. Skibo routinely interfaced with leadership levels of major international regulatory agencies, especially the FDA. He was instrumental in resolving a dead-locked product approval/cGMP regulatory issue, involving multiple firms, with the FDA associated with the recent launch of one of AstraZeneca's most significant oncology products.

Mr. Skibo received his B.S. degree in Chemistry and his M.S degree in Chemical Engineering from MIT. He holds patents in polymer film extrusion from his original career at Monsanto. He has served as a member of the Mayor's Fiscal Advisory Committee in San Francisco and has been a member and chairman of the Board of Supervisors in Birmingham/Chester County, PA.

Brian Price, Ph.D.

Brian Price has been Blue Water Vaccine, Inc.'s Head of Technology Strategy since September 2020 after being the Chief Compliance Officer from August 2019 to September 2020. Mr. Price is an experienced professional in FDA-regulated industries with a focus in CMC Development, regulatory compliance and QC analytical method development and validation. He has a successful track record of Business Development Growth with Government and Commercial funded toxicology, therapeutic and vaccine development, and analytical clientele. Brian's expertise is with molecular biology, microbiology, infectious disease, immunology, vaccines and drug discovery and development, and FDA compliance. His prior experience includes, from August 2018 to March 2019, as Vice-President of Pharmaceutical Development at Myonex Therapeutics, Inc. and multiple positions with Battelle from November 2011 to August 2018, including his most recent role as Vice President of Business Development for the Health Business Unit. At Battelle, Brian supported sales for, directed and oversaw basic and applied research projects for a number of commercial and government clients in the areas of toxicology, vaccine and therapeutic efficacy evaluation, medical device development, environmental microbiology, assay development and validation, and vaccine production, including participating in the development of pre-clinical trial material for the next generation Anthrax vaccine based on recombinant Protective Antigen for VaxGen, Inc. Mr. Price completed is undergraduate studies in Microbiology and Ph.D. in Microbiology at The Ohio State University.

Non-Executive Directors

Allan L. Shaw, one of our directors since January 2020, brings more than two decades of public company financial, operational, and strategic global business leadership. Mr. Shaw is a highly regarded biopharma executive and board member with extensive senior global strategic, financial, M&A, operational, capital markets and governance experience. Mr. Shaw's notable accomplishments include raising more than \$4 billion in public/private financings (including 2 IPOs), scaling a company from \$20 million to \$750 million in revenue as well as being involved with the sourcing/development/commercialization of various drug products in numerous therapeutic areas. Mr. Shaw is the founder and since 2005, has served as senior managing director, of Shaw Strategic Capital LLC, an international financial advisory firm focused on providing strategic financial counsel on a wide variety of issues such as general corporate finance, mergers and acquisitions, capital structuring, licensing and capital markets, and serving as financial consultant to private and public companies. Mr. Shaw was the Chief Financial Officer and Treasurer of Syndax Pharmaceuticals, Inc. from January 2016 to February 2017 and from December 2011 to September 2015, was Managing Director of Alvarez & Marsal LLC, a global professional services firm, where he led their biopharmaceutical consulting practice. Mr. Shaw has served on five public boards including chairing two audit committees, two compensation committees, and is currently involved with a portfolio of healthcare-related business endeavors. Mr. Shaw served as the Chief Financial Officer of Serono S.A. from November 2002 to May 2004; NewLead Holdings Ltd from October 2009 to July 2011; and Viatel, Inc. from November 1994 to June 2002. He currently serves on the board of directors of Edith & Carl Marks JCH of Bensonhurst, a non-profit organization, and chairs their finance committee. Mr. Shaw is a certified public accountant in the State of New York as well as a Chartered Global Management Accountant (CGMA). Mr. Shaw received a B.S. from the State University of New York at Oswego College.

Kimberly Murphy, one of our directors since January 2020, has more than 25 years of experience at leading pharmaceutical companies including Novartis (NYSE: NVS) and Merck & Co (NYSE: MRK). In her distinguished career at Merck, she rose through various public affairs and business roles to leadership positions as Region Marketer for U.S. Commercial Operations, U.S. Marketing Leader for Adult Vaccines and Director of the HPV/Gardasil Franchise. Most recently, Ms. Murphy served as currently the Vice President of Global Vaccines Commercialization Leader, Influenza Franchise, at GlaxoSmithKline (NYSE: GSK). Ms. Murphy has been with GSK since 2011, initially serving as VP of US Vaccines Customer Strategy from October 2012 to June 2014, then VP of the North America Vaccines Integration Planning from June 2014 to May 2015, followed by VP and Global Marketing Head for the Shingles Vaccines from May 2015 to February 2016, before transitioning to the Global Vaccines Commercialization Leader for the Influenza Franchise. Kim has Board and Advisory experience that includes serving on the boards of Oragenics, Inc. (NYSE: OGEN) as well as the GSK Representative to the Biotechnology Industry Organization's Biodefense Advisory Council, and on the St. Joseph's University Pharmaceutical & Healthcare Marketing MBA Program's Advisory Board. Additionally, Ms. Murphy was a director of BWAC from December 2020 to September 2021, and since BWAC's business combination with Clarus Therapeutics Holdings Inc. (NASDAQ:CRXT), has continued to serve as chair of the post-combination entity's board of directors, and also she serves as a member of the Compensation and Nominating and Corporate Governance Committees. Ms. Murphy received a B.A. in English from Old Dominion University, a M.B.A. in Marketing from St. Joseph's University, and the Marketing Excellence Program from the Wharton School of University of Pennsylvania. She is well qualified to serve on our Board due to her extensive experience in the healthcare industry.

Mike Venerable has been one of Blue Water Vaccines, Inc.'s directors since April 2020. As CEO and managing director of CincyTech, Mike Venerable leads with experience from both sides of the table: as a software industry entrepreneur and executive, and a seasoned investment and venture capital professional. Mike joined CincyTech in 2006, helping to raise its inaugural fund. He served as managing director for a decade, evaluating investment opportunities, advising startup companies, and helping to build a network of investors and strategic partners and raise CincyTech Funds II- IV. Previously, Mike was co-founder and CEO of Talus, a leading data warehouse consultancy, which was acquired by Sagent Technology. Mike led the company's services organization through the company's successful IPO in 1999. He has specific experience in raising angel and venture capital, software business design and operation, software product management, business valuation, financial analysis and intellectual property. As an industry practitioner, Mike is an expert on data warehouse design, business intelligence and analytic applications and software development processes. He has consulted on strategic product development initiatives for leading technology companies, including Siebel, Advent and Micros. Mike served in the US Army as a Korean linguist after graduating from the University of Dayton.

James Sapirstein, who will serve as one of our directors upon the completion of this offering, has over 35 years of experience leading, founding, growing, and selling healthcare companies, specifically in the pharmaceutical space. Mr. Sapirstein is currently the President and CEO of AzurRx BioPharma (NASDAQ: AZRX), where he has been since October 2019. His career began in sales at Eli Lilly, eventually rising to Director of International Marketing at Bristol Myers Squibb from July 1996 to June 2000, and later led the launch of Viread (tenofovir) at Gilead Sciences, Inc. (NASDAQ: GILD), where he served as Global Marketing Lead from June 2020 to June 2002. From November 2006 to January 2011, he served as founding CEO of Tobira Therapeutics (NASDAQ: TBRA), then a private company, and later acquired by Allergan (NYSE: AGN). Since then, he has served as CEO of Alliqua Biomedical (NASDAQ: ALQA) from September 2012 to February 2014 and CEO of Contravir Pharmaceuticals (NASDAQ: CTRV) from March 2014 to October 2018. He has been part of almost two dozen drug product launches and specifically either led or has been a key member of several HIV product launches into different new classes of therapeutics at the time. Additionally, Mr. Sapirstein holds board positions on Marizyme (OTCMKTS:MRZM) (Executive Chairman) since December 2018 Enochian Biosciences (NASDAQ: ENOB) since April 2018, and Leading Biosciences since March 2016. He previously served as a director of BioNJ from February 2017 to February 2019, an association of biopharma industries in New Jersey, from February 2017 to February 2019, RespireRX (OTCBB:RSPI) from April 2014 to January 2020, NanoViricides Inc. (NYSE: NNVC) from November 2018 to January 2020, and BWAC from December 2020 until its business combination with Clarus in September 2021. He is also a Board Director for BIO, the leading Biopharma Industries Organization promoting public policy and networking in the healthcare space, where he sits on both the Health Section and Emerging Companies Section Governing Boards. Mr. Sapirstein received a B.S. in Pharmacy from Rutgers University and his MBA from Fairleigh Dickinson University. He is well qualified to serve on our Board due to his extensive network from decades in the healthcare industry.

Family Relationships

There are no family relationships between or among any of the current directors, executive officers or persons nominated or charged to become directors or executive officers. There are no family relationships among our officers and directors and those of our subsidiaries and affiliated companies.

Board Composition

Our business and affairs are organized under the direction of our board of directors, which will continue to consist of five members following the consummation of this offering. Our board of directors will initially be divided into three classes, Class I, Class II and Class III, with members of each class serving staggered three-year terms. Our directors will be divided among the three classes as follows:

- the Class I directors will be Allan Shaw and Mike Venerable, and their terms will expire at our annual meeting of stockholders to be held in 2022;
- the Class II director will be James Sapirstein, and his terms will expire at our annual meeting of stockholders to be held in 2023; and
- the Class III directors will be Joseph Hernandez and Kimberly Murphy, and their terms will expire at our annual meeting of stockholders to be held in 2024.

Our amended and restated certificate of incorporation will provide that the authorized number of directors may be changed only by resolution of the board of directors. Our directors hold office until the earlier of their death, resignation, removal or disqualification, or until their successors have been elected and qualified. Our board of directors does not have a formal policy on whether the roles of Chief Executive Officer and Chairman of our board of directors should be separate. The primary responsibilities of our board of directors are to provide oversight, strategic guidance, counseling and direction to our management. Our board of directors meets on a regular basis. Upon completion of this offering, our bylaws will be amended and restated to provide that the authorized number of directors may be changed only by resolution of the board of directors.

We have no formal policy regarding board diversity. Our priority in selection of board members is identification of members who will further the interests of our stockholders through his or her established record of professional accomplishment, the ability to contribute positively to the collaborative culture among board members, knowledge of our business and understanding of the competitive landscape.

Director Independence

The Nasdaq Marketplace Rules require a majority of a listed company's board of directors to be comprised of independent directors within one year of listing. In addition, the Nasdaq Marketplace Rules require that, subject to specified exceptions, each member of a listed company's audit, compensation and nominating and corporate governance committees be independent and that audit committee members also satisfy independence criteria set forth in Rule 10A-3 under the Exchange Act.

Under Rule 5605(a)(2) of the Nasdaq Marketplace Rules, a director will only qualify as an "independent director" if, in the opinion of our board of directors, that person does not have a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director. In order to be considered independent for purposes of Rule 10A-3 of the Exchange Act, a member of an audit committee of a listed company may not, other than in his or her capacity as a member of the audit committee, the board of directors, or any other board committee, accept, directly or indirectly, any consulting, advisory, or other compensatory fee from the listed company or any of its subsidiaries or otherwise be an affiliated person of the listed company or any of its subsidiaries.

Our board of directors has reviewed the composition of our board of directors and its committees and the independence of each director. Based upon information requested from and provided by each director concerning his background, employment and affiliations, including family relationships, our board of directors has determined that each of Messrs. Allan Shaw and James Sapirstein as well as Ms. Kimberly Murphy, is an "independent director" as defined under Rule 5605(a)(2) of the Nasdaq Marketplace Rules. Our board of directors also determined that Messrs. Allan Shaw and James Sapirstein as well as Ms. Kimberly Murphy, who will comprise our audit committee

following this offering, who will comprise our compensation committee following this offering, and Messrs. Allan Shaw and James Sapirstein as well as Ms. Kimberly Murphy, who will be members of our nominating and corporate governance committee following this offering, satisfy the independence standards for such committees established by the SEC and the Nasdaq Marketplace Rules, as applicable. In making such determinations, our board of directors considered the relationships that each such non-employee director has with our company and all other facts and circumstances our board of directors deemed relevant in determining independence, including the beneficial ownership of our capital stock by each non-employee director.

Board Committees

Our board of directors has established three standing committees — audit, compensation and nominating and corporate governance — each of which operates under a charter that has been approved by our board of directors. Prior to the completion of this offering, copies of each committee’s charter will be posted on the Investor Relations section of our website, which is located at www.epien.com. Each committee has the composition and responsibilities described below. Our board of directors may from time to time establish other committees.

Audit Committee

Our audit committee consists of Allan Shaw, who is the chair of the committee, Kimberly Murphy and James Sapirstein. Our board of directors has determined that each of the members of our audit committee satisfies the Nasdaq Marketplace Rules and SEC independence requirements. The functions of this committee include, among other things:

- evaluating the performance, independence and qualifications of our independent auditors and determining whether to retain our existing independent auditors or engage new independent auditors;
- reviewing and approving the engagement of our independent auditors to perform audit services and any permissible non-audit services;
- reviewing our annual and quarterly financial statements and reports, including the disclosures contained under the caption “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” and discussing the statements and reports with our independent auditors and management;
- reviewing with our independent auditors and management significant issues that arise regarding accounting principles and financial statement presentation and matters concerning the scope, adequacy and effectiveness of our financial controls;
- reviewing our major financial risk exposures, including the guidelines and policies to govern the process by which risk assessment and risk management is implemented; and
- reviewing and evaluating on an annual basis the performance of the audit committee, including compliance of the audit committee with its charter.

Our board of directors has determined that Allan Shaw qualifies as an “audit committee financial expert” within the meaning of applicable SEC regulations and meets the financial sophistication requirements of the Nasdaq Marketplace Rules. In making this determination, our board has considered Mr. Shaw’s extensive financial experience and business background. Both our independent registered public accounting firm and management periodically meet privately with our audit committee.

Compensation Committee

Our compensation committee consists of James Sapirstein, who is the chair of the committee, Kimberly Murphy and Allan Shaw. Our board of directors has determined that each of the members of our compensation committee is an outside director, as defined pursuant to Section 162(m) of the Internal Revenue Code of 1986, as amended, or the Code, and satisfies the Nasdaq Marketplace Rules independence requirements. The functions of this committee include, among other things:

- reviewing, modifying and approving (or if it deems appropriate, making recommendations to the full board of directors regarding) our overall compensation strategy and policies;

- reviewing and approving the compensation, the performance goals and objectives relevant to the compensation, and other terms of employment of our executive officers;
- reviewing and approving (or if it deems appropriate, making recommendations to the full board of directors regarding) the equity incentive plans, compensation plans and similar programs advisable for us, as well as modifying, amending or terminating existing plans and programs;
- reviewing and approving the terms of any employment agreements, severance arrangements, change in control protections and any other compensatory arrangements for our executive officers;
- reviewing with management and approving our disclosures under the caption “Compensation Discussion and Analysis” in our periodic reports or proxy statements to be filed with the SEC; and
- preparing the report that the SEC requires in our annual proxy statement.

Nominating and Corporate Governance Committee

Our nominating and corporate governance committee consists of Kimberly Murphy, who is the chair of the committee, Allan Shaw and James Sapirstein. Our board of directors has determined that each of the members of this committee satisfies the Nasdaq Marketplace Rules independence requirements. The functions of this committee include, among other things:

- identifying, reviewing and evaluating candidates to serve on our board of directors consistent with criteria approved by our board of directors;
- evaluating director performance on the board and applicable committees of the board and determining whether continued service on our board is appropriate;
- evaluating, nominating and recommending individuals for membership on our board of directors; and
- evaluating nominations by stockholders of candidates for election to our board of directors.

Scientific Advisory Board

In January 2020, we formally established a Scientific Advisory Board to advise our management regarding our clinical and regulatory development programs and other customary matters. Our scientific advisors are experts in various areas of medicine including theoretical epidemiology, vaccine research and development, and biotechnology. Our Scientific Advisory Board is comprised of the following individuals:

- Sunetra Gupta, Ph.D. Professor of Theoretical Epidemiology at The University of Oxford, a leading voice in infectious disease globally;
- David Zarley, Ph.D., with more than 30 years of experience in vaccine research and development, including former leadership roles at Pfizer and Wyeth; and,
- following the consummation of this offering, John Rice, Ph.D., Managing Director at CincyTech with more than 30 years of biotechnology advising experience.

Code of Business Conduct and Ethics

Prior to the consummation of this offering, our board of directors will adopt a written code of business conduct and ethics that applies to our directors, officers and employees, including our principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions. We intend to post on our website a current copy of the code and all disclosures that are required by law or Nasdaq Marketplace Rules concerning any amendments to, or waivers from, any provision of the code.

Board Leadership Structure

Our board of directors is free to select the Chairman of the board of directors and the Chief Executive Officer in a manner that it considers to be in the best interests of our company at the time of selection. Currently, Mr. Joseph Hernandez serves as our Chief Executive Officer. Three of our five members of our board of directors have been

deemed to be “independent” by the board of directors, which we believe provides sufficient independent oversight of our management. Because we have a non-executive Chairman of the board of directors, our board of directors has not designated a lead independent director.

Our board of directors, as a whole and also at the committee level, plays an active role overseeing the overall management of our risks. Our Audit Committee reviews risks related to financial and operational items with our management and our independent registered public accounting firm. Our board of directors is in regular contact with our Chief Executive Officer, who reports directly to the board of directors and who supervise day-to-day risk management.

Appointment Rights

Pursuant to our amended and restated certificate of incorporation as currently in effect prior to the consummation of this offering, certain of our stockholders had rights to appoint members of our board of directors. Pursuant to these rights, of our current directors, Michael Venerable and John Rice were appointed by holders of our Series Seed Preferred Stock. These rights will terminate upon the consummation of this offering.

Role of Board in Risk Oversight Process

We face a number of risks, including those described under the caption “Risk Factors” contained elsewhere in this prospectus. Our board of directors believes that risk management is an important part of establishing, updating and executing on our business strategy. Our board of directors has oversight responsibility relating to risks that could affect the corporate strategy, business objectives, compliance, operations, and the financial condition and performance of our company. Our board of directors focuses its oversight on the most significant risks facing us and on our processes to identify, prioritize, assess, manage and mitigate those risks. Our board of directors receives regular reports from members of our senior management on areas of material risk to us, including strategic, operational, financial, legal and regulatory risks. While our board of directors has an oversight role, management is principally tasked with direct responsibility for management and assessment of risks and the implementation of processes and controls to mitigate their effects on us.

Potential Conflicts of Interest

Subject to certain non-compete restrictions, our chief executive officer, Joseph Hernandez, and other key personnel may pursue other business or investment ventures while employed with us. Accordingly, they may have conflicts of interest in allocating time among various business activities and potentially competitive fiduciary and pecuniary interests that conflict with our interests. See “Risk Factors — Our Chief Executive Officer, Joseph Hernandez, holds certain management positions and directorships of other companies and may allocate his time to such other businesses, which may cause conflicts of interest in his determination as to how much time to devote to our affairs and potentially competitive fiduciary and pecuniary interests that conflict with our interests.” For a complete discussion of the business affairs of our officers, directors and other personnel, please see “Management — Executive Officers and Directors.” Any such additional business activities or ventures may present conflicts to our interests. We do not believe that any such potential conflicts would materially affect our ability to conduct our operations.

Our executive officers are supported by Ronald Cobb, Brian Price and Andrew Skibo, who provide valuable technical and strategic capabilities to us. They are not currently required to commit their full time to our affairs. As such, they may allocate their time to other businesses. From time to time, those other commitments may limit the nature of services that Messrs. Cobb, Price and Skibo provide to our Company, for instance, where such activities may involve overlapping industries and products. If these individuals’ other business affairs require them to devote substantial amounts of time to such affairs in excess of their current commitment levels, it could limit their ability to devote time or resources to our affairs, which may have a negative impact on our ability to complete our plan of operations.

EXECUTIVE AND DIRECTOR COMPENSATION

The following table sets forth total compensation paid to our named executive officers for the years ended December 31, 2020 and 2019. Individuals we refer to as our “named executive officers” include our Chief Executive Officer and our two other most highly compensated executive officers whose salary and bonus for services rendered in all capacities exceeded \$100,000 during the fiscal year ended December 31, 2020.

Name and Principal Position	Year	Salary (\$)	Bonus (\$)	Option Awards (\$)⁽²⁾	Non-Equity Incentive Plan Compensation (\$)	Nonqualified Deferred Compensation Earnings (\$)	All Other Compensation (\$)	Total (\$)
Joseph Hernandez Chief Executive Officer	2020	420,000	—	—	—	—	—	420,000
	2019	420,000	—	—	—	—	—	420,000
Brian Price Head of Technology Strategy	2020	122,979	—	—	—	—	3,500	126,479
	2019	83,333	—	1,480	—	—	—	84,813

- (1) Mr. Price resigned from his position as Chief Operating Officer, effective as of August 15, 2020 and became a consultant for the Company.
- (2) Consists of exercisable options to purchase 29,600, shares of common stock.

Employment Agreements of Named Executive Officers

We have entered or, upon the consummation of this offering, will enter into various employment agreements with certain of our executive officers. Set forth below is a summary of many of the material provisions of such agreements, which summaries do not purport to contain all of the material terms and conditions of each such agreement.

Joseph Hernandez

Effective upon the closing of this offering, we will enter into an employment agreement with Mr. Hernandez, pursuant to which he is employed as the Chief Executive Officer of the Company, which supersedes Mr. Hernandez’s prior consulting agreement with the Company. The employment agreement provides for an annual base salary, subject to annual increases in the discretion of our compensation committee, the Company, and an annual performance bonus. Pursuant to the employment agreement, following the completion of this offering, Mr. Hernandez’s base salary will be \$595,000. The annual performance bonus will be up to 50% of annual base salary (the “Target Annual Bonus”), with the actual bonus being based upon the level of achievement of annual Company and individual performance objectives for such fiscal year, as determined by our compensation committee.

In the event that Mr. Hernandez’s employment is terminated by the Company without cause (as defined in the employment agreement), or if Mr. Hernandez terminates his employment for “Good Reason” (as defined in the employment agreement), in addition to accrued unpaid salary, reimbursements and vacation days, he will be entitled to certain severance payments and benefits, including: (i) any unpaid annual bonus in respect of any completed fiscal year that has ended prior to the date of such termination; (ii) subject to certain conditions set forth in the employment agreement, an amount equal to (A) the Target Annual Bonus otherwise for the fiscal year in which such termination occurred, assuming Mr. Hernandez had remained employed through the applicable payment date, multiplied by (B) a fraction, the numerator of which is the number of days elapsed from the commencement of such fiscal year through the date of such termination and the denominator of which is 365 (or 366, as applicable); (iii) a payment equal to twelve (12) months of his base salary; and (iv) payment of an amount equal to the difference between the monthly COBRA premium cost and the monthly contribution paid by active employees for the same coverage for eighteen months following his termination. The employment agreement also provides that if a change in control (as defined in the employment agreement) occurs, and during the period commencing three months prior to a change in control and ending on the eighteen (18)-month anniversary of the change in control, Mr. Hernandez is terminated without cause or he resigns for good reason, Mr. Hernandez will be entitled to (i) any unpaid annual bonus in respect of any completed fiscal year that has ended prior to the date of such termination; (ii) subject to certain conditions set forth in the employment agreement, an amount equal to (A) the Target Annual Bonus otherwise for the fiscal year in which such termination occurred, assuming Mr. Hernandez had remained employed

through the applicable payment date, multiplied by (B) a fraction, the numerator of which is the number of days elapsed from the commencement of such fiscal year through the date of such termination and the denominator of which is 365 (or 366, as applicable); (iii) severance of 18 months' salary; and (iv) payment of an amount equal to the difference between the monthly COBRA premium cost and the monthly contribution paid by active employees for the same coverage for eighteen months following his termination. Additionally, all, any unvested portion of the equity awards held subject to time-vesting held by Mr. Hernandez will automatically vest.

The employment agreement is governed by the laws of the State of Delaware and contains non-solicitation and non-competition covenants (each of which remains in effect during the term of employment and for six months following termination of employment) and confidentiality, trade secrets and assignment of intellectual property clauses.

Pursuant to the non-solicitation and non-competition covenants, Mr. Hernandez has agreed to not directly or indirectly solicit any comparable business from a broad category of customers, request or advise customers to curtail, cancel, or withdraw its business from Blue Water Vaccines, aid any other entity in obtaining business from customers that is comparable or similar to any products or services provided by Blue Water Vaccines or otherwise interfere with any transaction, agreement, business relationship, and/or business opportunity between Blue Water Vaccines and any customer or potential customer of the Company.

During the term of employment and for a period of six months after termination ("the Post-Termination Restricted Period"), Mr. Hernandez is prohibited from recruiting, encouraging, soliciting, or inducing, or in any manner attempting to recruit, encourage, solicit, or induce, any person employed by or engaged by Blue Water Vaccines or its subsidiaries to terminate such Person's employment or services (or in the case of a consultant, materially reducing such services) with Blue Water Vaccines or its subsidiaries, hiring, or engaging any individual who was employed by or providing services to Blue Water Vaccines or its subsidiaries within the six (6) month period prior to the date of such hiring or engagement, or encouraging, soliciting, or inducing, or in any manner attempting to encourage, solicit, or induce, any current or prospective client, customer, licensee, supplier, or other business relation of the Company Group, or any such relation that was a client, customer, licensee or other business relationship within the prior six (6) month period to cease doing business with or reduce the amount of business conducted with Blue Water Vaccines or its subsidiaries, or in any way interfering with the relationship between any such party and Blue Water Vaccines or its subsidiaries.

Brian Price — Employment Agreement

On August 15, 2019, we entered into an employment agreement with Mr. Brian Price, which was subsequently superseded by the consultancy agreement described below, pursuant to which he was employed in the capacity of the Chief Operating Officer of the Company. The employment agreement was for a term of one (1) year, and was subject to automatic renewal for successive one (1) year terms upon the mutual agreement between Mr. Price and the Company. The employment agreement provided for an annual base salary of two hundred thousand dollars (\$200,000), subject to an annual review by the Board of the Company. Additionally, the employment agreement contemplated: (a) an annual bonus of up to 30% of the base salary; (b) four (4) weeks of paid vacation during each calendar year, subject to the approval of the CEO; (c) reimbursement for medical insurance premiums of up to \$2,000.00 per month, which was to continue until the Company offered comprehensive medical coverage (among others). Furthermore, the employment agreement contemplated an issuance of employee options to Mr. Price, equal to 2.5% of the then-available equity of the Company, under the terms of the Company's 2019 Equity Incentive Plan.

The employment agreement was terminable by the Company without cause (as defined in the employment agreement) or by Mr. Price for "Good Reason" (as defined in the employment agreement); and, in the event of such termination, the employment agreement entitled Mr. Price to receive any accrued unpaid salary, reimbursements and vacation days, as well as certain severance payments and benefits such as: a lump sum payment equal to six (6) months of base salary.

The employment agreement was governed by the laws of the State of New York, and contained non-solicitation and non-competition covenants (each of which remained in effect for the term of employment and for one (1) year following termination of employment), as well as confidentiality and non-disclosure, trade secrets and assignment of intellectual property clauses.

Brian Price — Consulting Agreement

On August 17, 2020, we entered into a consulting agreement with Mr. Brian Price, pursuant to which we retained Mr. Price's services as a consultant to the Company in the capacity of an "independent contractor" and not as an employee or agent of the Company. The term of the consulting agreement was one year and is subject to renewal by mutual agreement between Mr. Price and the Company. The Company and Mr. Price renewed the consulting agreement on August 16, 2021. Pursuant to the consulting agreement, Mr. Price's compensation includes an hourly rate of two hundred and fifty dollars (\$250.00) for services provided to the Company, along with a reimbursement for all reasonable and necessary expenses incurred by Mr. Price in connection with, or related to, the performance of his services under the consulting agreement. Under the terms of the consulting agreement, Mr. Price is not entitled to any benefits, coverages or privileges available to employees of the Company, including, but not limited to: social security, unemployment, medical or pension payments.

The consulting agreement is terminable by the Company and by Mr. Price (without prejudice to any right or remedy that either may have due to a failure of the other to perform obligations under the terms of the consulting agreement) upon thirty (30) days' prior written notice. In the event of early termination, Mr. Price is entitled to payment for services performed and expenses paid or incurred prior to the effective date of the termination (subject to certain limitations on reimbursement of expenses, as defined in the consulting agreement). Additionally, if Mr. Price breaches or threatens a breach of certain provisions (defined in the consulting agreement), the Company may terminate the consulting agreement, effective immediately upon receipt of written notice.

The consulting agreement is governed by the laws of the State of Ohio, and contains non-solicitation and non-competition covenants (each of which remained in effect for the term of the consulting agreement and for one (1) year following the termination of the consulting agreement), as well as confidentiality and non-disclosure, trade secrets and assignment of intellectual property clauses. The consulting agreement requires that Mr. Price was not authorized to assume or create any obligation or responsibility (express or implied) on behalf of or in the name of the Company.

Potential Payments Upon Termination or Change-in-Control

See "Employment Agreements of Named Executive Officers" above.

Employee Benefit Plans

The principal features of our equity incentive plans are summarized below. These summaries are qualified in their entirety by reference to the actual text of the plans, which are filed as exhibits to the registration statement of which this prospectus forms a part.

2021 Equity Incentive Plan

Our board of directors adopted our 2021 Plan in 2021, and we expect our stockholders to approve our 2021 Plan prior to the completion of this offering. Our 2021 Plan is a successor to and continuation of our 2019 Plan. Our 2021 Plan will become effective on the date of the underwriting agreement related to this offering. The 2021 Plan came into existence upon its adoption by our board of directors, but no grants will be made under the 2021 Plan prior to its effectiveness. Once the 2021 Plan is effective, no further grants will be made under the 2019 Plan.

Awards. Our 2021 Plan provides for the grant of incentive stock options, or ISOs, within the meaning of Section 422 of the Internal Revenue Code, or the Code, to employees, including employees of any parent or subsidiary, and for the grant of nonstatutory stock options, or NSOs, stock appreciation rights, restricted stock awards, restricted stock unit awards, performance awards and other forms of awards to employees, directors and consultants, including employees and consultants of our affiliates.

Authorized Shares. Initially, the maximum number of shares of our common stock that may be issued under our 2021 Plan after it becomes effective will not exceed _____ shares of our common stock, which is the sum of (i) _____ new shares, plus (ii) an additional number of shares not to exceed _____, consisting of (A) shares that remain available for the issuance of awards under our 2019 Plan as of immediately prior to the time our 2021 Plan becomes effective and (B) shares of our common stock subject to outstanding stock options or other stock awards

granted under our 2019 Plan that, on or after the 2021 Plan becomes effective, terminate or expire prior to exercise or settlement; are not issued because the award is settled in cash; are forfeited because of the failure to vest; or are reacquired or withheld (or not issued) to satisfy a tax withholding obligation or the purchase or exercise price, if any, as such shares become available from time to time. The maximum number of shares of our common stock that may be issued on the exercise of ISOs under our 2021 Plan is _____ shares.

Shares subject to stock awards granted under our 2021 Plan that expire or terminate without being exercised in full or that are paid out in cash rather than in shares do not reduce the number of shares available for issuance under our 2021 Plan. Shares withheld under a stock award to satisfy the exercise, strike or purchase price of a stock award or to satisfy a tax withholding obligation do not reduce the number of shares available for issuance under our 2021 Plan. If any shares of our common stock issued pursuant to a stock award are forfeited back to or repurchased or reacquired by us (i) because of a failure to meet a contingency or condition required for the vesting of such shares, (ii) to satisfy the exercise, strike or purchase price of an award or (iii) to satisfy a tax withholding obligation in connection with an award, the shares that are forfeited or repurchased or reacquired will revert to and again become available for issuance under the 2010 Plan. Any shares previously issued which are reacquired in satisfaction of tax withholding obligations or as consideration for the exercise or purchase price of a stock award will again become available for issuance under the 2021 Plan.

Plan Administration. Our Board of Directors has assigned the authority to administer the 2021 Plan to our Compensation Committee, but may, at any time, re-vest in itself some or all of the power delegated to our Compensation Committee. The Compensation Committee may delegate to one or more of our officers the authority to (i) designate employees (other than officers) to receive specified stock awards and (ii) determine the number of shares subject to such stock awards. Under our 2021 Plan, our Compensation Committee has the authority to determine award recipients, grant dates, the numbers and types of stock awards to be granted, the applicable fair market value, and the provisions of each stock award, including the period of exercisability and the vesting schedule applicable to a stock award.

Stock Options. ISOs and NSOs are granted under stock option agreements in a form approved by the Compensation Committee. The Compensation Committee determines the exercise price for stock options, within the terms and conditions of the 2021 Plan, provided that the exercise price of a stock option generally cannot be less than 100% of the fair market value of our common stock on the date of grant. Options granted under the 2021 Plan vest at the rate specified in the stock option agreement as determined by the Compensation Committee.

The Compensation Committee determines the term of stock options granted under the 2021 Plan, up to a maximum of 10 years. Unless the terms of an optionholder's stock option agreement, or other written agreement between us and the recipient approved by the Compensation Committee, provide otherwise, if an optionholder's service relationship with us or any of our affiliates ceases for any reason other than disability, death or cause, the optionholder may generally exercise any vested options for a period of three months following the cessation of service. This period may be extended in the event that exercise of the option is prohibited by applicable securities laws. If an optionholder's service relationship with us or any of our affiliates ceases due to death, or an optionholder dies within a certain period following cessation of service, the optionholder or a beneficiary may generally exercise any vested options for a period of 18 months following the date of death. If an optionholder's service relationship with us or any of our affiliates ceases due to disability, the optionholder may generally exercise any vested options for a period of 12 months following the cessation of service. In the event of a termination for cause, options generally terminate upon the termination date. In no event may an option be exercised beyond the expiration of its term.

Acceptable consideration for the purchase of common stock issued upon the exercise of a stock option will be determined by the Compensation Committee and may include (i) cash, check, bank draft or money order, (ii) a broker-assisted cashless exercise, (iii) the tender of shares of our common stock previously owned by the optionholder, (iv) a net exercise of the option if it is an NSO or (v) other legal consideration approved by the Board of Directors.

Unless the Compensation Committee provides otherwise, options or stock appreciation rights generally are not transferable except by will or the laws of descent and distribution. Subject to approval of the Compensation Committee or a duly authorized officer, an option may be transferred pursuant to a domestic relations order, official marital settlement agreement or other divorce or separation instrument.

Tax Limitations on ISOs. The aggregate fair market value, determined at the time of grant, of our common stock with respect to ISOs that are exercisable for the first time by an award holder during any calendar year under all of our stock plans may not exceed \$100,000. Options or portions thereof that exceed such limit will generally be treated as NSOs. No ISO may be granted to any person who, at the time of the grant, owns or is deemed to own stock possessing more than 10% of our total combined voting power or that of any of our parent or subsidiary corporations unless (i) the option exercise price is at least 110% of the fair market value of the stock subject to the option on the date of grant and (ii) the term of the ISO does not exceed five years from the date of grant.

Restricted Stock Unit Awards. Restricted stock unit awards are granted under restricted stock unit award agreements in a form approved by the Compensation Committee. Restricted stock unit awards may be granted in consideration for any form of legal consideration that may be acceptable to our board of directors and permissible under applicable law. A restricted stock unit award may be settled by cash, delivery of stock, a combination of cash and stock as deemed appropriate by the Compensation Committee or in any other form of consideration set forth in the restricted stock unit award agreement. Additionally, dividend equivalents may be credited in respect of shares covered by a restricted stock unit award. Except as otherwise provided in the applicable award agreement, or other written agreement between us and the recipient approved by the Compensation Committee, restricted stock unit awards that have not vested will be forfeited once the participant's continuous service ends for any reason.

Restricted Stock Awards. Restricted stock awards are granted under restricted stock award agreements in a form approved by the Compensation Committee. A restricted stock award may be awarded in consideration for cash, check, bank draft or money order, past or future services to us or any other form of legal consideration that may be acceptable to our board of directors and permissible under applicable law. The Compensation Committee determines the terms and conditions of restricted stock awards, including vesting and forfeiture terms. If a participant's service relationship with us ends for any reason, we may receive any or all of the shares of common stock held by the participant that have not vested as of the date the participant terminates service with us through a forfeiture condition or a repurchase right.

Stock Appreciation Rights. Stock appreciation rights are granted under stock appreciation right agreements in a form approved by the Compensation Committee. The Compensation Committee determines the strike price for a stock appreciation right, which generally cannot be less than 100% of the fair market value of our common stock on the date of grant. A stock appreciation right granted under the 2021 Plan vests at the rate specified in the stock appreciation right agreement as determined by the Compensation Committee. Stock appreciation rights may be settled in cash or shares of common stock or in any other form of payment as determined by the Board and specified in the stock appreciation right agreement.

The Compensation Committee determines the term of stock appreciation rights granted under the 2021 Plan, up to a maximum of 10 years. If a participant's service relationship with us or any of our affiliates ceases for any reason other than cause, disability or death, the participant may generally exercise any vested stock appreciation right for a period of three months following the cessation of service. This period may be further extended in the event that exercise of the stock appreciation right following such a termination of service is prohibited by applicable securities laws. If a participant's service relationship with us, or any of our affiliates, ceases due to disability or death, or a participant dies within a certain period following cessation of service, the participant or a beneficiary may generally exercise any vested stock appreciation right for a period of 12 months in the event of disability and 18 months in the event of death. In the event of a termination for cause, stock appreciation rights generally terminate immediately upon the occurrence of the event giving rise to the termination of the individual for cause. In no event may a stock appreciation right be exercised beyond the expiration of its term.

Performance Awards. The 2021 Plan permits the grant of performance awards that may be settled in stock, cash or other property. Performance awards may be structured so that the stock or cash will be issued or paid only following the achievement of certain pre-established performance goals during a designated performance period. Performance awards that are settled in cash or other property are not required to be valued in whole or in part by reference to, or otherwise based on, the common stock.

The performance goals may be based on any measure of performance selected by the board of directors or the Compensation Committee. The performance goals may be based on company-wide performance or performance of one or more business units, divisions, affiliates or business segments, and may be either absolute or relative to the performance of one or more comparable companies or the performance of one or more relevant indices. Unless specified otherwise by the board of directors at the time the performance award is granted, the board

or Compensation Committee will appropriately make adjustments in the method of calculating the attainment of performance goals as follows: (i) to exclude restructuring and/or other nonrecurring charges; (ii) to exclude exchange rate effects; (iii) to exclude the effects of changes to generally accepted accounting principles; (iv) to exclude the effects of any statutory adjustments to corporate tax rates; (v) to exclude the effects of items that are “unusual” in nature or occur “infrequently” as determined under generally accepted accounting principles; (vi) to exclude the dilutive effects of acquisitions or joint ventures; (vii) to assume that any portion of our business which is divested achieved performance objectives at targeted levels during the balance of a performance period following such divestiture; (viii) to exclude the effect of any change in the outstanding shares of our common stock by reason of any stock dividend or split, stock repurchase, reorganization, recapitalization, merger, consolidation, spin-off, combination or exchange of shares or other similar corporate change or any distributions to common stockholders other than regular cash dividends; (ix) to exclude the effects of stock based compensation and the award of bonuses under our bonus plans; (x) to exclude costs incurred in connection with potential acquisitions or divestitures that are required to be expensed under generally accepted accounting principles; (xi) to exclude the goodwill and intangible asset impairment charges that are required to be recorded under generally accepted accounting principles; and (xi) to exclude the effects of the timing of acceptance for review and/or approval of submissions to the U.S. Food and Drug Administration or any other regulatory body.

Other Stock Awards. The Compensation Committee may grant other awards based in whole or in part by reference to our common stock. The Compensation Committee will set the number of shares under the stock award (or cash equivalent) and all other terms and conditions of such awards.

Non-Employee Director Compensation Limit. The aggregate value of all compensation granted or paid to any non-employee director with respect to any calendar year, including awards granted and cash fees paid by us to such non-employee director, will not exceed \$ _____ in total value; provided that such amount will increase to _____ for the first year for newly appointed or elected non-employee directors.

Changes to Capital Structure. In the event there is a specified type of change in our capital structure, such as a stock split, reverse stock split or recapitalization, appropriate adjustments will be made to (i) the class and maximum number of shares reserved for issuance under the 2021 Plan, (ii) the class and maximum number of shares by which the share reserve may increase automatically each year, (iii) the class and maximum number of shares that may be issued on the exercise of ISOs and (iv) the class and number of shares and exercise price, strike price or purchase price, if applicable, of all outstanding stock awards.

Corporate Transactions. The following applies to stock awards under the 2021 Plan in the event of a corporate transaction (as defined in the 2021 Plan), unless otherwise provided in a participant’s stock award agreement or other written agreement with us or one of our affiliates or unless otherwise expressly provided by the Board of Directors or Compensation Committee at the time of grant.

In the event of a corporate transaction, any stock awards outstanding under the 2021 Plan may be assumed, continued or substituted for by any surviving or acquiring corporation (or its parent company), and any reacquisition or repurchase rights held by us with respect to the stock award may be assigned to the successor (or its parent company). If the surviving or acquiring corporation (or its parent company) does not assume, continue or substitute for such stock awards, then (i) with respect to any such stock awards that are held by participants whose continuous service has not terminated prior to the effective time of the corporate transaction, or current participants, the vesting (and exercisability, if applicable) of such stock awards will be accelerated in full to a date prior to the effective time of the corporate transaction (contingent upon the effectiveness of the corporate transaction), and such stock awards will terminate if not exercised (if applicable) at or prior to the effective time of the corporate transaction, and any reacquisition or repurchase rights held by us with respect to such stock awards will lapse (contingent upon the effectiveness of the corporate transaction), and (ii) any such stock awards that are held by persons other than current participants will terminate if not exercised (if applicable) prior to the effective time of the corporate transaction, except that any reacquisition or repurchase rights held by us with respect to such stock awards will not terminate and may continue to be exercised notwithstanding the corporate transaction.

In the event a stock award will terminate if not exercised prior to the effective time of a corporate transaction, the board of directors may provide, in its sole discretion, that the holder of such stock award may not exercise such stock award but instead will receive a payment equal in value to the excess (if any) of (i) the per share amount payable to holders of common stock in connection with the corporate transaction over (ii) any per share exercise

price payable by such holder, if applicable. In addition, any escrow, holdback, earn out or similar provisions in the definitive agreement for the corporate transaction may apply to such payment to the same extent and in the same manner as such provisions apply to the holders of common stock.

Plan Amendment or Termination. Our board of directors has the authority to amend, suspend or terminate our 2021 Plan, provided that such action does not materially impair the existing rights of any participant without such participant's written consent. Certain material amendments also require the approval of our stockholders. No ISOs may be granted after the tenth anniversary of the date our board of directors adopts our 2021 Plan. No stock awards may be granted under our 2021 Plan while it is suspended or after it is terminated.

2019 Equity Incentive Plan

Our board of directors adopted and our stockholders approved our 2019 Equity Incentive Plan (the "2019 Plan") in July 2019 for grants of awards to employees, directors, officers and consultants of us or any of our subsidiaries. Once the 2021 Plan is effective, no further grants will be made under the 2019 Plan. However, the 2019 Plan will continue to govern the terms and conditions of the outstanding awards previously granted under the 2019 Plan.

Awards. Our 2019 Plan provides for the grant of stock awards (collectively, "Stock Awards") to employees, directors, officers and consultants of us or any of our subsidiaries, consisting of (i) incentive stock options, ("ISOs"), within the meaning of Section 422 of the Internal Revenue Code (the "Code"); (ii) nonstatutory stock options ("NSOs"); (iii) stock appreciation rights; (iv) restricted stock awards; (v) restricted stock unit awards, and (vi) other forms of awards.

Authorized Shares. As of September 30, 2021, stock options covering 195,160 shares, each with an exercise price of \$0.05 per share were the only outstanding Stock Awards outstanding under our 2019 Plan, and 154,840 shares of our common stock remained available for the future grant of awards under our 2019 Plan, which upon the adoption of the 2021 Plan, will become issuable under the 2021 Plan.

Plan Administration. The 2019 Plan may be administered by our board of directors, and our board of directors may delegate such administration to a committee of the board of directors (as applicable, the "Administrator"). The Administrator, in its discretion, selects the individuals to whom awards may be granted, the time or times at which such awards are granted and the terms and conditions of such awards.

Stock Options. Stock options entitle the holder to purchase a specified number of shares of common stock at a specified price (the exercise price), subject to the terms and conditions of the stock option grant. Our board of directors may grant either incentive stock options, which must comply with Code Section 422, or nonqualified stock options. ISO's may only be granted to employees of the Company or a "parent corporation" or "subsidiary corporation" thereof (as such terms are defined in Sections 424(e) and 424(f) of the Code). Our Administrator sets exercise prices and terms and conditions, except that stock options must be granted with an exercise price not less than 100% of the fair market value of our common stock on the date of grant. Unless our Administrator determines otherwise, fair market value means, as of a given date, the closing price of our common stock. At the time of grant, our board of directors determines the terms and conditions of stock options, including the quantity, exercise price, vesting periods, term (which may not exceed 10 years) and other conditions on exercise. Pursuant to the 2019 Plan, we may only issue 350,000 ISO's.

Eligibility. Awards may be granted under the 2019 Plan to officers, employees, directors, officers and of us and our subsidiaries. Incentive stock options may be granted only to employees of us or our subsidiaries.

Restricted Stock, Restricted Stock Units and Other Stock-Based Awards. Our board of directors may grant awards of restricted stock, which are shares of common stock subject to specified restrictions, and restricted stock units, or RSUs, which represent the right to receive shares of our common stock in the future. These awards may be made subject to repurchase, forfeiture or vesting restrictions at the discretion of our board of directors discretion. The restrictions may be based on continuous service with us or the attainment of specified performance goals, as determined by the board of directors. Stock units may be paid in stock or cash or a combination of stock and cash, as determined by the board of directors. Other stock awards valued in whole or in part by reference to, or otherwise

based on, Common Stock, including the appreciation in value thereof (e.g., options or stock rights with an exercise price or strike price less than one hundred percent (100%) of the fair market value of the common stock at the time of grant) may be granted either alone or in addition to stock awards provided for under the 2019 Plan.

Stock Appreciation Rights. Upon exercise, SARs entitle the holder to receive payment per share in stock or cash, or in a combination of stock and cash, equal to the excess of the share's fair market value on the date of exercise over the aggregate strike price of the number of Common Stock equivalents with respect to which the Participant is exercising the SAR on such date (the "grant price". Exercise of a SAR issued in tandem with a stock option will reduce the number of shares underlying the related stock option to the extent of the SAR exercised. The term of a SAR cannot exceed 10 years.

Changes to Capital Structure. In the event there is a specified type of change in our capital structure, such as a stock split, reverse stock split or recapitalization, appropriate adjustments will be made to (i) the class and maximum number of shares subject to the 2019 Plan, (ii) the class and maximum number of shares that may be issued on the exercise of ISOs and (iii) the class and number of shares and exercise price, strike price or purchase price, if applicable, of all outstanding stock awards.

Corporate Transactions. The following applies to Stock Awards under the 2019 Plan in the event of a corporate transaction (as defined in the 2019 Plan), unless otherwise provided in a participant's stock award agreement or other written agreement with us or one of our affiliates or unless otherwise expressly provided by the Board of Directors at the time of grant.

In the event of a corporate transaction, the board of directors may take one of the following actions, contingent on the completion of the corporate transaction: (i) arrange for the surviving or acquiring corporation (or its parent company) to assume, continue or substitute the Stock Award for a similar stock award; (ii) arrange for the assignment of any reacquisition or repurchase rights held by the Company in respect of common stock issued pursuant to the Stock Award to the surviving or acquiring corporation (or its parent company); (iii) accelerate the vesting (in whole or in part) of the Stock Award; (iv) arrange for the lapse, in whole or in part, of any reacquisition or repurchase rights held by the Company with respect to the Stock Award; (v) cancel or arrange for the cancellation of the Stock Award, to the extent not vested or not exercised prior to the effective time of the corporate transaction, in exchange for such cash consideration that the Board of Directors; and (vi) make a payment equal to the excess, if any, of (A) the value of the property the participant would have received upon the exercise of the Stock Award immediately prior to the effective time of the corporate transaction, over (B) any exercise price payable by such holder in connection with such exercise. The Board of Directors need not take the same action or actions with respect to all Stock Awards or portions thereof or with respect to all participants. The Board of Directors may also take different actions with respect to the vested and unvested portions of a Stock Award.

Additionally, under the 2019 Plan, a Stock Award may be subject to additional acceleration of vesting and exercisability upon or after a Change in Control (as defined in the 2019 Plan) as may be provided in the Grant Agreement for such Stock Award or as may be provided in any other written agreement between the participant and the Company or any of its subsidiaries which may employ the participant, but in the absence of such provision, no such acceleration will occur.

Plan Amendment or Termination. Our board of directors has the authority to amend, suspend or terminate our 2019 Plan, subject to certain conditions, including that such action does not materially impair the existing rights of any participant without such participant's written consent. Certain material amendments also require the approval of our stockholders. No ISOs may be granted after the tenth anniversary of the date our board of directors adopted our 2019 Plan.

Limitation of Liability and Indemnification Matters

Our Amended and Restated Certificate of Incorporation, which will become effective immediately after the completion of this offering, and our Amended and Restated Bylaws, which will become effective immediately prior to the completion of this offering, limits our directors' liability, and may indemnify our directors and officers to the fullest extent permitted under Delaware General Corporation Law, or the DGCL. The DGCL provides that directors of a corporation will not be personally liable for monetary damages for breach of their fiduciary duties as directors, except for liability for any:

- transaction from which the director derives an improper personal benefit;

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- act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;
- unlawful payment of dividends or redemption of shares; or
- breach of a director's duty of loyalty to the corporation or its stockholders.

These limitations of liability do not apply to liabilities arising under federal securities laws and do not affect the availability of equitable remedies such as injunctive relief or recession.

The DGCL and our Amended and Restated Bylaws provide that we will, in certain situations, indemnify our directors and officers and may indemnify other employees and other agents, to the fullest extent permitted by law. Any indemnified person is also entitled, subject to certain limitations, to advancement, direct payment or reimbursement of reasonable expenses (including attorneys' fees and disbursements) in advance of the final disposition of the proceeding.

In addition, we have entered, and intend to continue to enter, into separate indemnification agreements with some of our directors and officers. These indemnification agreements, among other things, require us to indemnify our directors and officers for certain expenses, including attorneys' fees, judgments, fines and settlement amounts incurred by a director or officer in any action or proceeding arising out of their services as a director or officer, or any other company or enterprise to which the person provides services at our request.

We maintain a directors' and officers' insurance policy pursuant to which our directors and officers are insured against liability for actions taken in their capacities as directors and officers. We believe that these provisions in our Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws and these indemnification agreements are necessary to attract and retain qualified persons as directors and officers.

Insofar as indemnification for liabilities arising under the Securities Act of 1933, as amended, or the Securities Act, may be permitted to directors, officers or control persons, in the opinion of the SEC, such indemnification is against public policy, as expressed in the Securities Act and is therefore unenforceable.

PRINCIPAL STOCKHOLDERS

The following table sets forth certain information concerning the ownership of our common stock as of September 30, 2021, with respect to: (i) each person, or group of affiliated persons, known to us to be the beneficial owner of more than five percent of our common stock; (ii) each of our directors; (iii) each of our named executive officers; and (iv) all of our current directors and executive officers as a group.

Applicable percentage ownership is based on 2,172,371 shares of common stock outstanding as of September 30, 2021 (after giving effect to the conversion of all outstanding shares of convertible preferred stock and accrued dividends into an aggregate of up to 1,372,371 shares of common stock immediately prior to the offering).

The percentage of beneficial ownership after this offering assumes the sale and issuance of shares of common stock in this offering and no exercise by the underwriters of their option to purchase additional shares of common stock.

We have determined beneficial ownership in accordance with the rules of the SEC. These rules generally attribute beneficial ownership of securities to persons who possess sole or shared voting or investment power with respect to such securities. In addition, pursuant to such rules, we deemed outstanding shares of common stock subject to options or warrants held by that person that are currently exercisable or exercisable within 60 days of September 30, 2021. We did not deem such shares outstanding, however, for the purpose of computing the percentage ownership of any other person. Except as indicated by the footnotes below, we believe, based on the information furnished to us, that the beneficial owners named in the table below have sole voting and investment power with respect to all shares of our common stock that they beneficially own, subject to applicable community property laws.

Name and Address of Beneficial Owner ⁽¹⁾	Beneficial Ownership Prior to Offering		Beneficial Ownership After the Offering	
	Number of Shares	Percentage	Number of Shares	Percentage
5% Stockholders				
Cincinnati Cornerstone Investors BWV I, LLC	880,838	⁽¹⁾ 40.55%		
CincyTech Fund IV, LLC	201,877	⁽²⁾ 9.24%		
Named Executive Officers and Directors				
Joseph Hernandez	800,000	36.82%		
Kimberly Murphy	5,262	⁽³⁾ *		
John Rice, Ph.D.		⁽³⁾ *		
Allan L. Shaw	5,262	⁽³⁾ *		
Michael Venerable				
James Sapirstein				
Brian Price	10,520	⁽⁴⁾ *		
All directors and named executive officers as a group (7 persons)		37.31%		

* Represents beneficial ownership of less than 1%.

(1) Consists of 880,838 shares of common stock (following the conversion of the preferred stock) held of record by Cincinnati Cornerstone Investors BWV I. Cincinnati Cornerstone Capital, LLC holds voting and dispositive power with respect to the shares of common stock held by Cincinnati Cornerstone Investors BWV I. The address for these entities is 2900 Reading Rd., Suite 410, Cincinnati, OH 45206.

(2) Consists of (i) 196,615 shares of common stock (following the conversion of preferred stock) held of record by CincyTech Fund IV, LLC and (ii) 5,262 shares of common stock underlying options that are currently exercisable within 60 days of September 30, 2021. CincyTech, LLC holds voting and dispositive power with respect to the shares of common stock held by CincyTech Fund IV, LLC. The address for these entities is 2900 Reading Rd., Suite 410, Cincinnati, OH 45206.

(3) Consists of 5,262 shares of common stock underlying options that are currently exercisable within 60 days of September 30, 2021.

(4) Consists of 10,520 shares of common stock underlying options that are currently exercisable within 60 days of September 30, 2021.

CERTAIN RELATIONSHIPS AND RELATED PARTY TRANSACTIONS

The following is a description of transactions since January 1, 2020 to which we were a party in which (i) the amount involved exceeded or will exceed the lesser of \$120,000 of one percent (1%) of our average total assets at year-end for the last two completed fiscal years and (ii) any of our directors, executive officers or holders of more than 5% of our capital stock, or any member of the immediate family of, or person sharing the household with, any of the foregoing persons, who had or will have a direct or indirect material interest, other than equity and other compensation, termination, change in control and other similar arrangements, which are described under “Executive and Director Compensation.”

Equity Financings

Series Seed Preferred Stock Financing

In July 2019, we sold an aggregate of 1,146,138 shares of our Series Seed Preferred Stock, par value \$0.00001 par value per share (the “Series Seed Stock”), at a purchase price of \$6.09 per share for an aggregate purchase price of \$6,979,980. The following table summarize purchases of our shares of Series Seed Stock by related persons:

Stockholder	Number of Shares of Series Seed Stock	Total Purchase Price (\$)
Cincinnati Cornerstone Investors BWV I, LLC	735,632	4,479,998.88
CincyTech Fund IV, LLC	164,203	999,996.27
Great American Insurance Company	82,101	499,995.09
Great American Life Insurance Company	82,101	499,995.09
John B. Berding Irrevocable Family Trust	82,101	499,995.09

Rights of Appointment

Our board of directors currently consists of five directors. Pursuant to our amended and restated certificate of incorporation in effect prior to this offering, certain of our stockholders, including our related parties, had rights to appoint members of our board of directors. See the section titled “Management — Appointment Rights.”

All rights to appoint directors will terminate upon the closing of this offering, although one currently serving director that was appointed prior to this offering will continue to serve pursuant to his appointment until the annual meeting of stockholders at which the term of their class of director expires.

Right of First Refusal and Co-Sale Agreement

We are party to a right of first refusal and co-sale agreement, pursuant to which we had a right to purchase (and certain other investors had the right to purchase in the case we did not exercise our right to purchase) shares of our capital stock which certain holders of our common stock propose to sell to other parties. The right of first refusal and co-sale agreement will terminate upon the completion of this offering.

Voting Agreement

We are party to a voting agreement under which certain holders of our capital stock have agreed as to the manner in which they will vote their shares of our capital stock on certain matters, including with respect to the election of directors.

The voting agreement will terminate upon the completion of this offering, at which time there will be no further contractual obligations regarding the manner in which shares are voted with respect to the election of our directors. Our directors hold office until their successors have been elected and qualified or until the earlier of their resignation or removal.

Other Transactions

Agreement with Blue Water Real Estate Holdings

We leased office space in November 28, 2018 from an affiliate of our chief executive officer, Blue Water Real Estate Holdings, Inc. Rental expense recorded for the years ended December 31, 2019, 2020, and through June 30, 2021 was \$66,308, \$66,308, and \$27,628, respectively. This lease was terminated on March 31, 2021; however, the company did not vacate the premises until May 26, 2021. As of the effective date of the registration statement of which this prospectus forms a part, we have no outstanding obligations under this agreement.

Consulting Agreement with Joseph Hernandez

On October 22, 2018, we entered into a Consulting Agreement with Joseph Hernandez, the Chief Executive Officer of Blue Water Vaccines. Consulting expense recorded for the years ended December 31, 2019, 2020, and through June 30, 2021 was \$420,000, \$420,000, and \$210,000, respectively. Pursuant to the Consulting Agreement, Joseph Hernandez provided us with consulting services, and we were required to pay an aggregate amount of \$1.16 million to Joseph Hernandez. As of June 30, 2021, we are obligated to pay a total of \$105,000.

Agreement with Blue Water Venture Partners

On October 22, 2018, we entered into a verbal agreement with Blue Water Venture Partners. Our CEO, Joe Hernandez, is the sole shareholder of Blue Water Ventures. Pursuant to the verbal agreement, Blue Water Venture Partners provided (i) the company's option fee to Oxford University Innovation, Ltd, (ii) a lease deposit to Blue Water Real Estate Holdings, Inc., (iii) purchased office furniture on behalf of the company and (iv) paid our rent for the period from November 28, 2019 through July 31, 2019. Expenses recorded for the year ended December 31, 2019, 2020 and through June 30, 2021 were \$35,000, \$0 and \$0, respectively. We were required to pay an aggregate amount of \$89,617 to Blue Water Venture Partners. As of the effective date of the registration statement of which this prospectus forms a part, we have no outstanding obligations under this agreement.

Indemnification of Officers and Directors

Our Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws, which will become effective in connection with the completion of this offering, will provide that we will indemnify each of our directors and officers to the fullest extent permitted by the DGCL. Further, we intend to enter into indemnification agreements with each of our directors and officers, and we have purchased a policy of directors' and officers' liability insurance that insures our directors and officers against the cost of defense, settlement or payment of a judgment under certain circumstances. For further information, see "Executive and Director Compensation — Limitations of Liability and Indemnification Matters."

Policies and Procedures for Related Party Transactions

All future transactions between us and our officers, directors or five percent stockholders, and respective affiliates will be on terms no less favorable than could be obtained from unaffiliated third parties and will be approved by a majority of our independent directors who do not have an interest in the transactions and who had access, at our expense, to our legal counsel or independent legal counsel.

To the best of our knowledge, during the past two fiscal years, other than as set forth above, there were no material transactions, or series of similar transactions, or any currently proposed transactions, or series of similar transactions, to which we were or are to be a party, in which the amount involved exceeds \$120,000, and in which any director or executive officer, or any security holder who is known by us to own of record or beneficially more than 5% of any class of our common stock, or any member of the immediate family of any of the foregoing persons, has an interest (other than compensation to our officers and directors in the ordinary course of business).

DESCRIPTION OF CAPITAL STOCK

The following is a summary of the rights of our common stock and preferred stock, certain provisions of our Amended and Restated Certificate of Incorporation and our Amended and Restated Bylaws as they will be in effect upon completion of this offering and applicable law. This summary does not purport to be complete and is qualified in its entirety by the provisions of our Amended and Restated Certificate of Incorporation and our Amended and Restated Bylaws, copies of which have been filed as exhibits to the registration statement and are incorporated by reference to our registration statement, of which this prospectus forms a part.

Authorized Capital Stock

Immediately prior to the completion of this offering and upon the filing of our Amended and Restated Certificate of Incorporation, our authorized capital stock will consist of _____ shares of common stock, par value \$0.00001 per share and _____ shares of preferred stock, par value \$0.00001 per share.

Common Stock

As of September 30, 2021, and assuming the conversion of all of our outstanding preferred stock and accrued dividends into common stock in connection with this offering, there were 2,172,371 shares of common stock issued and outstanding, no shares of common stock issuable upon exercise of outstanding warrants, and 195,160 shares of common stock issuable upon exercise of outstanding stock options.

Under the terms of our Amended and Restated Certificate of Incorporation, holders of our common stock are entitled to one vote for each share held on all matters submitted to a vote of stockholders, including the election of directors, and do not have cumulative voting rights. The holders of outstanding shares of common stock are entitled to receive dividends out of assets or funds legally available for the payment of dividends of such times and in such amounts as our board of directors from time to time may determine. Our common stock is not entitled to pre-emptive rights and is not subject to conversion or redemption. Upon liquidation, dissolution or winding up of our company, the assets legally available for distribution to stockholders are distributable ratably among the holders of our common stock after payment of liquidation preferences, if any, on any outstanding payment of other claims of creditors. The rights, preferences and privileges of holders of common stock are subject to and may be adversely affected by the rights of the holders of shares of any series of preferred stock that we may designate and issue in the future.

Preferred Stock

Upon the closing of this offering, we will have no shares of preferred stock designated or outstanding, but our board of directors will be authorized, without further action by the shareholders, to establish one or more class or series, and fix the relative rights and preferences of the company's undesignated capital stock.

Options

As of September 30, 2021, we had outstanding options to purchase an aggregate 195,160 shares of our common stock, each with an exercise price of \$0.05 per share.

Warrants

We have no outstanding warrants to purchase our common stock prior to the consummation of this offering. In connection with the offering, we will be providing the representative with a warrant to purchase shares of common stock. For more about these warrants see the section titled Underwriting — Representative's Warrants.

Anti-Takeover Provisions of Delaware Law and Our Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws

Section 203 of the Delaware General Corporation Law

We are subject to Section 203 of the DGCL, which prohibits a Delaware corporation from engaging in any business combination with any interested stockholder for a period of three years after the date that such stockholder became an interested stockholder, with the following exceptions:

- before such date, the board of directors of the corporation approved either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder;
- upon completion of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction began, excluding for purposes of determining the voting stock outstanding (but not the outstanding voting stock owned by the interested stockholder) those shares owned (i) by persons who are directors and also officers and (ii) employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or
- on or after such date, the business combination is approved by the board of directors and authorized at an annual or special meeting of the stockholders, and not by written consent, by the affirmative vote of at least $66\frac{2}{3}\%$ of the outstanding voting stock that is not owned by the interested stockholder.

Section 203 defines a “business combination” to include the following:

- any merger or consolidation involving the corporation and the interested stockholder;
- any sale, transfer, pledge or other disposition of 10% or more of the assets of the corporation involving the interested stockholder;
- subject to certain exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder;
- any transaction involving the corporation that has the effect of increasing the proportionate share of the stock or any class or series of the corporation beneficially owned by the interested stockholder; and
- the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits by or through the corporation.

In general, Section 203 defines an “interested stockholder” as an entity or person who, together with the person’s affiliates and associates, beneficially owns, or within three years prior to the time of determination of interested stockholder status did own, 15% or more of the outstanding voting stock of the corporation.

The statute could prohibit or delay mergers or other takeover or change in control attempts and, accordingly, may discourage attempts to acquire us even though such a transaction may offer our stockholders the opportunity to sell their stock at a price above the prevailing market price.

Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws

Among other things, our Amended and Restated Certificate of Incorporation and our Amended and Restated Bylaws will:

- permit our board of directors to issue up to 10,000,000 shares of preferred stock, with any rights, preferences and privileges as they may designate, including the right to approve an acquisition or other change in control;
- provide that the authorized number of directors may be changed only by resolution of our board of directors;
- provide that our board of directors will be classified into three classes of directors;

- provide that, subject to the rights of any series of preferred stock to elect directors, directors may only be removed for cause, which removal may be effected, subject to any limitation imposed by law, by the holders of at least 66²/₃% of the voting power of all of our then-outstanding shares of the capital stock entitled to vote generally at an election of directors;
- provide that all vacancies, including newly created directorships, may, except as otherwise required by law, be filled by the affirmative vote of a majority of directors then in office, even if less than a quorum;
- require that any action to be taken by our stockholders must be effected at a duly called annual or special meeting of stockholders and not be taken by written consent or electronic transmission;
- provide that stockholders seeking to present proposals before a meeting of stockholders or to nominate candidates for election as directors at a meeting of stockholders must provide advance notice in writing, and also specify requirements as to the form and content of a stockholder's notice;
- provide that special meetings of our stockholders may be called only by the chairman of our board of directors, our chief executive officer or president or by our board of directors pursuant to a resolution adopted by a majority of the total number of authorized directors, and not by our stockholders; and
- not provide for cumulative voting rights, therefore allowing the holders of a majority of the shares of common stock entitled to vote in any election of directors to elect all of the directors standing for election, if they should so choose.

The amendment of any of these provisions would require approval by the holders of at least 66²/₃% of the voting power of all of our then-outstanding common stock entitled to vote generally in the election of directors, voting together as a single class.

The combination of these provisions will make it more difficult for our existing stockholders to replace our board of directors as well as for another party to obtain control of us by replacing our board of directors. Because our board of directors has the power to retain and discharge our officers, these provisions could also make it more difficult for existing stockholders or another party to effect a change in management. In addition, the authorization of undesignated preferred stock makes it possible for our board of directors to issue preferred stock with voting or other rights or preferences that could impede the success of any attempt to change our control.

These provisions are intended to enhance the likelihood of continued stability in the composition of our board of directors and its policies and to discourage coercive takeover practices and inadequate takeover bids. These provisions are also designed to reduce our vulnerability to hostile takeovers and to discourage certain tactics that may be used in proxy fights. However, such provisions could have the effect of discouraging others from making tender offers for our shares and may have the effect of delaying changes in our control or management. As a consequence, these provisions may also inhibit fluctuations in the market price of our stock that could result from actual or rumored takeover attempts. We believe that the benefits of these provisions, including increased protection of our potential ability to negotiate with the proponent of an unfriendly or unsolicited proposal to acquire or restructure our company, outweigh the disadvantages of discouraging takeover proposals, because negotiation of takeover proposals could result in an improvement of their terms.

Choice of Forum

Our Amended and Restated Certificate of Incorporation to be effective immediately after the closing of this offering will provide will require, to the fullest extent permitted by law, that derivative actions brought in our name, actions against directors, officers and employees for breach of fiduciary duty and certain other actions may be brought only in the Court of Chancery in the State of Delaware, except any action (A) as to which the Court of Chancery in the State of Delaware determines that there is an indispensable party not subject to the jurisdiction of the Court of Chancery (and the indispensable party does not consent to the personal jurisdiction of the Court of Chancery within ten days following such determination), (B) which is vested in the exclusive jurisdiction of a court or forum other than the Court of Chancery or (C) for which the Court of Chancery does not have subject matter jurisdiction. If an action is brought outside of Delaware, the stockholder bringing the suit will be deemed to have consented to service of process on such stockholder's counsel. Although we believe this provision benefits us by

providing increased consistency in the application of law in the types of lawsuits to which it applies, a court may determine that this provision is unenforceable, and to the extent it is enforceable, the provision may have the effect of discouraging lawsuits against our directors and officers.

Our amended and restated certificate of incorporation will provide that the exclusive forum provision will be applicable to the fullest extent permitted by applicable law, subject to certain exceptions. Section 27 of the Exchange Act creates exclusive federal jurisdiction over all suits brought to enforce any duty or liability created by the Exchange Act or the rules and regulations thereunder. As a result, the exclusive forum provision will not apply to suits brought to enforce any duty or liability created by the Exchange Act or any other claim for which the federal courts have exclusive jurisdiction. In addition, our amended and restated certificate of incorporation provides that, unless we consent in writing to the selection of an alternative forum, the federal district courts of the United States of America shall, to the fullest extent permitted by law, be the exclusive forum for the resolution of any complaint asserting a cause of action arising under the Securities Act or the rules and regulations promulgated thereunder. We note, however, that there is uncertainty as to whether a court would enforce this provision and that investors cannot waive compliance with the federal securities laws and the rules and regulations thereunder. Section 22 of the Securities Act creates concurrent jurisdiction for state and federal courts over all suits brought to enforce any duty or liability created by the Securities Act or the rules and regulations thereunder.

Limitation on Liability and Indemnification

See the section titled “Management — Limitation on Liability and Indemnification Matters.”

Listing

We intend to apply to list our common stock on The Nasdaq Capital Market under the trading symbol “BWV.”

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is Continental Stock Transfer & Trust Company. The Transfer Agent’s address is 1 State Street, 30th Floor, New York, New York 10004.

SHARES ELIGIBLE FOR FUTURE SALE

Prior to this offering, no public market existed for our common stock. Future sales of substantial amounts of our common stock in the public market following this offering, or the possibility of such sales occurring, could adversely affect prevailing market prices and could impair our ability to raise capital through the offering of equity securities.

Based on the number of shares of common stock outstanding as of August 1, 2021, upon the completion of this offering, we will have a total of _____ shares of common stock outstanding, assuming an initial public offering price of \$ _____ per share and assuming no exercise by the underwriters of their option to purchase additional shares of common stock and no exercise of outstanding options or warrants to purchase shares of common stock. All of the shares sold in this offering will be freely tradable unless held by our “affiliates”, as defined in Rule 144 under the Securities Act.

As a result of contractual restrictions described below and the provisions of Rules 144 and 701 promulgated under the Securities Act, the shares of common stock sold in this offering will be available for sale in the public market as follows:

- all the shares of common stock sold in this offering will be eligible for immediate sale upon the closing of this offering; and
- common shares will be eligible for sale in the public market upon expiration of lock-up agreements 180 days after the date of this prospectus, subject, in certain circumstances to the volume, manner of sale and other limitations under Rule 144 and Rule 701.

Rule 144

In general, persons (or persons whose shares are required to be aggregated) who have beneficially owned shares of our common stock for at least six months, and any affiliate of ours who owns shares of our common stock, are entitled to sell their securities without registration with the SEC under an exemption from registration provided by Rule 144 under the Securities Act.

Non-Affiliates

Any person (or persons whose shares are required to be aggregated) who is not deemed to have been an affiliate of ours at any time during the three months preceding a sale, and who has beneficially owned restricted securities for at least six months, including the holding period of any prior owner other than one of our affiliates, is entitled to sell those shares, subject only to the availability of current public information about us and provided that we have been subject to the Exchange Act periodic reporting requirements for at least 90 days before the sale. If such person has held our shares for at least one year, such person can resell such shares under Rule 144(b)(1) without regard to any Rule 144 restrictions, including the 90-day public company and current public information requirements.

Affiliates

Any person (or persons whose shares are required to be aggregated) who is deemed to be an affiliate of ours and who has beneficially owned restricted securities within the meaning of Rule 144 for at least six months would be subject to the restrictions described above. Additionally, such person would be subject to additional restrictions, pursuant to which such person would be required to comply with the manner of sale and notice provisions of Rule 144 and would be entitled to sell within any three-month period a number of shares that does not exceed the greater of:

- 1% of the number of shares of common stock then outstanding, which will equal approximately _____ shares immediately after this offering, based on the number of shares outstanding as of _____, 2021 and assuming no exercise by the underwriters of their option to purchase additional shares of common stock and no outstanding options or warrants; or
- the average weekly trading volume of our shares of common stock on the Nasdaq Capital Market during the four calendar weeks preceding the filing of a notice on Form 144 with respect to such sale.

Additionally, persons who are our affiliates at the time of, or any time during the three months preceding, a sale may sell unrestricted securities under the requirements of Rule 144 described above, without regard to the six-month holding period of Rule 144, which does not apply to sales of unrestricted securities.

Rule 701

Under Rule 701 under the Securities Act, shares of our common stock acquired upon the exercise of currently outstanding options or pursuant to other rights granted under our stock plans may be resold, by:

- persons other than affiliates, beginning 90 days after the effective date of the registration statement of which this prospectus forms a part, subject only to the manner-of-sale provisions of Rule 144; and
- our affiliates, beginning 90 days after the effective date of the registration statement of which this prospectus forms a part, subject to the manner-of-sale and volume limitations, current public information and filing requirements of Rule 144, in each case, without compliance with the six-month holding period requirement of Rule 144.

Notwithstanding the foregoing, all our Rule 701 shares are subject to lock-up agreements as described below and in the section titled “Underwriting” and will become eligible for sale upon the expiration of the restrictions set forth in those agreements.

Lock-Up Agreements

We and our directors, officers any other holder(s) of three percent (3.0%) or more of our outstanding common stock as of the effective date of the Registration Statement which this prospectus forms a part of (and all holders of securities exercisable for or convertible into three percent (3.0%) or more of our common stock) have entered into customary “lock-up” agreements in favor of Maxim pursuant to which such persons and entities have agreed, for a period of six (6) months after the effective date of the registration statement related to this offering, that they shall neither offer, issue, sell, contract to sell, encumber, grant any option for the sale of or otherwise dispose of any securities of the Company without Maxim’s prior written consent, including the issuance of shares of common stock upon the exercise of currently outstanding options approved by Maxim.

Form S-8 Registration Statement

We intend to file a registration statement on Form S-8 under the Securities Act after the closing of this offering to register the shares of our common stock that are issuable pursuant to our 2021 Plan. The registration statement is expected to be filed and become effective as soon as practicable after the completion of this offering. Accordingly, shares registered under such registration statement will be available for sale in the open market following its effective date, subject to Rule 144 volume limitations and the lock-up arrangement described above, if applicable.

UNDERWRITING

We are offering our common stock described in this prospectus through the underwriter named below. Maxim Group LLC, or Maxim or the representative, is acting as representative of the underwriter. We have entered into an underwriting agreement with the underwriter. Subject to the terms and conditions of the underwriting agreement, the underwriter has agreed to purchase, and we have agreed to sell to the underwriter, the number of common stock listed next to its name in the following table.

Underwriter	Number of Shares
Maxim Group LLC	
Total	

The underwriting agreement provides that the underwriter must buy all of the shares of common stock being sold in this offering if they buy any of them. However, the underwriter is not required to take or pay for the shares of common stock covered by the underwriter's option to purchase additional common stock as described below.

Our common stock are offered subject to a number of conditions, including:

- receipt and acceptance of our common stock by the underwriter; and
- the underwriter's right to reject orders in whole or in part.

We have been advised by Maxim that the underwriter intends to make a market in our common stock but that it is not obligated to do so and may discontinue making a market at any time without notice.

In connection with this offering, the underwriter or securities dealers may distribute prospectuses electronically.

Option to Purchase Additional Common Stock

We have granted the representative an option to buy up to an aggregate of additional shares of common stock. The representative has 45 days from the date of this prospectus to exercise this option. If the representative exercises this option, it will purchase additional shares of common stock approximately in proportion to the amounts specified in the table above.

Underwriting Discount

Shares sold by the representative to the public will initially be offered at the initial offering price set forth on the cover of this prospectus. Any shares sold by the representative to securities dealers may be sold at a discount of up to \$ _____ per share from the initial public offering price. The representative may offer the shares through one or more of their affiliates or selling agents. If all the shares are not sold at the initial public offering price, the representative may change the offering price and the other selling terms. Upon execution of the underwriting agreement, the representative will be obligated to purchase the shares at the prices and upon the terms stated therein.

We have agreed to pay the underwriters a cash fee equal to eight percent (8.0%) of the aggregate gross proceeds from the sale of the common stock, provided however, that the discount or spread shall be three and one half percent (3.5%) for any investors initially introduced by us, so long as such investors do not require the services of Maxim registered representatives in connection with their participation in the offering (collectively, the "Company Investors").

The following table summarizes the public offering price, underwriting commissions and proceeds before expenses to us assuming both no exercise and full exercise of the underwriters' option to purchase additional common stock.

	Per Share	Total without Over-Allotment Option	Total with Over-Allotment Option
Public offering price	\$	\$	\$
Underwriting discounts and commissions	\$	\$	\$
Proceeds, before expenses to us	\$	\$	\$

We have agreed to pay Maxim’s out-of-pocket accountable expenses, including Maxim’s legal fees, up to a maximum amount of \$125,000 if this offering is completed. We are required to pay \$25,000 to Maxim as an advance to be applied towards reasonable out-of-pocket expenses, or the Advance. Any portion of the Advance shall be returned back to us to the extent not actually incurred.

We estimate that the total expenses of the offering payable by us, not including the underwriting discount, will be approximately \$. We have also agreed to reimburse the underwriter for certain expenses incurred by them.

Representative’s Warrants

We have also agreed to issue to Maxim (or its permitted assignees) warrants to purchase a number of our shares equal to an aggregate of 5% of the total number of common stock sold in this offering, excluding Shares sold to existing Company stockholders, or the representative’s warrants. The representative’s warrants will have an exercise price equal to \$ (115% of the offering price of the common stock sold in this offering) and may be exercised on a cashless basis. The representative’s warrants are exercisable commencing six months after the effective date of the registration statement related to this offering, and will expire five years after such date. The representative’s warrants are not redeemable by us. We have agreed to a one-time demand registration of the shares of common stock underlying the representative’s warrants at our expense for a period of five years from the effective date of the registration statement related to this offering. The representative’s warrants also provide for unlimited “piggyback” registration rights at our expense with respect to the underlying common stock during the five-year period commencing from the effective date of the registration statement related to this offering. The representative’s warrants and the common stock underlying the representative’s warrants, have been deemed compensation by the Financial Industry Regulatory Authority, or FINRA, and are therefore subject to a 180-day lock-up pursuant to Rule 5110(g)(1) of FINRA. Maxim (or permitted assignees under the Rule) may not sell, transfer, assign, pledge or hypothecate the representative’s warrants or the securities underlying the representative’s warrants, nor will they engage in any hedging, short sale, derivative, put or call transaction that would result in the effective economic disposition of the representative’s warrants or the underlying securities for a period of six months from the effective date of this offering, except to any FINRA member participating in the offering and their bona fide officers or partners. The representative’s warrants will provide for adjustment in the number and price of such representative’s warrants (and the common stock underlying such representative’s warrants) to prevent dilution in the event of a forward or reverse stock split, stock dividend or similar recapitalization.

Right of First Refusal

We have agreed to grant Maxim, for the period commencing on the effective date of the registration statement related to this offering and concluding fifteen (15) months thereafter, a right of first refusal to act as sole underwriter or placement agent for any and all future public and private equity and debt (excluding commercial bank debt) offerings of the Company, or any successor to or any subsidiary of the Company during such fifteen (15) month period, except for financing provided by or solicited from any person or entity who is a current holder of the Company’s debt or equity.

Lock-Up Agreements

We and our directors, officers any other holder(s) of three percent (3.0%) or more of our outstanding common stock as of the effective date of the Registration Statement which this prospectus forms a part of (and all holders of securities exercisable for or convertible into three percent (3.0%) or more of our common stock) have entered into customary “lock-up” agreements in favor of Maxim pursuant to which such persons and entities have agreed, for a period of six (6) months after the effective date of the registration statement related to this offering, that they shall neither offer, issue, sell, contract to sell, encumber, grant any option for the sale of or otherwise dispose of any securities of the Company without Maxim’s prior written consent, including the issuance of shares of common stock upon the exercise of currently outstanding options approved by Maxim.

Indemnification

We have agreed to indemnify the underwriter against certain liabilities, including certain liabilities under the Securities Act. If we are unable to provide this indemnification, we have agreed to contribute to payments the underwriter may be required to make in respect of those liabilities.

Other Relationships

The underwriter and its affiliates have engaged in, and may in the future engage in, investment banking and other commercial dealings in the ordinary course of business with us or our affiliates. They have received, or may in the future receive, customary fees and commissions for these transactions.

No Public Market

Prior to this offering, there has not been a public market for our securities in the U.S. and the public offering price for our common stock will be determined through negotiations between us and the underwriter. Among the factors to be considered in these negotiations will be prevailing market conditions, our financial information, market valuations of other companies that we and the underwriter believe to be comparable to us, estimates of our business potential, the present state of our development and other factors deemed relevant.

We offer no assurances that the initial public offering price will correspond to the price at which our common stock will trade in the public market subsequent to this offering or that an active trading market for our common stock will develop and continue after this offering.

Stock Exchange

We intend to apply to list our common stock on the Nasdaq Capital Market, under the symbol “BWV”. There can be no assurance that we will be successful in listing our common stock on the Nasdaq Capital Market.

Electronic Distribution

A prospectus in electronic format may be made available on websites or through other online services maintained by the underwriter of this offering, or by their affiliates. Other than the prospectus in electronic format, the information on any underwriter’s website and any information contained in any other website maintained by an underwriter is not part of this prospectus or the registration statement of which this prospectus forms a part, has not been approved and/or endorsed by us or any underwriter in its capacity as underwriter, and should not be relied upon by investors.

Price Stabilization, Short Positions

In connection with this offering, the underwriter may engage in activities that stabilize, maintain or otherwise affect the price of our common stock during and after this offering, including:

- stabilizing transactions;
- short sales;
- purchases to cover positions created by short sales;
- imposition of penalty bids; and
- syndicate covering transactions.

Stabilizing transactions consist of bids or purchases made for the purpose of preventing or retarding a decline in the market price of our common stock while this offering is in progress. Stabilization transactions permit bids to purchase the underlying security so long as the stabilizing bids do not exceed a specified maximum. These transactions may also include making short sales of our common stock, which involve the sale by the underwriter of a greater number of common stock than they are required to purchase in this offering and purchasing common stock

on the open market to cover short positions created by short sales. Short sales may be “covered short sales,” which are short positions in an amount not greater than the underwriter’s option to purchase additional shares referred to above, or may be “naked short sales,” which are short positions in excess of that amount.

The underwriter may close out any covered short position by either exercising their option, in whole or in part, or by purchasing shares in the open market. In making this determination, the underwriter will consider, among other things, the price of shares available for purchase in the open market as compared to the price at which they may purchase shares through the over-allotment option.

Naked short sales are short sales made in excess of the over-allotment option. The underwriter must close out any naked short position by purchasing shares in the open market. A naked short position is more likely to be created if the underwriter is concerned that there may be downward pressure on the price of the common stock in the open market that could adversely affect investors who purchased in this offering.

The underwriter also may impose a penalty bid. This occurs when a particular underwriter repays to the underwriter a portion of the underwriting discount received by it because Maxim has repurchased shares sold by or for the account of that underwriter in stabilizing or short covering transactions.

These stabilizing transactions, short sales, purchases to cover positions created by short sales, the imposition of penalty bids and syndicate covering transactions may have the effect of raising or maintaining the market price of our common stock or preventing or retarding a decline in the market price of our common stock. As a result of these activities, the price of our common stock may be higher than the price that otherwise might exist in the open market. The underwriter may carry out these transactions on the Nasdaq Capital Market, in the over-the-counter market or otherwise. Neither we nor the underwriter make any representation or prediction as to the effect that the transactions described above may have on the price of the shares. Neither we, nor the underwriter make any representation that the underwriter will engage in these stabilization transactions or that any transaction, once commenced, will not be discontinued without notice.

Determination of Offering Price

Prior to this offering, there was no public market for our common stock. The initial public offering price will be determined by negotiation between us and Maxim. The principal factors to be considered in determining the initial public offering price include, but not limited to:

- the information set forth in this prospectus and otherwise available to Maxim;
- our history and prospects and the history and prospects for the industry in which we compete;
- our past and present financial performance;
- our prospects for future earnings and the present state of our development;
- the general condition of the securities market at the time of this offering;
- the recent market prices of, and demand for, publicly traded shares of generally comparable companies; and
- other factors deemed relevant by the underwriter and us.

The estimated public offering price range set forth on the cover page of this preliminary prospectus is subject to change as a result of market conditions and other factors. Neither we nor the underwriter can assure investors that an active trading market will develop for our common stock or that the common stock will trade in the public market at or above the initial public offering price.

Affiliations

The underwriter and its respective affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, investment research, principal investment, hedging, financing and brokerage activities. The underwriter and its affiliates may from time to time in the future engage with us and perform services for us or in

the ordinary course of their business for which they will receive customary fees and expenses. In the ordinary course of their various business activities, the underwriter and its respective affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers, and such investment and securities activities may involve securities and/or instruments of us. The underwriter and its respective affiliates may also make investment recommendations and/or publish or express independent research views in respect of these securities or instruments and may at any time hold, or recommend to clients that they acquire, long and/or short positions in these securities and instruments.

Offer Restrictions Outside the United States

No action has been taken in any jurisdiction (except in the United States) that would permit a public offering of the common stock the possession, circulation or distribution of this prospectus or any other material relating to us or the common stock in any jurisdiction where action for that purpose is required. Accordingly, the common stock may not be offered or sold, directly or indirectly, and neither this prospectus nor any other material or advertisements in connection with the common stock may be distributed or published, in or from any country or jurisdiction except in compliance with any applicable laws, rules and regulations of any such country or jurisdiction.

Australia. This prospectus:

- does not constitute a product disclosure document or a prospectus under Chapter 6D.2 of the Corporations Act 2001 (Cth) (the “Corporations Act”);
- has not been, and will not be, lodged with the Australian Securities and Investments Commission (“ASIC”), as a disclosure document for the purposes of the Corporations Act and does not purport to include the information required of a disclosure document under Chapter 6D.2 of the Corporations Act;
- does not constitute or involve a recommendation to acquire, an offer or invitation for issue or sale, an offer or invitation to arrange the issue or sale, or an issue or sale, of interests to a “retail client” (as defined in section 761G of the Corporations Act and applicable regulations) in Australia; and
- may only be provided in Australia to select investors who are able to demonstrate that they fall within one or more of the categories of investors, or Exempt Investors, available under section 708 of the Corporations Act.

The common stock may not be directly or indirectly offered for subscription or purchased or sold, and no invitations to subscribe for or buy the common stock may be issued, and no draft or definitive offering memorandum, advertisement or other offering material relating to any common stock may be distributed in Australia, except where disclosure to investors is not required under Chapter 6D of the Corporations Act or is otherwise in compliance with all applicable Australian laws and regulations. By submitting an application for the common stock, you represent and warrant to us that you are an Exempt Investor.

As any offer of common stock under this prospectus will be made without disclosure in Australia under Chapter 6D.2 of the Corporations Act, the offer of those securities for resale in Australia within 12 months may, under section 707 of the Corporations Act, require disclosure to investors under Chapter 6D.2 if none of the exemptions in section 708 applies to that resale. By applying for the common stock, you undertake to us that you will not, for a period of 12 months from the date of issue of the common stock, offer, transfer, assign or otherwise alienate those securities to investors in Australia except in circumstances where disclosure to investors is not required under Chapter 6D.2 of the Corporations Act or where a compliant disclosure document is prepared and lodged with ASIC.

This prospectus contains general information only and does not take account of the investment objectives, financial situation or particular needs of any particular person. It does not contain any securities recommendations or financial product advice. Before making an investment decision, investors need to consider whether the information in this prospectus is appropriate to their needs, objectives and circumstances, and, if necessary, seek expert advice on those matters.

Canada. The common stock may be sold only to purchasers purchasing, or deemed to be purchasing, as principal that are accredited investors, as defined in National Instrument 45-106 Prospectus Exemptions or subsection 73.3(1) of the Securities Act (Ontario), and are permitted clients, as defined in National Instrument 31-103 Registration Requirements, Exemptions and Ongoing Registrant Obligations. Any resale of the common stock must be made in accordance with an exemption from, or in a transaction not subject to, the prospectus requirements of applicable securities laws.

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if this prospectus (including any amendment thereto) contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser's province or territory. The purchaser should refer to any applicable provisions of the securities legislation of the purchaser's province or territory for particulars of these rights or consult with a legal advisor.

Pursuant to section 3A.3 of National Instrument 33-105 Underwriting Conflicts (NI 33-105), the underwriter is not required to comply with the disclosure requirements of NI 33-105 regarding underwriter conflicts of interest in connection with this offering.

Cayman Islands. This prospectus does not constitute a public offer of the common stock, whether by way of sale or subscription, in the Cayman Islands. Common stock have not been offered or sold, and will not be offered or sold, directly or indirectly, in the Cayman Islands.

Dubai International Financial Centre ("DIFC"). This prospectus relates to an Exempt Offer in accordance with the Markets Rules 2012 of the Dubai Financial Services Authority (the "DFSA"). This prospectus is intended for distribution only to persons of a type specified in the Markets Rules 2012 of the DFSA. It must not be delivered to, or relied on by, any other person. The DFSA has no responsibility for reviewing or verifying any documents in connection with Exempt Offers. The DFSA has not approved this prospectus supplement nor taken steps to verify the information set forth herein and has no responsibility for this prospectus. The securities to which this prospectus relates may be illiquid and/or subject to restrictions on their resale. Prospective purchasers of the securities offered should conduct their own due diligence on the securities. If you do not understand the contents of this prospectus you should consult an authorized financial advisor.

In relation to its use in the DIFC, this prospectus is strictly private and confidential and is being distributed to a limited number of investors and must not be provided to any person other than the original recipient, and may not be reproduced or used for any other purpose. The interests in the securities may not be offered or sold directly or indirectly to the public in the DIFC.

European Economic Area. In relation to each Member State of the European Economic Area which has implemented the Prospectus Directive (each, a Relevant Member State), with effect from and including the date on which the Prospectus Directive was implemented in that Relevant Member State (the Relevant Implementation Date), an offer of the common stock to the public may not be made in that Relevant Member State prior to the publication of a prospectus in relation to the common stock which has been approved by the competent authority in that Relevant Member State or, where appropriate, approved in another Relevant Member State and notified to the competent authority in that Relevant Member State, all in accordance with the Prospectus Directive, except that, with effect from and including the Relevant Implementation Date, an offer of common stock may be made to the public in that Relevant Member State at any time:

- to any legal entity which is a qualified investor as defined under the Prospectus Directive;
- to fewer than 100 or, if the Relevant Member State has implemented the relevant provision of the 2010 PD Amending Directive, 150 natural or legal persons (other than qualified investors as defined in the Prospectus Directive); or
- in any other circumstances falling within Article 3(2) of the Prospectus Directive, provided that no such offer of securities described in this prospectus shall result in a requirement for the publication by us of a prospectus pursuant to Article 3 of the Prospectus Directive.

For the purposes of the above paragraph, the expression "an offer of the common stock to the public" in relation to any common stock in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and the common stock to be offered so as to enable an

investor to decide to purchase or subscribe the common stock, as the same may be varied in that Member State by any measure implementing the Prospectus Directive in that Member State. The expression Prospectus Directive means Directive 2003/71/EC (and any amendments thereto, including the 2010 PD Amending Directive, to the extent implemented in the Relevant Member State) and includes any relevant implementing measure in each Relevant Member State, and the expression “2010 PD Amending Directive” means Directive 2010/73/EU.

Hong Kong. The common stock may not be offered or sold by means of any document other than (i) in circumstances which do not constitute an offer to the public within the meaning of the Companies Ordinance (Cap.32, Laws of Hong Kong), (ii) to “professional investors” within the meaning of the Securities and Futures Ordinance (Cap.571, Laws of Hong Kong) and any rules promulgated thereunder, or (iii) in other circumstances which do not result in the document being a “prospectus” within the meaning of the Companies Ordinance (Cap.32, Laws of Hong Kong), and no advertisement, invitation or document relating to the common stock may be issued or may be in the possession of any person for the purpose of issue (in each case whether in Hong Kong or elsewhere), which is directed at, or the contents of which are likely to be accessed or read by, the public in Hong Kong (except if permitted to do so under the laws of Hong Kong) other than with respect to common stock which are or are intended to be disposed of only to persons outside Hong Kong or only to “professional investors” within the meaning of the Securities and Futures Ordinance (Cap. 571, Laws of Hong Kong) and any rules promulgated thereunder.

Japan. Common stock have not been and will not be registered under the Financial Instruments and Exchange Law of Japan (Law No. 25 of 1948, as amended) and, accordingly, will not be offered or sold directly or indirectly in Japan or to, or for the benefit of any Japanese person or to others, for re-offering or re-sale directly or indirectly in Japan or to any Japanese person, except in each case pursuant to an exemption from the registration requirements of, and otherwise in compliance with, the Securities and Exchange Law of Japan and any other applicable laws, rules and regulations of Japan. For purposes of this paragraph, “Japanese person” means any person resident in Japan, including any corporation or other entity organized under the laws of Japan.

Kuwait. Unless all necessary approvals from the Kuwait Ministry of Commerce and Industry required by Law No. 31/1990 “Regulating the Negotiation of Securities and Establishment of Investment Funds,” its Executive Regulations and the various Ministerial Orders issued pursuant thereto or in connection therewith, have been given in relation to the marketing and sale of the common stock, these may not be marketed, offered for sale, nor sold in the State of Kuwait. Neither this prospectus (including any related document), nor any of the information contained therein is intended to lead to the conclusion of any contract of whatsoever nature within Kuwait.

Malaysia. No prospectus or other offering material or document in connection with the offer and sale of the common stock has been or will be registered with the Securities Commission of Malaysia (the “Commission”) for the Commission’s approval pursuant to the Capital Markets and Services Act 2007. Accordingly, this prospectus and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the common stock may not be circulated or distributed, nor may the common stock be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Malaysia other than (i) a closed end fund approved by the Commission; (ii) a holder of a Capital Markets Services License; (iii) a person who acquires the common stock, as principal, if the offer is on terms that the common stock may only be acquired at a consideration of not less than RM250,000 (or its equivalent in foreign currencies) for each transaction; (iv) an individual whose total net personal assets or total net joint assets with his or her spouse exceeds RM3 million (or its equivalent in foreign currencies), excluding the value of the primary residence of the individual; (v) an individual who has a gross annual income exceeding RM300,000 (or its equivalent in foreign currencies) per annum in the preceding twelve months; (vi) an individual who, jointly with his or her spouse, has a gross annual income of RM400,000 (or its equivalent in foreign currencies), per annum in the preceding twelve months; (vii) a corporation with total net assets exceeding RM10 million (or its equivalent in a foreign currencies) based on the last audited accounts; (viii) a partnership with total net assets exceeding RM10 million (or its equivalent in foreign currencies); (ix) a bank licensee or insurance licensee as defined in the Labuan Financial Services and Securities Act 2010; (x) an Islamic bank licensee or takaful licensee as defined in the Labuan Financial Services and Securities Act 2010; and (xi) any other person as may be specified by the Commission; provided that, in the each of the preceding categories (i) to (xi), the distribution of the common stock is made by a holder of a Capital Markets Services License who carries on the business of dealing in securities. The distribution in Malaysia of this prospectus is subject to Malaysian laws. This prospectus does not constitute and may not be used for the purpose of public offering or an issue, offer for subscription or purchase, invitation to subscribe for or purchase any securities requiring the registration of a prospectus with the Commission under the Capital Markets and Services Act 2007.

People's Republic of China. This prospectus may not be circulated or distributed in the PRC and the common stock may not be offered or sold, and will not offer or sell to any person for re-offering or resale directly or indirectly to any resident of the PRC except pursuant to applicable laws, rules and regulations of the PRC. For the purpose of this paragraph only, the PRC does not include Taiwan and the special administrative regions of Hong Kong and Macau.

Qatar. In the State of Qatar, the offer contained herein is made on an exclusive basis to the specifically intended recipient thereof, upon that person's request and initiative, for personal use only and shall in no way be construed as a general offer for the sale of securities to the public or an attempt to do business as a bank, an investment company or otherwise in the State of Qatar. This prospectus and the underlying securities have not been approved or licensed by the Qatar Central Bank or the Qatar Financial Centre Regulatory Authority or any other regulator in the State of Qatar. The information contained in this prospectus shall only be shared with any third parties in Qatar on a need to know basis for the purpose of evaluating the contained offer. Any distribution of this prospectus by the recipient to third parties in Qatar beyond the terms hereof is not permitted and shall be at the liability of such recipient.

Saudi Arabia. This prospectus may not be distributed in the Kingdom of Saudi Arabia except to such persons as are permitted under the Offers of Securities Regulations issued by the Capital Market Authority. The Capital Market Authority does not make any representation as to the accuracy or completeness of this prospectus, and expressly disclaims any liability whatsoever for any loss arising from, or incurred in reliance upon, any part of this prospectus. Prospective purchasers of the securities offered hereby should conduct their own due diligence on the accuracy of the information relating to the securities. If you do not understand the contents of this prospectus you should consult an authorized financial adviser.

Singapore. This prospectus or any other offering material relating to the common stock has not been registered as a prospectus with the Monetary Authority of Singapore under the Securities and Futures Act, Chapter 289 of Singapore, or the SFA. Accordingly, (a) the common stock have not been, and will not be, offered or sold or made the subject of an invitation for subscription or purchase of such common stock in Singapore, and (b) this prospectus or any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the common stock have not been and will not be circulated or distributed, whether directly or indirectly, to the public or any member of the public in Singapore other than (i) to an institutional investor as specified in Section 274 of the SFA, (ii) to a relevant person (as defined in Section 275 of the SFA) and in accordance with the conditions specified in Section 275 of the SFA or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

Where the common stock are subscribed or purchased under Section 275 of the SFA by a relevant person which is:

- (a) a corporation (which is not an accredited investor (as defined in Section 4A of the SFA)) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or
- (b) a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary of the trust is an individual who is an accredited investor, securities (as defined in Section 239(1) of the SFA) of that corporation or the beneficiaries' rights and interest (howsoever described) in that trust shall not be transferred within six months after that corporation or that trust has acquired the common stock pursuant to an offer made under Section 275 of the SFA except:
 - (a) to an institutional investor or to a relevant person defined in Section 275(2) of the SFA, or to any person arising from an offer referred to in Section 275(1A) or Section 276(4)(i)(B) of the SFA;
 - (b) where no consideration is or will be given for the transfer;
 - (c) where the transfer is by operation of law;
 - (d) as specified in Section 276(7) of the SFA; or
 - (e) as specified in Regulation 32 of the Securities and Futures (Offers of Investments) (Shares and Debentures) Regulations 2005 of Singapore.

Switzerland. The common stock will not be publicly offered in Switzerland and will not be listed on the SIX Swiss Exchange, or SIX, or on any other stock exchange or regulated trading facility in Switzerland. This prospectus has been prepared without regard to the disclosure standards for issuance prospectuses under art. 652a or art. 1156 of the Swiss Code of Obligations or the disclosure standards for listing prospectuses under art. 27 ff. of the SIX Listing Rules or the listing rules of any other stock exchange or regulated trading facility in Switzerland. Neither this prospectus nor any other offering or marketing material relating to our company or the common stock have been or will be filed with or approved by any Swiss regulatory authority. In particular, this prospectus will not be filed with, and the offer of the common stock will not be supervised by, the Swiss Financial Market Supervisory Authority, and the offer of the common stock has not been and will not be authorized under the Swiss Federal Act on Collective Investment Schemes (the “CISA”). The investor protection afforded to acquirers of interests in collective investment schemes under the CISA does not extend to acquirers of the common stock.

Taiwan. The common stock have not been and will not be registered with the Financial Supervisory Commission of Taiwan pursuant to relevant securities laws and regulations and may not be sold, issued or offered within Taiwan through a public offering or in circumstances which constitutes an offer within the meaning of the Securities and Exchange Act of Taiwan that requires a registration or approval of the Financial Supervisory Commission of Taiwan. No person or entity in Taiwan has been authorized to offer, sell, give advice regarding or otherwise intermediate the offering and sale of the common stock in Taiwan.

United Arab Emirates. The common stock have not been offered or sold, and will not be offered or sold, directly or indirectly, in the United Arab Emirates, except: (i) in compliance with all applicable laws and regulations of the United Arab Emirates; and (ii) through persons or corporate entities authorized and licensed to provide investment advice and/or engage in brokerage activity and/or trade in respect of foreign securities in the United Arab Emirates. The information contained in this prospectus does not constitute a public offer of securities in the United Arab Emirates in accordance with the Commercial Companies Law (Federal Law No. 8 of 1984 (as amended)) or otherwise and is not intended to be a public offer and is addressed only to persons who are sophisticated investors.

United Kingdom. This prospectus is only being distributed to and is only directed at, and any offer subsequently made may only be directed at: (i) persons who are outside the United Kingdom; (ii) investment professionals falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (the “Order”); or (iii) high net worth companies, and other persons to whom it may lawfully be communicated, falling within Article 49(2)(a) to (d) of the Order (all such persons falling within (1)-(3) together being referred to as “relevant persons”). The common stock are only available to, and any invitation, offer or agreement to subscribe, purchase or otherwise acquire the common stock will be engaged in only with, relevant persons. Any person who is not a relevant person should not act or rely on this prospectus or any of its contents.

Vietnam. This offering of common stock has not been and will not be registered with the State Securities Commission of Vietnam under the Law on Securities of Vietnam and its guiding decrees and circulars.

LEGAL MATTERS

The validity of the shares of common stock and representative's warrants offered hereby will be passed upon for us by Ellenoff Grossman & Schole LLP, New York, New York. Certain legal matters will be passed upon for the underwriters by Loeb & Loeb LLP, New York, New York.

EXPERTS

The financial statements of Blue Water Vaccines, Inc. as of and for the years ended December 31, 2020 and 2019 included in this registration statement, of which this prospectus forms a part, have been audited by Mayer Hoffman McCann P.C., independent registered public accounting firm, as set forth in their report (which includes an explanatory paragraph related to the existence of substantial doubt about the Company's ability to continue as a going concern) appearing elsewhere herein, and are included in reliance upon such report given on the authority of such firm as experts in auditing and accounting in giving said report.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-1 under the Securities Act with respect to the common stock offered in this prospectus. This prospectus, which constitutes a part of the registration statement, does not contain all of the information set forth in the registration statement and its exhibits and schedules, portions of which have been omitted as permitted by the rules and regulations of the SEC. For further information about us and our common stock, we refer you to the registration statement and to its exhibits and schedules. Statements in this prospectus about the contents of any contract, agreement or other document are not necessarily complete and, in each instance, we refer you to the copy of such contract, agreement or document filed as an exhibit to the registration statement, with each such statement being qualified in all respects by reference to the document to which it refers. Anyone may inspect and copy the registration statement and its exhibits and schedules at the Public Reference Room the SEC maintains at 100 F Street, N.E., Washington, D.C. 20549. You may obtain further information about the operation of the SEC's Public Reference Room by calling the SEC at 1-800-SEC-0330. You may also inspect the registration statement and its exhibits and schedules and other information without charge at the website maintained by the SEC. The address of this site is www.sec.gov.

We also file periodic reports, proxy statements and other information with the SEC. These reports, proxy statements and other information will be available for inspection and copying at the public reference room and website of the SEC referred to above. We also maintain a website at www.bluewatervaccines.com, by which you may access these materials free of charge as soon as reasonably practicable after they are electronically filed with, or furnished to, the SEC. The information that is contained on, or that may be accessed through, our website is not a part of this prospectus. We have included our website in this prospectus solely as an inactive textual reference.

BLUE WATER VACCINES, INC.

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Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of
Blue Water Vaccines, Inc.

Opinion on the Financial Statements

We have audited the accompanying balance sheets of **Blue Water Vaccines, Inc.** (the “Company”) as of December 31, 2020 and 2019, and the related statements of operations, stockholders’ equity, and cash flows for each of the two years in the period ended December 31, 2020, and the related notes (collectively referred to as the “financial statements”). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2020 and 2019, and the results of its operations and its cash flows for each of the two years in the period ended December 31, 2020, in conformity with accounting principles generally accepted in the United States of America.

Going Concern Uncertainty

The accompanying financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 2 to the financial statements, the Company has incurred recurring losses and negative cash flows from operations and is dependent on additional financing to fund operations. These conditions raise substantial doubt about its ability to continue as a going concern. Management’s plans regarding these matters are also described in Note 2. The financial statements do not include any adjustments that might result from the outcome of this uncertainty.

Basis for Opinion

These financial statements are the responsibility of the Company’s management. Our responsibility is to express an opinion on the Company’s financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (“PCAOB”) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits, we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company’s internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

We have served as the Company’s auditor since 2021.

/s/ Mayer Hoffman McCann P.C.

Los Angeles, California
August 20, 2021

BLUE WATER VACCINES, INC.
Balance Sheets

	June 30, 2021	December 31, 2020	December 31, 2019
	(Unaudited)		
ASSETS			
Current assets			
Cash	\$ 3,669,468	\$ 4,308,821	\$ 6,050,751
Prepaid expenses and other current assets	355,353	277,853	8
Deferred offering cost	30,000	—	—
Receivable from related party	22,242	9,805	8,330
Total current assets	4,077,063	4,596,479	6,059,089
Prepaid expenses	92,467	184,934	—
Property and equipment, net	13,189	15,667	6,931
Deposit	—	15,000	15,000
Total assets	\$ 4,182,719	\$ 4,812,080	\$ 6,081,020
LIABILITIES AND STOCKHOLDERS' EQUITY			
Current liabilities			
Accounts payable	\$ 55,631	\$ 68,668	\$ 18,377
Accrued expenses	434,728	—	57,385
Total current liabilities	490,359	68,668	75,762
Deferred rent	—	9,642	6,859
Total liabilities	490,359	78,310	82,621
Stockholders' equity			
Preferred stock, \$0.00001 par value, 1,150,000 shares authorized;			
Series Seed: 1,150,000 shares designated; 1,146,138 shares issued and outstanding at June 30, 2021 and December 31, 2020 and 2019; \$8.1 million, \$7.8 million and \$7.3 million aggregate liquidation preference of Series Seed cumulative preferred stock at June 30, 2021 and December 31, 2020 and 2019, respectively	11	11	11
Common stock, \$0.00001 par value, 2,300,000 shares authorized; 800,000 shares outstanding at June 30, 2021 and December 31, 2020 and 2019	8	8	8
Additional paid-in-capital	7,349,732	7,273,087	6,938,250
Accumulated deficit	(3,657,391)	(2,539,336)	(939,870)
Total stockholders' equity	3,692,360	4,733,770	5,998,399
Total liabilities and stockholders' equity	\$ 4,182,719	\$ 4,812,080	\$ 6,081,020

The accompanying notes are an integral part of these financial statements.

BLUE WATER VACCINES, INC.
Statements of Operations

	Six months ended June 30, 2021	Six months ended June 30, 2020	Year Ended December 31, 2020	Year Ended December 31, 2019
	(Unaudited)	(Unaudited)		
Operating costs and expenses				
General and administrative	\$ 500,276	\$ 559,775	\$ 1,097,161	\$ 820,058
Research and development	617,779	320,336	524,908	60,174
Total operating expenses	<u>1,118,055</u>	<u>880,111</u>	<u>1,622,069</u>	<u>880,232</u>
Loss from operations	<u>(1,118,055)</u>	<u>(880,111)</u>	<u>(1,622,069)</u>	<u>(880,232)</u>
Other income				
Interest income	—	19,431	22,603	58,317
Total other income	—	19,431	22,603	58,317
Net loss	\$ (1,118,055)	\$ (860,680)	\$ (1,599,466)	\$ (821,915)
Cumulative preferred stock dividends	276,904	278,434	559,928	279,964
Net loss applicable to common stockholders	<u>(1,394,959)</u>	<u>(1,139,114)</u>	<u>(2,159,394)</u>	<u>(1,101,879)</u>
Net loss per share attributable to common stockholders, basic and diluted	\$ (1.74)	\$ (1.42)	\$ (2.70)	\$ (1.38)
Weighted average number of common shares outstanding, basic and diluted	800,000	800,000	800,000	800,000

The accompanying notes are an integral part of these financial statements.

BLUE WATER VACCINES, INC.
Statements of Stockholders' Equity

For the Years Ended December 31, 2020 and 2019

	Preferred Stock		Common Stock		Additional Paid-in Capital	Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount	Shares	Amount			
Balance at December 31, 2018	—	\$ —	800,000	\$ 8	\$ —	\$(117,955)	\$ (117,947)
Issuance of Series Seed Preferred stock to investors (net of issuance cost of \$44,985)	1,146,138	11	—	—	6,934,984	—	6,934,995
Stock-based compensation	—	—	—	—	3,266	—	3,266
Net loss	—	—	—	—	—	(821,915)	(821,915)
Balance at December 31, 2019	1,146,138	\$ 11	800,000	\$ 8	\$ 6,938,250	\$ (939,870)	\$ 5,998,399
Stock-based compensation	—	—	—	—	334,837	—	334,837
Net loss	—	—	—	—	—	(1,599,466)	(1,599,466)
Balance at December 31, 2020	1,146,138	\$ 11	800,000	\$ 8	\$ 7,273,087	\$ (2,539,336)	\$ 4,733,770

For the Six Months Ended June 30, 2021

	Preferred Stock		Common Stock		Additional Paid-in Capital	Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount	Shares	Amount			
Balance at December 31, 2020	1,146,138	\$ 11	800,000	\$ 8	\$ 7,273,087	\$ (2,539,336)	\$ 4,733,770
Stock-based compensation (Unaudited)	—	—	—	—	76,645	—	76,645
Net loss (Unaudited)	—	—	—	—	—	(1,118,055)	(1,118,055)
Balance at June 30, 2021 (Unaudited)	1,146,138	\$ 11	800,000	\$ 8	\$ 7,349,732	\$ (3,657,391)	\$ 3,692,360

For the Six Months Ended June 30, 2020

	Preferred Stock		Common Stock		Additional Paid-in Capital	Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount	Shares	Amount			
Balance at December 31, 2019	1,146,138	\$ 11	800,000	\$ 8	\$ 6,938,250	\$ (939,870)	\$ 5,998,399
Stock-based compensation (Unaudited)	—	—	—	—	235,810	—	235,810
Net loss (Unaudited)	—	—	—	—	—	(860,680)	(860,680)
Balance at June 30, 2020 (Unaudited)	1,146,138	\$ 11	800,000	\$ 8	\$ 7,174,060	\$ (1,800,550)	\$ 5,373,529

The accompanying notes are an integral part of these financial statements.

BLUE WATER VACCINES, INC.
Statements of Cash Flows

	Six months ended June 30, 2021	Six months ended June 30, 2020	Year Ended December 31, 2020	Year Ended December 31, 2019
	(Unaudited)	(Unaudited)		
Cash flows from operating activities				
Net loss	\$ (1,118,055)	\$ (860,680)	\$ (1,599,466)	\$ (821,915)
Adjustments to reconcile net loss to net cash used in operating activities:				
Depreciation expense	2,478	1,195	3,056	573
Stock-based compensation	76,645	235,810	334,837	3,266
Changes in assets and liabilities:				
Prepaid expenses and other assets	(77,500)	(378,282)	(277,845)	—
Deferred offering cost	(30,000)	—	—	—
Receivable from related party	(12,437)	—	(1,475)	(8,330)
Prepaid expenses	92,467	(184,934)	(184,934)	—
Deposit	15,000	—	—	—
Accrued expenses	434,728	(57,385)	(57,385)	(22,905)
Accounts payable	(13,037)	(7,932)	50,291	18,377
Deferred rent	(9,642)	—	2,783	5,808
Net cash used in operating activities	<u>(639,353)</u>	<u>(1,252,208)</u>	<u>(1,730,138)</u>	<u>(825,126)</u>
Cash flows from investing activities				
Purchase of property and equipment	—	(6,027)	(11,792)	(4,500)
Net cash used in investing activities	<u>—</u>	<u>(6,027)</u>	<u>(11,792)</u>	<u>(4,500)</u>
Cash flows from financing activities				
Repayment of loan from related party	—	—	—	(54,617)
Proceeds from issuance of Series Seed Preferred stock to investors (net of issuance cost of \$44,985)	—	—	—	6,934,994
Net cash provided by financing activities	<u>—</u>	<u>—</u>	<u>—</u>	<u>6,880,377</u>
Net (decrease) increase in cash	(639,353)	(1,258,235)	(1,741,930)	6,050,751
Cash, beginning of period	4,308,821	6,050,751	6,050,751	—
Cash, end of period	<u>\$ 3,669,468</u>	<u>\$ 4,792,516</u>	<u>\$ 4,308,821</u>	<u>\$ 6,050,751</u>

The accompanying notes are an integral part of these financial statements.

BLUE WATER VACCINES, INC.
Notes to Financial Statements

Note 1 — Organization, Plan of Business Operations

Blue Water Vaccines, Inc. (the “Company”) was formed on October 26, 2018, to focus on the research and development of transformational vaccines to prevent infectious diseases worldwide. The Company’s lead vaccine candidates, BWV-101 and BWV-102, are being investigated as a universal influenza vaccine with the potential against all influenza strains and may provide a first-in-class long-term global vaccine that protects millions. The Company’s proprietary, immunogenic, multi-purpose platform enables the Company to bioengineer viral nanoparticles to deliver antigens, enhancing immunity, in an array of infectious disease agents, including influenza. All of the Company’s vaccine candidates are in the pre-clinical developmental stage.

Note 2 — Liquidity, Financial Condition and Management’s Plans

The Company has had limited operating activities to date, substantially all of which have been devoted to seeking licenses and engaging in research and development activities. The Company’s product candidates currently under development will require significant additional research and development efforts prior to commercialization. The Company has financed its operations since inception primarily using proceeds received from seed investors.

The Company has incurred substantial operating losses since inception and expects to continue to incur significant operating losses for the foreseeable future. As of June 30, 2021, the Company had cash of approximately \$3.7 million, working capital of approximately \$3.6 million and an accumulated deficit of approximately \$3.7 million.

The Company will require significant additional capital to sustain its short-term operations and make the investments it needs to execute its longer-term business plan. The Company believes the existing cash at June 30, 2021, will be sufficient to continue operations, satisfy its obligations and fund the future expenditures that will be required to conduct the clinical and regulatory work to develop its product candidates until the second quarter of 2022. The Company is currently seeking to obtain additional debt or equity financing, however, there are currently no commitments in place for further financing nor is there any assurance that such financing will be available to the Company on favorable terms, if at all. If the Company is unable to secure additional capital, it may be required to curtail any clinical trials and development of products and take additional measures to reduce expenses in order to conserve its cash in amounts sufficient to sustain operations and meet its obligations.

Because of operating losses and a net operating cash flow deficit, there is substantial doubt about the Company’s ability to continue as a going concern for one year from the issuance of the financial statements, which is not alleviated by management’s plans. The financial statements have been prepared assuming the Company will continue as a going concern. These financial statements do not include any adjustments that might be necessary from the outcome of this uncertainty.

Note 3 — Summary of Significant Accounting Policies

Basis of Presentation

The Company’s financial statements have been prepared in conformity with accounting principles generally accepted in the United States of America (“U.S. GAAP”).

Unaudited Interim Financial Statements

The accompanying balance sheet as of June 30, 2021, and the statements of operations, the statements of changes in stockholders’ equity, and the statements of cash flows for the six months ended June 30, 2021 and 2020 are unaudited. These unaudited interim financial statements have been prepared on the same basis as the audited financial statements, and in management’s opinion, include all adjustments, consisting of only normal recurring adjustments, necessary for the fair statement of the Company’s financial position as of June 30, 2021 and its results of operations and cash flows for the six months ended June 30, 2021 and 2020. The financial data and the other financial information disclosed in the notes to these financial statements related to the six-month periods are also unaudited. Operating results for the period for the six months ended June 30, 2021 are not necessarily indicative of the results that may be expected through December 31, 2021.

BLUE WATER VACCINES, INC.
Notes to Financial Statements

Note 3 — Summary of Significant Accounting Policies (cont.)

Use of Estimates

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of expenses during the reporting periods. The most significant estimates in the Company's financial statements relate to the valuation of common stock, stock-based compensation, accrued research and development expenses and the valuation allowance of deferred tax assets resulting from net operating losses. These estimates and assumptions are based on current facts, historical experience and various other factors believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities and the recording of expenses that are not readily apparent from other sources. Actual results may differ materially and adversely from these estimates. To the extent there are material differences between the estimates and actual results, the Company's future results of operations will be affected.

Concentration of Credit Risk

Financial instruments that potentially subject the Company to concentrations of credit risk consist of cash accounts in a financial institution, which, at times, may exceed the Federal Depository Insurance Coverage limit of \$250,000. As of June 30, 2021, December 31, 2020 and 2019, the Company has not experienced losses on these accounts and management believes the Company is not exposed to significant risks on such accounts.

Property and Equipment

Property and equipment consists of leasehold improvements, computer, equipment and office furniture and fixtures, all of which are recorded at cost. Depreciation and amortization is recorded using the straight-line method over the respective useful lives of the assets ranging from three to five years. Long-lived assets are reviewed for impairment whenever events or circumstances indicate that the carrying amount of these assets may not be recoverable.

Fair Value of Financial Instruments

Financial instruments, including cash, accounts payable and accrued liabilities are carried at cost, which management believes approximates fair value due to the short-term nature of these instruments. The fair value of the Company's assets and liabilities, which qualify as financial instruments under the Financial Accounting Standards Board ("FASB") Accounting Standards Codification ("ASC") Topic 820, *Fair Value Measurements*, approximates the carrying amounts represented in the balance sheet.

Fair Value Measurements

Fair value is defined as the price that would be received for sale of an asset or paid for transfer of a liability, in an orderly transaction between market participants at the measurement date. U.S. GAAP establishes a three-tier fair value hierarchy, which prioritizes the inputs used in measuring fair value. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1 measurements) and the lowest priority to unobservable inputs (Level 3 measurements). These tiers include:

- Level 1, defined as observable inputs such as quoted prices (unadjusted) for identical instruments in active markets;
- Level 2, defined as inputs other than quoted prices in active markets that are either directly or indirectly observable such as quoted prices for similar instruments in active markets or quoted prices for identical or similar instruments in markets that are not active; and

BLUE WATER VACCINES, INC.
Notes to Financial Statements

Note 3 — Summary of Significant Accounting Policies (cont.)

- Level 3, defined as unobservable inputs in which little or no market data exists, therefore requiring an entity to develop its own assumptions, such as valuations derived from valuation techniques in which one or more significant inputs or significant value drivers are unobservable.

In some circumstances, the inputs used to measure fair value might be categorized within different levels of the fair value hierarchy. In those instances, the fair value measurement is categorized in its entirety in the fair value hierarchy based on the lowest level input that is significant to the fair value measurement.

Deferred offering costs

Deferred offering costs consist of legal, accounting, and other costs incurred through the balance sheet date that are directly related to the proposed initial public offering and that will be charged to shareholders' equity upon the completion of the proposed initial public offering. Should the proposed initial public offering prove to be unsuccessful, these deferred costs, as well as additional expenses to be incurred, will be charged to operations.

Research and Development

The Company expenses the cost of research and development as incurred. Research and development expenses include costs incurred in funding research and development activities, license fees, and other external costs. Advance payments for goods and services that will be used in future research and development activities are expensed when the activity has been performed or when the goods have been received rather than when the payment is made. Upfront and milestone payments due to third parties that perform research and development services on the Company's behalf will be expensed as services are rendered or when the milestone is achieved.

In accordance with FASB ASC Topic 730-10-25-1, *Research and Development*, costs incurred in obtaining licenses and patent rights are charged to research and development expense if the technology licensed has not reached commercial feasibility and has no alternative future use. The licenses purchased by the Company (see Note 5) require substantial completion of research and development, regulatory and marketing approval efforts to reach commercial feasibility and has no alternative future use. Accordingly, the total purchase price for the licenses acquired is reflected as research and development on the Company's statements of operations.

Stock-Based Compensation

The Company expensed stock-based compensation to employees and non-employees over the requisite service period based on the estimated grant-date fair value of the awards. Stock-based awards to employees with graded-vesting schedules are recognized, using the accelerated attribution method, on a straight-line basis over the requisite service period for each separately vesting portion of the award. Changes in the estimated fair value of awards are recognized as compensation expense in the period of change.

The Company estimates the fair value of stock option grants using the Black-Scholes option pricing model and the assumptions used in calculating the fair value of stock-based awards represent management's best estimates and involve inherent uncertainties and the application of management's judgment.

Expected Term — The expected term of options represents the period that the Company's stock-based awards are expected to be outstanding based on the simplified method, which is the half-life from vesting to the end of its contractual term.

Expected Volatility — The Company computes stock price volatility over expected terms based on comparable companies historical common stock trading prices.

Common Stock Fair Value — The fair value of the common stock underlying the Company's stock options was estimated at each grant date and was determined with the assistance of an independent third-party valuation expert. The assumptions underlying these valuations represented management's best estimates, which involved inherent uncertainties and the application of significant levels of management judgment.

BLUE WATER VACCINES, INC.
Notes to Financial Statements

Note 3 — Summary of Significant Accounting Policies (cont.)

Risk-Free Interest Rate — The Company bases the risk-free interest rate on the implied yield available on U.S. Treasury securities with a remaining term commensurate with the estimated expected term.

Expected Dividend — The Company has never declared or paid any cash dividends on its common shares and does not plan to pay cash dividends in the foreseeable future, and, therefore, uses an expected dividend yield of zero in its valuation models.

The Company recognizes forfeitures of equity awards as they occur.

Fair value of common stock

In order to determine the fair value of shares of common stock of the Company when issuing stock options and computing their estimated stock-based compensation expense, its board of directors considered with input from third party valuations, among other things, contemporaneous valuations of the Company's common stock. Given the absence of a public trading market of the Company's capital stock to date, its board of directors has exercised reasonable judgment and considered a number of objective and subjective factors to determine the best estimate of the fair value of the Company common and preferred stock, including:

- the prices, rights, preferences and privileges of our preferred stock relative to our common stock;
- our business, financial condition and results of operations, including related industry trends affecting our operations;
- the likelihood of achieving a liquidity event, such as an initial public offering ("IPO"), or sale of our company, given prevailing market conditions;
- the lack of marketability of our common stock;
- the market performance of comparable publicly traded companies;
- U.S. and global economic and capital market conditions and outlook; and
- Common stock valuation methodology.

In estimating the fair market value of common stock of the Company, its board of directors first determined the equity value of its business using accepted valuation methods.

The Company engaged a third-party valuation specialist to conduct a valuation, which used its recent preferred stock financing as a starting point and determined the equity value of the company based on the Backsolve method using an Option Pricing Method (OPM) to calculate the implied value based on a market approach. The Company's equity value was allocated using OPM to estimate the fair market value of the Company's classes of equity.

Income Taxes

Income taxes are accounted for under the asset and liability method. Deferred tax assets and liabilities are recognized for future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases and operating loss and tax credit carryforwards.

Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rate is recognized in operations in the period that includes the enactment date. Deferred tax assets are reduced to estimated amounts expected to be realized by the use of a valuation allowance.

Under U.S. GAAP, the impact of an uncertain income tax position on the income tax return must be recognized at the largest amount that is more-likely-than-not to be sustained upon audit by the relevant taxing authority. An uncertain income tax position will not be recognized if it has less than a 50% likelihood of being sustained.

BLUE WATER VACCINES, INC.
Notes to Financial Statements

Note 3 — Summary of Significant Accounting Policies (cont.)

Additionally, U.S. GAAP provides guidance on derecognition, classification, interest and penalties, accounting for interim periods, disclosure and transition. The Company is currently not aware of any issues under review that could result in significant payments, accruals or material deviation from its position.

Comprehensive Income (Loss)

The Company is required to report all components of comprehensive income (loss), including net income (loss), in the accompanying financial statements in the period in which they are recognized. Comprehensive income (loss) is defined as the change in equity during a period from transactions and other events and circumstances from non-owner sources, including unrealized gains and losses on investments and foreign currency translation adjustments. Net loss and comprehensive loss were the same for all periods presented.

Net Loss Per Share

Basic loss per share is computed by dividing the net income or loss applicable to common shares by the weighted average number of common shares outstanding during the period. Diluted earnings per share is computed using the weighted average number of common shares and, if dilutive, potential common shares outstanding during the period. Potential common shares consist of the Company's preferred stock and options. Diluted loss per share excludes the shares issuable upon the conversion of preferred stock, common stock options from the calculation of net loss per share if their effect would be anti-dilutive.

The two-class method is used to determine earnings per share based on participation rights of participating securities in any undistributed earnings. Each preferred stock that includes rights to participate in distributed earnings is considered a participating security and the Company uses the two-class method to calculate net income available to the Company's common shareholders per common share — basic and diluted.

The following were excluded from the computation of diluted shares outstanding due to the losses since inception, as they would have had an anti-dilutive impact on the Company's net loss:

	Six months ended June 30,		Years Ended December 31,	
	2021	2020	2020	2019
Options to purchase common stock	195,160	229,604	195,160	57,404
Preferred stock Series Seed	1,146,138	1,146,138	1,146,138	1,146,138
Total	1,341,298	1,375,742	1,341,298	1,203,542

New Accounting Pronouncements

On February 2016, the FASB issued Accounting Standards Update (“ASU”) No. 2016-02, *Leases (Topic 842)*. Under the new guidance, lessees will be required to recognize all leases (with the exception of short-term leases) on the balance sheet as a lease liability, which is a lessee's obligation to make lease payments arising from a lease, measured on a discounted basis and a right-of-use asset, which is an asset that represents the lessee's right to use, or control the use of, a specified asset for the lease term. This guidance is effective for fiscal years beginning after December 15, 2020, and interim periods within fiscal years beginning after December 15, 2021, with early adoption permitted. On January 1, 2021, the Company adopted ASU No. 2016-02, and the adoption of this standard did not have an impact on the Company's financial statements as the Company is currently not subject to any lease agreements with terms in excess of 12 months.

In June 2018, the FASB issued ASU No. 2018-07, *Compensation — Stock Compensation (Topic 718): Improvements to Nonemployee Share-Based Payment Accounting* (“ASU 2018-07”). ASU 2018-07 simplifies several aspects of the accounting for nonemployee share-based payment transactions resulting from expanding the scope of

BLUE WATER VACCINES, INC.
Notes to Financial Statements

Note 3 — Summary of Significant Accounting Policies (cont.)

Topic 718, Compensation — Stock Compensation, to include share-based payment transactions for acquiring goods and services from non-employees. ASU 2018-07 is effective for public business entities for fiscal years beginning after December 15, 2018, including interim periods within that fiscal year. On January 1, 2019, the Company adopted ASU 2018-07, and the adoption did not have a material impact on its financial statements.

In December 2019, the FASB issued ASU No. 2019-12, *Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes* (“ASU 2019-12”), which is intended to simplify various aspects related to accounting for income taxes. ASU 2019-12 removes certain exceptions to the general principles in Topic 740 and also clarifies and amends existing guidance to improve consistent application. This guidance is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2020, with early adoption permitted. The Company adopted ASU 2019-12 on January 1, 2021. Adoption of the ASU did not impact the Company’s financial position, results of operations or cash flows.

In August 2020, the FASB issued ASU No. 2020-06, *Debt — Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging — Contracts in Entity’s Own Equity (Subtopic 815-40): Accounting for Convertible Instruments and Contracts in an Entity’s Own Equity*, which simplifies accounting for convertible instruments by removing major separation models required under current GAAP. The ASU removes certain settlement conditions that are required for equity contracts to qualify for the derivative scope exception and it also simplifies the diluted earnings per share calculation in certain areas. This guidance is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2021, with early adoption permitted. The Company is currently evaluating the impact of this standard on its financial statements and related disclosures.

The Company’s management does not believe that any other recently issued, but not yet effective, accounting standards if currently adopted would have a material effect on the accompanying financial statements.

Note 4 — Prepaid Expenses and Other Current Assets

Prepaid expense and other current assets consisted of the following as of June 30, 2021, December 31, 2020 and 2019:

	As of June 30, 2021	As of December 31, 2020	As of December 31, 2019
Prepaid expenses – research and development	\$ 260,985	\$ 233,532	\$ —
Prepaid expenses – insurance	19,368	4,321	—
Prepaid expenses – consulting fees	70,000	35,000	—
Prepaid expenses – other	5,000	5,000	8
Total	\$ 355,353	\$ 277,853	\$ 8

The prepaid expenses — consulting fees is prepaid to the Chief Executive Officer, pursuant to the consulting agreement as disclosed in Note 8.

Note 5 — Significant Agreements

Oxford University Innovation Limited

In December 2018, the Company entered into an option agreement Oxford University Innovation (“OUI”), which was a precursor to a license agreement (the “OUI Agreement”), dated July 16, 2019. Under the terms of the OUI Agreement, the Company holds an exclusive, worldwide license to certain specified patent rights and biological materials relating to the use of epitopes of limited variability and virus-like particle products and practice processes that are covered by the licensed patent rights and biological materials for the purpose of developing and commercializing a vaccine product candidate for influenza. The Company is obligated to use its best efforts to develop and market Licensed Products in accordance with its development plan, report to OUI on progress and achieve the following milestones and must pay OUI nonrefundable milestone fees as follows when it

BLUE WATER VACCINES, INC.
Notes to Financial Statements

Note 5 — Significant Agreements (cont.)

achieves them: initiation of first Phase I study; initiation of first Phase II study; initiation of first Phase III/pivotal registration studies; first submission of application for regulatory approval (BLA/NDA); marketing authorization in the United States; marketing authorization in any EU country; marketing authorization in Japan; first marketing authorization in any other country; first commercial sale in Japan; first commercial sale in any ROW country; first year that annual sales equal or exceed certain thresholds. The OUI Agreement will expire upon ten (10) years from the expiration of the last patent contained in the licensed patent rights, unless terminated earlier. None of the applications included in the OUI licensed patent rights have been issued as of December 31, 2020 and as of June 30, 2021. Either party may terminate the OUI Agreement for an uncured material breach. The Company may terminate the OUI Agreement for any reason at any time upon six months' written notice expiring after the third anniversary of the OUI Agreement. OUI may terminate immediately if the Company has a petition presented for its winding-up or passes a resolution for winding up other than for a bona fide amalgamation or reconstruction or compounds with its creditors or has a receiver or administrator appointed. OUI may also terminate if the Company opposes or challenges the validity of any of the patents or applications in the Licensed Technology; raises the claim that the know-how of the Licensed Technology is not necessary to develop and market Licensed Products; or in OUI's reasonable opinion, is taking inadequate or insufficient steps develop or market Licensed Products and does not take any further steps that OUI requests by written notice within a reasonable time.

For the years ended December 31, 2020 and 2019 and for the six month periods ended June, 30, 2021 and 2020, the Company did not incur any licensing fee payments for intellectual property licenses. See Note 7.

St. Jude Children's Hospital

The Company entered into a license agreement (the "St. Jude Agreement"), dated January 27, 2020, with St. Jude Children's Research Hospital ("St. Jude"). Under the terms of the St. Jude Agreement, the Company holds an exclusive, worldwide license to certain specified patent rights and biological materials relating to the use of live attenuated streptococcus pneumoniae and practice processes that are covered by the licensed patent rights and biological materials for the purpose of developing and commercializing a vaccine product candidate for streptococcus pneumoniae. The St. Jude Agreement will expire upon the expiration of the last valid claim contained in the licensed patent rights, unless terminated earlier. The Company is obligated to use commercially reasonable efforts to develop and commercialize the licensed product(s). The milestones include the following events: (i) complete IND enabling study; (ii) Initiate animal toxicology study; (iii) file IND; (iv) complete Phase I Clinical Trial; (v) commence Phase II Clinical Trial; (vi) commence Phase III Clinical Trial; and, (vii) regulatory approval, U.S. or foreign equivalent. If the Company fails to achieve the development milestones contained in the St. Jude Agreement, and if the Company and St. Jude fail to agree upon a mutually satisfactory revised timeline, St. Jude will have the right to terminate the St. Jude Agreement. Either party may terminate the St. Jude Agreement in the event the other party (a) files or has filed against it a petition under the Bankruptcy Act (among other things) or (b) fails to perform or otherwise breaches its obligations under the St. Jude Agreement, and has not cured such failure or breach within sixty (60) days. The Company may terminate for any reason on thirty (30) days written notice.

For the years ended December 31, 2019 and 2020 and for the six month periods ended June 30, 2021 and 2020, the Company recognized \$0, \$15,000 and \$10,000, \$15,000, respectively, for intellectual property licenses, which is recorded as research and development expenses. See Note 7.

Cincinnati Children's Hospital Medical Center

The Company entered into a license agreement (the "CHMC Agreement"), dated June 1, 2021, with Children's Hospital Medical Center, d/b/a Cincinnati Children's Hospital Medical Center ("CHMC"). Under the terms of the CHMC Agreement, the Company holds an exclusive, worldwide license (other than the excluded field of immunization against, and prevention, control, or reduction in the severity of gastroenteritis caused by rotavirus and norovirus in China and Hong Kong) to certain specified patent and biological materials relating to the use of norovirus nanoparticles and practice processes that are covered by the licensed patent rights and biological materials for the purpose of developing and commercializing CHMC patents and related technology directed to a virus-like particle

BLUE WATER VACCINES, INC.
Notes to Financial Statements

Note 5 — Significant Agreements (cont.)

vaccine platform that utilizes nanoparticle delivery technology that may have potential broad application to develop vaccines for multiple infectious diseases. The term of the CHMC Agreement begins on the effective date and extends on a jurisdiction by jurisdiction and product by product basis until the later of: (i) the last to expire licensed patent; (ii) ten (10) years after the first commercial sale; or, (iii) entrance onto the market of a biosimilar or interchangeable product. The Company is obligated to use commercially reasonable efforts to bring licensed products to market through diligent research and development, testing, manufacturing and commercialization and to use best efforts to make all necessary regulatory filings and obtain all necessary regulatory approvals, and achieve milestones relating to development and sales, and report to CHMC on progress. The Company will also be obligated to pay the agreed upon development milestone payments to CHMC. The Company may terminate the CHMC Agreement for convenience, at any time prior to first commercial sale of a product or process by providing one hundred and eighty (180) days' written notice to CHMC. It may also terminate for a CHMC uncured material breach. CHMC may terminate the CHMC Agreement for an uncured Company material breach or insolvency or bankruptcy. In the event the Company's material breach is for failure to meet any of the milestone payments, the Company is entitled to a nonexclusive license to continue developing indications that have already entered development at any stage or in which the Company has invested in developing. CHMC may also terminate the CHMC Agreement to the fullest extent permitted by law in the countries of the worldwide territory, in the event the Company or its affiliates challenge or induce others set up challenges to the validity or enforceability of any of the Licensed Patents and the Company will be obligated reimburse CHMC for its costs, including reasonable attorneys' fees.

For the six months ended June 30, 2021, the Company accrued licensing fee payments for intellectual property licenses, which is recorded as research and development expenses in aggregate of \$377,104. See note 7.

Ology Bioservices, Inc. (which was later acquired by National Resilience, Inc.)

The Company entered into a Master Services Agreement ("Ology MSA"), dated July 19, 2019, with Ology, Inc. ("Ology") to provide service from time to time, including but not limited to technology transfer, process development, analytical method optimization, cGMP manufacture, regulatory affairs, and stability studies of biologic products. Pursuant to the Ology MSA, the Company and Ology shall enter into a Project Addendum for each project to be governed by the terms and conditions of the Ology MSA. The Company has entered into two Project Addendums as of June 30, 2021. The initial Project Addendum was executed October 18, 2019 and the Company was required to pay Ology an aggregate of approximately \$4 million. Due to unforeseen delays associated with COVID-19, the Company and Resilience entered into a letter agreement dated January 9, 2020 to stop work on the project. The Company paid Ology \$100,000 for services, of which \$48,600 remains as prepaid expense as of December 31, 2020 and June 30, 2021. The second Project Addendum was executed May 21, 2021 and the Company is obligated to pay Ology an aggregate amount of approximately \$2.8 million, plus reimbursement for materials and outsourced testing, which will be billed at cost plus 15%. No work was started as of June 30, 2021.

Note 6 — Stockholders' Equity

Authorized Capital

The Company is currently authorized to issue up to 2,300,000 shares of common stock, par value \$0.00001 per share, and 1,150,000 shares of preferred stock, par value \$0.00001 per share, of which 1,150,000 has been designated as Series Seed Preferred Stock.

Common Stock

As of June 30, 2021, December 31, 2020 and 2019, there were 800,000 shares of common stock issued and outstanding.

BLUE WATER VACCINES, INC.
Notes to Financial Statements

Note 6 — Stockholders' Equity (cont.)

The holders of the Company's common stock are entitled to one vote for each share held of record, and are entitled upon liquidation of the Company to share ratably in the net assets of the Company available for distribution after payment of all obligations of the Company and after provision has been made with respect to each class of stock, if any, having preference over the common stock, currently including the Company's preferred stock. The shares of common stock are not redeemable and have no preemptive or similar rights.

Preferred Stock

The Company has authorized 1,150,000 shares of preferred stock as Series Seed Preferred Stock ("Series Seed"), with an original issue price of \$6.09 per share (the "Original Issue Price"). As of June 30, 2020, December 31, 2020 and 2019, there were 1,146,138 shares issued and outstanding.

Conversion

Each share of the Series Seed is convertible, at the option of the holder, at any time and from time to time, and without the payment of additional consideration by the holder, at a conversion price of \$6.09 per share, subject to certain adjustments for stock splits, stock dividends, recapitalizations, and similar corporate transactions, into fully paid and non-assessable shares of the Company's common stock. Each Series Seed is automatically converted into common stock of the Company, at a conversion price of \$6.09 per share, subject to adjustment, upon the closing a firmly underwritten public offering netting proceeds of at least \$50 million with an offering price of at least three hundred percent (300%) of the Original Issue Price of the Series Seed.

Dividends

Holders of the Series Seed are entitled to receive cumulative dividends at a per share rate of 8% per annum, compounded annually, on the initial investment amount commencing on the date of issue. Dividends are payable only when, as, and if declared by the Board of Directors or upon a Liquidation Event, as described below. Dividends on Series Seed are in preference to any dividend on the Company's common stock.

Liquidation Preference

In the event of certain voluntary or involuntary acquisition or sale transactions or upon the liquidation, dissolution or winding up of the Company (each, a "Liquidation Event"), the holders of Series Seed shall be entitled to receive out of the proceeds or assets of the Company legally available for distribution to its shareholders (the "Proceeds"), prior and in preference to any distribution of the Proceeds of such Liquidation Event to the holders of common shares by reason of their ownership thereof, an amount per share equal to the greater of (i) the Original Issue Price per share, plus unpaid dividends at a per share rate of 8% per annum on the initial investment amount commencing on the date of issue and ending on the date of the Liquidation Event, or (ii) such amount per share as would have been payable had all shares of Series Seed been converted into common stock of the Company immediately prior to the Liquidation Event (the result referred to as the "Liquidation Preference Amount"). In the event that the Proceeds shall be insufficient to enable the distribution in full of the Liquidation Preference Amount to the holders of the Series Seed for all of the preferred shares held by them, all of the Proceeds shall be distributed among the holders of Series Seed on a pro rata basis. Upon completion of the distribution required to the holders of Series Seed, all of the remaining Proceeds available for distribution to shareholders shall be distributed among the holders of common shares pro rata based on the number of common shares held by each such holder.

Voting

On any matter presented to the stockholders' of the Company for their action or consideration at any meeting of stockholders' of the Company (or by written consent of stockholders in lieu of meeting), each holder of outstanding shares of Series Seed will be entitled to cast the number of votes equal to the number of whole shares

BLUE WATER VACCINES, INC.
Notes to Financial Statements

Note 6 — Stockholders' Equity (cont.)

of common stock into which the shares of Series Seed held by such holder are convertible as of the record date for determining stockholders' entitled to vote on such matter. Holders of Series Seed will vote together with the holders of common stock as a single class. Holders of Series Seed are entitled to nominate two out of five of the Company's directors.

Stock Transactions

On July 1, 2019, the Company entered into a Series Seed Preferred Stock Purchase Agreement ("Purchase Agreement") with five qualified investors. The investors agreed to purchase and the Company agreed to sell and issue to investors a total of 1,146,138 shares of Series Seed Preferred Stock, \$0.00001 par value per share, at a purchase price of \$6.09 per share. On July 1, 2019, the Company received approximately \$6.9 million (net of offering costs of approximately \$45,000) in cash from investors in exchange for the issuance of 1,146,138 shares of Series Seed Preferred Stock.

2019 Equity Incentive Plan

The Company's 2019 Equity Incentive Plan (the "2019 Plan") was adopted by its board of directors and by its shareholders on July 1, 2019. The Company has reserved 350,000 shares of common stock for issuance pursuant to the 2019 Plan.

Stock Options

On December 19, 2019, the Company granted options to purchase up to 57,404 shares of the Company's common stock to an employee pursuant to the 2019 Plan. The aggregate grant date fair value of these options was approximately \$0.2 million. The employee resigned from the Company effective August 31, 2020 and was retained as a consultant starting September 1, 2020. Pursuant to the amended stock option agreement, the employee forfeited 34,444 shares of options originally granted. The remaining shares of options remain original terms and conditions.

During the year ended December 31, 2020, the Company granted options to purchase up to 172,200 shares of the Company's common stock to its board members and employees pursuant to the 2019 Plan. The aggregate grant date fair value of these options was approximately \$0.5 million.

The fair value of options granted in 2020 and 2019 was estimated using the following assumptions:

	For the Years Ended December 31,	
	2020	2019
Exercise price	\$0.05	\$0.05
Term (years)	5.03 – 6.98	5.50 – 7.02
Expected stock price volatility	112.2% – 115.2%	113.0% – 113.5%
Risk-free rate of interest	0.37% – 1.76%	1.73% – 1.86%

BLUE WATER VACCINES, INC.
Notes to Financial Statements

Note 6 — Stockholders' Equity (cont.)

A summary of stock option activity for the six months ended June 30, 2021 and years ended December 31, 2020 and 2019 is presented below:

	Number of Shares	Weighted Average Exercise Price	Total Intrinsic Value	Weighted Average Remaining Contractual Life (in years)
Outstanding as of December 31, 2018	—	\$ —	\$ —	—
Granted	57,404	0.05	156,713	10.0
Outstanding as of December 31, 2019	57,404	\$ 0.05	\$ 156,713	10.0
Granted	172,200	0.05	470,106	9.1
Forfeited	(34,444)	—	—	—
Outstanding as of December 31, 2020	195,160	\$ 0.05	\$ 532,787	9.1
Outstanding as of June 30, 2021	195,160	\$ 0.05	\$ 532,787	8.6
Options vested and exercisable as of June 30, 2021	85,134	\$ 0.05	\$ 232,416	8.6

Stock-based compensation

Stock-based compensation expense for the six months ended June 30, 2021 and 2020, and for the years ended December 31, 2020 and 2019 were as follows:

	For the six months ended June 30,		For the Years Ended December 31,	
	2021	2020	2020	2019
General and administrative	\$ 23,876	\$ 62,950	\$ 89,555	\$ 1,633
Research and development	52,769	172,860	245,282	1,633
Total	\$ 76,645	\$ 235,810	\$ 334,837	\$ 3,266

As of June 30, 2021, future stock-based compensation expense relating to outstanding stock options is approximately \$0.1 million and will be recorded through December 2023.

Note 7 — Commitments and Contingencies

Office lease

The Company leased office space for approximately \$5,500 a month from a related party. The Company paid a \$15,000 rental deposit and rent expense for the six months ended June 30, 2021 and 2020 and for the years ended December 31, 2020 and 2019 was approximately \$28,000, \$33,000, \$66,000 and \$66,000, respectively. The Company terminated the related party lease in May 2021 and entered into a new lease with an unrelated party in April 2021. The Company is not a party to a lease with a term in excess of 12 months and has a month-to-month lease as of June 30, 2021.

Litigation

From time to time, the Company may be subject to various legal proceedings and claims that arise in the ordinary course of its business activities. The Company is not a party to any material legal proceedings and is not aware of any pending or threatened claims.

BLUE WATER VACCINES, INC.
Notes to Financial Statements

Note 7 — Commitments and Contingencies (cont.)

Significant agreements

Oxford University Innovation Limited

Pursuant to the OUI Agreement, as disclosed in Note 5, the Company is obligated to pay a 6% royalty on all net sales of licensed products, as defined in the OUI Agreement, as well as on any sums received by the Company from any sublicensee (including all up-front, milestone and other one-off payments received by the Company from any sub-licenses or other contracts granted by the Company with respect to the licensed technology). In addition, the Company is required to pay OUI milestone payments of up to an aggregate of \$51 million upon the achievement of specified development milestones, of approximately \$2.25 million, regulatory milestones, of approximately \$9.5 million and commercial milestones, of approximately \$39.5 million.

Oxford University Research Agreement

Pursuant to the terms of the OUI Agreement, as disclosed in Note 5, the Company entered into a sponsored research agreement dated December 18, 2019 with Oxford University for research related to the OUI Agreement for a period of three years for a total of £420,000. The Company prepaid the full amount to Oxford of \$554,802 for the services in January 2020, of which approximately \$0.3 million and \$0.4 million remains as prepaid expense as of June 30, 2021 and December 31, 2020, respectively.

St. Jude Children's Hospital

Pursuant to the St. Jude Agreement, as disclosed in Note 5, the Company is obligated to make 4% royalty payments for each licensed product(s) sold by the Company or its affiliates, based on the net sales for the duration of the St. Jude Agreement and also pay 15% of consideration received for any sublicensees. The Company is required to pay an annual maintenance fee of \$10,000 beginning on the first anniversary of the Effective Date (which is waived if all of the developmental milestones scheduled for completion before such annual fee is due have been achieved). In addition, the Company is required to pay St. Jude milestone payments of up to an aggregate of \$1 million upon the achievement of specified development milestones, of approximately \$0.2 million, regulatory milestones, of approximately \$0.3 million and commercial milestones, of approximately \$0.5 million.

St. Jude Children's Sponsored Research Agreement

In addition to the St. Jude Agreement, the Company also entered into a sponsored research agreement dated May 3, 2021 with St. Jude for research related to the St. Jude Agreement. Pursuant to this research agreement, the Company is obligated to pay St. Jude an aggregate amount of \$73,073 in two parts, Phase I for \$57,624 and Phase II for \$15,449. As of June 30, 2021, the Company accrued the Phase I payment of \$57,624 which is recorded as research and development expenses.

Cincinnati Children's Hospital Medical Center

Pursuant to the CHMC Agreement, as disclosed in Note 5, the Company is obligated to pay CHMC a single-digit royalty on net sales, being 5%, 4% or 2% depending on the product, under the agreement and to pay up to a 25% royalty on any royalties paid to the Company by any sublicensee. In addition, the Company is required to pay CHMC an aggregate of up to \$59.75 million upon the achievement of specified development milestones, of approximately \$0.5 million, regulatory milestones, of approximately \$1.25 million and commercial milestones, of approximately \$58 million.

Ology Bioservices, Inc. (which was later acquired by National Resilience, Inc.)

Pursuant to the Ology MSA and the second Project Addendum, as disclosed in Note 5, the Company is obligated to pay Ology an aggregate amount of approximately \$2.8 million, plus reimbursement for materials and outsourced testing which will be billed at cost plus 15%. No work was started as of June 30, 2021.

BLUE WATER VACCINES, INC.
Notes to Financial Statements

Note 7 — Commitments and Contingencies (cont.)

Indemnification

In the normal course of business, the Company enters into contracts and agreements that contain a variety of representations and warranties and provide for general indemnifications. The Company's exposure under these agreements is unknown because it involves claims that may be made against the Company in the future but have not yet been made. To date, the Company has not paid any claims or been required to defend any action related to its indemnification obligations. However, the Company may incur charges in the future as a result of these indemnification obligations.

Risks and Uncertainties — COVID-19

Management continues to evaluate the impact of the COVID-19 pandemic on the industry and has concluded that while it is reasonably possible that the virus could have a negative effect on the Company's financial position, results of its operations and/or search for drug candidates, the specific impact is not readily determinable as of the date of these financial statements. The financial statements do not include any adjustments that might result from the outcome of this uncertainty.

Note 8 — Related Party Transactions

The Company has engaged the Chief Executive Officer, who is also the Board Chairman and sole common stock shareholder, of the Company pursuant to a consulting agreement commencing October 22, 2018, which calls for the Company to pay for consulting services performed on a monthly basis. For the six months ended June 30, 2021 and years ended December 31, 2020 and 2019, the Company incurred approximately \$0.2 million, \$0.4 million and \$0.4 million, respectively in fees under the consulting agreement, which are recognized in general and administrative expenses in the statements of operations.

The Company also leased office space from a related party, through common ownership, and had a rental deposit of \$15,000 on the balance sheets as of December 31, 2020 and 2019. The lease is further described in Note 7 of these financial statements.

As of June 30, 2021, December 31, 2020 and 2019, the Company has a receivable from the related party of approximately \$22,000, \$10,000 and \$8,000, respectively, as presented on the balance sheets. The receivable from related party consists of utility expense paid, rental deposit due subsequent to cancellation of the lease, and overpaid rent expenses.

One of the Company's directors serves on the Advisory Board for the Cincinnati Children's Hospital Medical Center Innovation Fund, which is affiliated with CHMC. The Company has an exclusive license agreement with CHMC as disclosed in Note 5.

Note 9 — Income Taxes

At December 31, 2020, the Company had a net operating loss ("NOL") carryforward for Federal and state income tax purposes totaling approximately \$2.1 million available to reduce future taxable income, all of which are carried forward indefinitely for federal tax purposes under the Tax Cuts and Jobs Act. The Coronavirus Aid, Relief, and Economic Security Act ("CARES Act") signed in to law on March 27, 2020, provided that NOLs generated in a taxable year beginning in 2018, 2019, or 2020, may now be carried back five years and forward indefinitely. In addition, the limitation of NOL utilization up to 80% of taxable income limitation is temporarily removed, allowing NOLs to fully offset taxable income. Some of the state net operating losses follow the Federal Tax Cuts and Jobs Act and are carried over indefinitely, and others have various expiration dates.

The NOL carry forward is subject to review and possible adjustment by the Internal Revenue Service and state tax authorities. Under the Internal Revenue Code ("IRC") Sections 382 and 383, annual use of the Company's net operating loss carryforwards to offset taxable income may be limited based on cumulative changes in ownership. The Company has not completed an analysis to determine whether any such limitations have been triggered as

BLUE WATER VACCINES, INC.
Notes to Financial Statements

Note 9 — Income Taxes (cont.)

of December 31, 2020. The amount of the annual limitation, if any, will be determined based on the value of the Company immediately prior to the ownership change. Subsequent ownership changes may further affect the limitation in future years.

The Company has evaluated the positive and negative evidence bearing upon the realizability of its deferred tax assets. Based on the Company's history of operating losses since inception, the Company has concluded that it is more likely than not that the benefit of its deferred tax assets will not be realized. Accordingly, the Company has provided a full valuation allowance for deferred tax assets as of December 31, 2020 and 2019.

The tax effects of the temporary differences and carryforwards that give rise to deferred tax assets consist of the following:

	As of December 31,	
	2020	2019
Deferred tax assets:		
Net-operating loss carryforward	\$ 554,813	\$ 235,363
Stock-based compensation	91,035	880
License agreement	20,848	—
Charitable contributions	11,247	477
Other accrued expenses	—	15,451
Total deferred tax assets	677,943	252,171
Valuation allowance	(677,943)	(252,171)
Deferred tax asset, net of allowance	<u>\$ —</u>	<u>\$ —</u>

A reconciliation of the statutory income tax rates and the Company's effective tax rate is as follows:

	For the year ended December 31,	
	2020	2019
Statutory Federal income tax rate	(21.0)%	(21.0)%
State and local taxes, net of Federal tax benefit	(5.9)%	(5.9)%
Meals and entertainment	0.3%	0.1%
Change in Valuation Allowance	26.6%	26.8%
Income Taxes Provision (Benefit)	<u>0.0%</u>	<u>0.0%</u>

The Company's major tax jurisdictions are the United States and Connecticut and the Company does not have any pending tax audits.

Shares
Common Stock



PROSPECTUS

, 2021

Sole Book-Running Manager

Maxim Group LLC

Through and including _____, 2021 (25 days after the date of this prospectus), all dealers that buy, sell or trade shares of our common stock, whether or not participating in this offering, may be required to deliver a prospectus. This delivery requirement is in addition to the obligation of dealers to deliver a prospectus when acting as underwriters and with respect to their unsold allotments or subscriptions.

PART II**INFORMATION NOT REQUIRED IN PROSPECTUS****Item 13. Other Expenses of Issuance and Distribution**

The following table sets forth the expenses in connection with this registration statement. All of such expenses are estimates, other than the filing fees payable to the Securities and Exchange Commission and to FINRA.

	Amount to be paid
SEC registration fee	\$ 2,254.70
FINRA filing fee	\$ 4,148.38
Nasdaq initial listing fee	\$ *
Blue sky qualification fees and expenses	\$ *
Transfer agent and registrar fees	\$ *
Accounting fees and expenses	\$ *
Legal fees and expenses	\$ *
Printing and engraving expenses	\$ *
Miscellaneous	\$ *
Total	\$ *

* To be completed by amendment.

Item 14. Indemnification of Directors and Officers

As permitted by Section 102 of the Delaware General Corporation Law, we have adopted provisions in our Amended and Restated Certificate of Incorporation and our Amended and Restated Bylaws that limit or eliminate the personal liability of our directors for a breach of their fiduciary duty of care as a director. The duty of care generally requires that, when acting on behalf of the corporation, directors exercise an informed business judgment based on all material information reasonably available to them. Consequently, a director will not be personally liable to us or our stockholders for monetary damages for breach of fiduciary duty as a director, except for liability for:

- any breach of the director's duty of loyalty to us or our stockholders;
- any act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;
- any act related to unlawful stock repurchases, redemptions or other distributions or payment of dividends; or
- any transaction from which the director derived an improper personal benefit.

These limitations of liability do not affect the availability of equitable remedies such as injunctive relief or rescission. Our Amended and Restated Certificate of Incorporation also authorizes us to indemnify our officers, directors and other agents to the fullest extent permitted under Delaware law.

As permitted by Section 145 of the Delaware General Corporation Law, our Amended and Restated Bylaws provide that:

- we may indemnify our directors, officers and employees to the fullest extent permitted by the Delaware General Corporation Law, subject to limited exceptions;

- we may advance expenses to our directors, officers and employees in connection with a legal proceeding to the fullest extent permitted by the Delaware General Corporation Law, subject to limited exceptions; and
- the rights provided in our bylaws are not exclusive.

Our Amended and Restated Certificate of Incorporation and our Amended and Restated Bylaws provide for the indemnification provisions described above and elsewhere herein. We have entered or will enter into, and intend to continue to enter into, separate indemnification agreements with our directors and officers that may be broader than the specific indemnification provisions contained in the Delaware General Corporation Law. These indemnification agreements generally require us, among other things, to indemnify our officers and directors against certain liabilities that may arise by reason of their status or service as directors or officers, other than liabilities arising from willful misconduct. These indemnification agreements also generally require us to advance any expenses incurred by the directors or officers as a result of any proceeding against them as to which they could be indemnified. These indemnification provisions and the indemnification agreements may be sufficiently broad to permit indemnification of our officers and directors for liabilities, including reimbursement of expenses incurred, arising under the Securities Act of 1933, as amended, or the Securities Act.

The Registrant has purchased and currently intends to maintain insurance on behalf of each and every person who is or was a director or officer of the Registrant against any loss arising from any claim asserted against him or her and incurred by him or her in any such capacity, subject to certain exclusions.

The form of underwriting agreement for this initial public offering provides for indemnification by the underwriters of us and our officers and directors who sign this registration statement for specified liabilities, including matters arising under the Securities Act.

Item 15. Recent Sales of Unregistered Securities

Since October 2018 (our date of inception), we have made the following sales of unregistered securities:

- (1) We granted to certain employees, consultants and directors options to purchase an aggregate of 195,160 shares (net of certain forfeitures of grants) of our common stock at an exercise price of \$0.05 per share.
- (2) We issued an aggregate of 1,146,138 shares of Series Seed Preferred Stock (convertible (as of September 30, 2021) into 1,372,371 shares of common stock) in July 2019 to 5 accredited investors at a price of \$6.09 per share for an aggregate purchase price of \$6,979,980.

The offers, sales and issuances of the securities described in paragraph (1) were deemed to be exempt from registration under Rule 701 promulgated under the Securities Act as transactions under compensatory benefit plans and contracts relating to compensation, or under Section 4(a)(2) of the Securities Act as a transaction by an issuer not involving a public offering. The recipients of such securities were our directors, employees or bona fide consultants and received the securities under our equity incentive plans. Appropriate legends were affixed to the securities issued in these transactions. Each of the recipients of securities in these transactions had adequate access, through employment, business or other relationships, to information about us.

The offers, sales and issuances of the securities described in paragraph (2) were deemed to be exempt under Section 4(a)(2) of the Securities Act or Rule 506 of Regulation D under the Securities Act as a transaction by an issuer not involving a public offering. The recipients of securities in each of these transactions acquired the securities for investment only and not with a view to or for sale in connection with any distribution thereof and appropriate legends were affixed to the securities issued in these transactions. Each of the recipients of securities in these transactions was an accredited investor within the meaning of Rule 501 of Regulation D under the Securities Act and had adequate access, through employment, business or other relationships, to information about us. No underwriters were involved in these transactions.

Item 16. Exhibits and Financial Statement Schedules

Exhibit No.	Description
1.1	Form of Underwriting Agreement.**
3.1	Certificate of Incorporation.*
3.2	Amended and Restated Certificate of Incorporation.*
3.3	Amended and Restated Certificate of Incorporation, effective upon the consummation of the offering.*
3.4	Bylaws.*
3.5	Amended and Restated Bylaws.*
4.1	Specimen Common Stock Certificate.**
4.2	Form of Representative's Warrant (included in Exhibit 1.1)**
5.1	Opinion of Ellenoff Grossman & Schole LLP.**
10.1	2019 Equity Incentive Plan.*
10.2	2021 Equity Incentive Plan.*
10.3	2019 Equity Incentive Plan Form of Stock Option Grant Agreement.*
10.4	2021 Equity Incentive Plan Form of Incentive Stock Option Agreement (Employee).*
10.5	2021 Equity Incentive Plan Form of Nonstatutory Stock Option Agreement (Consultant).*
10.6	2021 Equity Incentive Plan Form of Nonstatutory Stock Option Agreement (Non-Employee Director).*
10.7	2021 Equity Incentive Plan Form of Nonstatutory Stock Option Agreement (Employee).*
10.8#	Exclusive License Agreement between the Registrant and Children's Hospital Medical Center, d/b/a Cincinnati Children's Hospital Medical Center, effective as of June 1, 2021.**
10.9#	License Agreement between the Registrant and Oxford University Innovation Limited, effective as of July 16, 2019.**
10.10#	Exclusive License Agreement between the Registrant and St. Jude Children's Research Hospital, Inc., effective as of January 27, 2020.**
10.11	Lease Agreement, dated as of April 29, 2021, between the Registrant and Regus Management Group, LLC.*
10.12	Master Services Agreement between the Registrant and Ology Bioservices, Inc., effective as of July 19, 2019.*
10.13	Project Addendum 1 to Master Services Agreement between the Registrant and Ology Bioservices, Inc., effective as of October 9, 2019.*
10.14	Letter Agreement between the Registrant and Ology Bioservices, Inc., dated as of January 9, 2020.*
10.15	Project Addendum II to Master Services Agreement between the Registrant and Ology Bioservices, Inc., effective as of May 21, 2021.*
10.16	Form of Employment Agreement with Joseph Hernandez.*
10.17	Form of Employment Agreement with Erin Henderson.*
10.18	Form of Indemnification Agreement for Directors and Officers.*
14	Code of Ethics.**
23.1	Consent of Mayer Hoffman McCann P.C.*
23.2	Consent of Ellenoff Grossman & Schole LLP (included in Exhibit 5.1).*
24.1	Power of Attorney.***
99.1	Form of Audit Committee Charter.**
99.2	Form of Compensation Committee Charter.**
99.3	Form of Nominating and Corporate Governance Committee Charter.**
99.4	Consent of James Sapirstein.*

* Filed herewith.

** To be filed by amendment.

*** Included on signature page.

Portions of this exhibit (indicated by asterisks) have been omitted as such information is (i) not material and (ii) would likely cause competitive harm to the Registrant if publicly disclosed.

Item 17. Undertakings

The undersigned registrant hereby undertakes:

1. To file, during any period in which offers or sales are being made, a post-effective amendment to this Registration Statement:
 - (i) To include any prospectus required by section 10(a)(3) of the Securities Act of 1933;
 - (ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement.
 - (iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement.
2. For the purposes of determining any liability under the Securities Act of 1933, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.
3. To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.
4. For the purpose of determining liability under the Securities Act of 1933 to any purchaser:
 - (i) If the registrant is relying on Rule 430B:
 - (a) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and
 - (b) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by section 10(a) of the Securities Act of 1933 shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date; or

- (ii) If the registrant is subject to Rule 430C, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such first use, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such date of first use.
- 5. For the purposes of determining liability under the Securities Act of 1933 to any purchaser in the initial distributions of the securities, the undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:
 - (i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;
 - (ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;
 - (iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and
 - (iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.
- 6. The undersigned registrant hereby undertakes to provide to the underwriter at the closing specified in the underwriting agreements certificates in such denominations and registered in such names as required by the underwriter to permit prompt delivery to each purchaser.
- 7. The undersigned registrant hereby undertakes that:
 - (i) For purposes of determining any liability under the Securities Act of 1933, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b) (1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective.
 - (ii) For the purpose of determining any liability under the Securities Act of 1933, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to our directors, officers and controlling persons pursuant to the provisions above, or otherwise, we have been advised that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act, and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities, other than the payment by us of expenses incurred or paid by one of our directors, officers, or controlling persons in the successful defense of any action, suit or proceeding, is asserted by one of our directors, officers, or controlling persons in connection with the securities being registered, we will, unless in the opinion of our counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question of whether such indemnification is against public policy as expressed in the Securities Act, and we will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Cincinnati, State of Ohio, on the 8th day of October, 2021.

Blue Water Vaccines, Inc.

/s/ Joseph Hernandez

Name: Joseph Hernandez

Title: Chief Executive Officer
(Principal Executive Officer)

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned officers and directors of Blue Water Vaccines, Inc., a Delaware corporation, do hereby constitute and appoint Joseph Hernandez, as his or her true and lawful attorney-in-fact and agent, with full power of substitution and re-substitution, for him and in his name, place, and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments, exhibits thereto and other documents in connection therewith) to this Registration Statement and any subsequent registration statement filed by the registrant pursuant to Rule 462(b) of the Securities Act of 1933, as amended, which relates to this Registration Statement, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorney-in-fact and agent full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorney-in-fact and agent, or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

Name	Position	Date
<u>/s/ Joseph Hernandez</u> Joseph Hernandez	Chief Executive Officer (Principal Executive Officer)	October 8, 2021
<u>/s/ Jon Garfield</u> Jon Garfield	Interim Chief Financial Officer (Principal Financial Officer)	October 8, 2021
<u>/s/ Kimberly Murphy</u> Kimberly Murphy	Director	October 8, 2021
<u>/s/ John Rice</u> John Rice, Ph.D.	Director	October 8, 2021
<u>/s/ Allan L. Shaw</u> Allan L. Shaw	Director	October 8, 2021
<u>/s/ Michael Venerable</u> Michael Venerable	Director	October 8, 2021

STATE of DELAWARE
CERTIFICATE of INCORPORATION
A STOCK CORPORATION

- **First:** The name of this Corporation is Blue Water Vaccines Inc.
- **Second:** Its registered office in the State of Delaware is to be located at 1013 Centre Rd., Suite 403-B Street, in the City of New Castle County of Wilmington Zip Code 19805. The registered agent in charge thereof is VCorp Services.
- **Third:** The purpose of the corporation is to engage in any lawful act or activity for which corporations may be organized under the General Corporation Law of Delaware.
- **Fourth:** The amount of the total stock of this corporation is authorized to issue is 10,000,000 shares (number of authorized shares) with a par value of 0.01 per share.
- **Fifth:** The name and mailing address of the incorporator are as follows:

Name	Joseph Hernandez
Mailing Address	15 E Putnam Ave., Suite 363 Greenwich, CT Zip Code 06830

- **I, The Undersigned,** for the purpose of forming a corporation under the laws of the State of Delaware, do make, file and record this Certificate, and do certify that the facts herein stated are true, and I have accordingly hereunto set my hand this 22nd day of October , A.D. 2018.

BY: /s/ Joseph Hernandez
(Incorporator)

NAME: Joseph Hernandez
(type or print)

AMENDED AND RESTATED
CERTIFICATE OF INCORPORATION
OF
BLUE WATER VACCINES INC.

(Pursuant to Sections 242 and 245 of the
General Corporation Law of the State of Delaware)

Blue Water Vaccines Inc., a corporation organized and existing under and by virtue of the provisions of the General Corporation Law of the State of Delaware (the “**General Corporation Law**”),

DOES HEREBY CERTIFY:

1. That the name of the corporation is Blue Water Vaccines Inc., and that this corporation was originally incorporated pursuant to the General Corporation Law on October 26, 2018 under the name Blue Water Vaccines Inc.

2. That the Board of Directors duly adopted resolutions proposing to amend and restate the Certificate of Incorporation of this corporation, declaring said amendment and restatement to be advisable and in the best interest of this corporation and its stockholders, and authorizing the appropriate officers of this corporation to solicit the consent of the stockholders therefor, which resolution setting forth the proposed amendment and restatement is as follows:

RESOLVED, that the Certificate of Incorporation of this corporation be amended and restated in its entirety to read as follows:

FIRST: The name of this corporation is Blue Water Vaccines Inc. (the “**Corporation**”).

SECOND: The address of its registered office of the Corporation in the State of Delaware is VCorp Services, LLC, 1013 Centre Road, Suite 403-B, in the City of Wilmington, County of New Castle, Delaware 19805. The name of its registered agent at such address is The VCorp Services, LLC.

THIRD: The nature of the business or purposes to be conducted or promoted is to engage in any lawful act or activity for which corporations may be organized under the General Corporation Law.

FOURTH: The total number of shares of all classes of stock which the Corporation shall have authority to issue is (i) 2,300,000 shares of Common Stock, \$0.00001 par value per share (“**Common Stock**”) and (ii) 1,150,000 shares of Preferred Stock, \$0.00001 par value per share (“**Preferred Stock**”).

The following is a statement of the designations and the powers, privileges and rights, and the qualifications, limitations or restrictions thereof in respect of each class of capital stock of the Corporation.

A. COMMON STOCK

1. General. The voting, dividend and liquidation rights of the holders of the Common Stock are subject to and qualified by the rights, powers and preferences of the holders of the Preferred Stock set forth herein.

2. Voting. The holders of the Common Stock are entitled to one vote for each share of Common Stock held at all meetings of stockholders (and written actions in lieu of meetings). There shall be no cumulative voting. The number of authorized shares of Common Stock may be increased or decreased (but not below the number of shares thereof then outstanding) by (in addition to any vote of the holders of one or more series of Preferred Stock that may be required by the terms of this Amended and Restated Certificate of Incorporation) the affirmative vote of the holders of shares of capital stock of the Corporation representing a majority of the votes represented by all outstanding shares of capital stock of the Corporation entitled to vote, irrespective of the provisions of Section 242(b)(2) of the General Corporation Law.

B. PREFERRED STOCK

1,150,000 shares of the authorized and unissued Preferred Stock of the Corporation are hereby designated “**Series Seed Preferred Stock**” with the following rights, preferences, powers, privileges and restrictions, qualifications and limitations. Unless otherwise indicated, references to “sections” or “subsections” in this Part B of this Article Fourth refer to sections and subsections of Part B of this Article Fourth.

1. Dividends.

From and after the date of the issuance of any shares of Series Seed Preferred Stock, dividends at the rate per annum of 8%, compounding on an annual basis, shall accrue on such shares of Series Seed Preferred Stock (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the Series Seed Preferred Stock) (the “**Accruing Dividends**”). Accruing Dividends shall accrue from day to day, whether or not declared, and shall be cumulative; provided, however, that except as set forth in the following sentence of this Section 1, or in Subsection 2.1, such Accruing Dividends shall be payable only when, as, and if declared by the Board of Directors, or upon a Deemed Liquidation Event, and the Corporation shall be under no obligation to pay such Accruing Dividends. The Corporation shall not declare, pay or set aside any dividends on shares of any other class or series of capital stock of the Corporation (other than dividends on shares of Common Stock payable in shares of Common Stock) unless (in addition to the obtaining of any consents required elsewhere in this Amended and Restated Certificate of Incorporation) the holders of the Series Seed Preferred Stock then outstanding shall first receive, or simultaneously receive, a dividend on each outstanding share of Series Seed Preferred Stock in an amount at least equal to the greater of (i) the amount of the aggregate Accruing Dividends then accrued on such share of Series Seed Preferred Stock and not previously paid and (ii) (A) in the case of a dividend on Common Stock or any class or series that is convertible into Common Stock, that dividend per share of Series Seed Preferred Stock as would equal the product of (1) the dividend payable on each share of such class or series determined, if applicable, as if all shares of such class or series had been converted into Common Stock and (2) the number of shares of Common Stock issuable upon conversion of a share of Series Seed Preferred Stock, in each case calculated on the record date for determination of holders entitled to receive such dividend or (B) in the case of a dividend on any class or series that is not convertible into Common Stock, at a rate per share of Series Seed Preferred Stock determined by (1) dividing the amount of the dividend payable on each share of such class or series of capital stock by the original issuance price of such class or series of capital stock (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to such class or series) and (2) multiplying such fraction by an amount equal to the Series Seed Original Issue Price (as defined below); provided that if the Corporation declares, pays or sets aside, on the same date, a dividend on shares of more than one class or series of capital stock of the Corporation, the dividend payable to the holders of Series Seed Preferred Stock pursuant to this Section 1 shall be calculated based upon the dividend on the class or series of capital stock that would result in the highest Series Seed Preferred Stock dividend. The “**Series Seed Original Issue Price**” shall mean \$6.09 per share, subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the Series Seed Preferred Stock.

2. Liquidation, Dissolution or Winding Up: Certain Mergers, Consolidations and Asset Sales.

2.1 Preferential Payments to Holders of Series Seed Preferred Stock.

2.1.1 In the event of any voluntary or involuntary liquidation, dissolution or winding up of the Corporation that occurs before a Pre-Clinical Milestone, the holders of shares of Series Seed Preferred Stock then outstanding shall be entitled to be paid out of the assets of the Corporation available for distribution to its stockholders or, in the case of a Deemed Liquidation Event (as defined below), out of the consideration payable to stockholders in such Deemed Liquidation Event or the Available Proceeds (as defined below), before any payment shall be made to the holders of Common Stock by reason of their ownership thereof, an amount per share equal to two times (2X) the Series Seed Original Issue Price, plus any Accruing Dividends accrued but unpaid thereon, whether or not declared, together with any other dividends declared but unpaid thereon. If upon any such liquidation, dissolution or winding up of the Corporation or Deemed Liquidation Event, the assets of the Corporation available for distribution to its stockholders shall be insufficient to pay the holders of shares of Series Seed Preferred Stock the full amount to which they shall be entitled under this Subsection 2.1.1, the holders of shares of Series Seed Preferred Stock shall share ratably in any distribution of the assets available for distribution in proportion to the respective amounts which would otherwise be payable in respect of the shares held by them upon such distribution if all amounts payable on or with respect to such shares were paid in full. For purposes hereof, “**Pre-Clinical Milestone**” means broad protection against both current and historical human influenza A and B strains induced by vaccination of mice.

2.1.2 In the event of any voluntary or involuntary liquidation, dissolution or winding up of the Corporation that occurs after a Pre-Clinical Milestone and after a Qualified Financing (as defined below), the holders of shares of Series Seed Preferred Stock then outstanding shall be entitled to be paid out of the assets of the Corporation available for distribution to its stockholders or, in the case of a Deemed Liquidation Event (as defined below), out of the consideration payable to stockholders in such Deemed Liquidation Event or the Available Proceeds (as defined below), before any payment shall be made to the holders of Common Stock by reason of their ownership thereof, an amount per share equal to one times (1X) the Series Seed Original Issue Price, plus any Accruing Dividends accrued but unpaid thereon, whether or not declared, together with any other dividends declared but unpaid thereon. If upon any such liquidation, dissolution or winding up of the Corporation or Deemed Liquidation Event, the assets of the Corporation available for distribution to its stockholders shall be insufficient to pay the holders of shares of Series Seed Preferred Stock the full amount to which they shall be entitled under this Subsection 2.1.2, the holders of shares of Series Seed Preferred Stock shall share ratably in any distribution of the assets available for distribution in proportion to the respective amounts which would otherwise be payable in respect of the shares held by them upon such distribution if all amounts payable on or with respect to such shares were paid in full. For purposes hereof, “**Qualified Financing**” shall mean the authorization, issuance and sale by the Corporation of at least \$10,000,000 (excluding any convertible instruments such as convertible notes, warrants and Simple Agreements for Future Equity) worth of New Equity Securities of which at least \$5,000,000 is invested by an institutional investor. For purposes hereof, “**New Equity Securities**” shall mean any newly created series of Preferred Stock of the Corporation which is senior to or pari passu with the Series Seed Preferred Stock.

2.1.3 In the event of any voluntary or involuntary liquidation, dissolution or winding up of the Corporation that occurs after a Pre-Clinical Milestone and before a Qualified Financing (as defined below), the holders of shares of Series Seed Preferred Stock then outstanding shall be entitled to be paid out of the assets of the Corporation available for distribution to its stockholders or, in the case of a Deemed Liquidation Event (as defined below), out of the consideration payable to stockholders in such Deemed Liquidation Event or the Available Proceeds (as defined below), before any payment shall be made to the holders of Common Stock by reason of their ownership thereof, an amount per share equal the greater of (a) such amount per share as such holder would have been entitled to receive after a Qualified Financing pursuant to Subsections 2.1.2 and 2.2.1, or (b) two times (2X) the Series Seed Original Issue Price, plus any Accruing Dividends accrued but unpaid thereon, whether or not declared, together with any other dividends declared but unpaid thereon (the “**2X Liquidation Amount**”).

2.2 Distribution of Remaining Assets.

2.2.1 In the event of any voluntary or involuntary liquidation, dissolution or winding up of the Corporation, after the payment in full of all Series Seed Liquidation Amounts required to be paid to the holders of shares of Series Seed Preferred Stock, the remaining assets of the Corporation available for distribution to its stockholders or, in the case of a Deemed Liquidation Event, the consideration not payable to the holders of shares of Series Seed Preferred Stock pursuant to Section 2.1 or the remaining Available Proceeds, as the case may be (the “**Remaining Assets**”), shall be distributed among the holders of the shares of Series Seed Preferred Stock and Common Stock, pro rata based on the number of shares held by each such holder, treating for this purpose all such securities as if they had been converted to Common Stock pursuant to the terms of this Amended and Restated Certificate of Incorporation immediately prior to such liquidation, dissolution or winding up of the Corporation, subject to Subsection 2.2.2 below.

2.2.2 Notwithstanding the foregoing, in the event that the holders of shares of Series Seed Preferred Stock are entitled to receive the price per share equal to the 2X Liquidation Amount under Subsection 2.1.3(b), after the payment in full of the 2X Liquidation Amount, the Remaining Assets shall be distributed among the holders of shares of Common Stock, pro rata based on the number of shares held by each such holder.

The aggregate amount which a holder of a share of Series Seed Preferred Stock is entitled to receive under Subsections 2.1 and 2.2 is hereinafter referred to as the “**Series Seed Liquidation Amount.**”

2.3 Deemed Liquidation Events.

2.3.1 Definition. Each of the following events shall be considered a “**Deemed Liquidation Event**” unless the holders of at least a majority of the outstanding shares of Series Seed Preferred Stock (the “**Requisite Holders**”) elect otherwise by written notice sent to the Corporation at least 5 days prior to the effective date of any such event:

(a) a merger or consolidation in which

- (i) the Corporation is a constituent party or
- (ii) a subsidiary of the Corporation is a constituent party and the Corporation issues shares of its capital stock pursuant to such merger or consolidation,

except any such merger or consolidation involving the Corporation or a subsidiary in which the shares of capital stock of the Corporation outstanding immediately prior to such merger or consolidation continue to represent, or are converted into or exchanged for shares of capital stock that represent, immediately following such merger or consolidation, at least a majority, by voting power, of the capital stock of (1) the surviving or resulting corporation; or (2) if the surviving or resulting corporation is a wholly owned subsidiary of another corporation immediately following such merger or consolidation, the parent corporation of such surviving or resulting corporation; or

(b) (1) the sale, lease, transfer, exclusive license or other disposition, in a single transaction or series of related transactions, by the Corporation or any subsidiary of the Corporation of all or substantially all of the business or assets of the Corporation and its subsidiaries taken as a whole, or (2) the sale or disposition (whether by merger, consolidation or otherwise, and whether in a single transaction or a series of related transactions) of one or more subsidiaries of the Corporation if substantially all of the assets of the Corporation and its subsidiaries taken as a whole are held by such subsidiary or subsidiaries, except where such sale, lease, transfer, exclusive license or other disposition is to a wholly owned subsidiary of the Corporation.

2.3.2 Effecting a Deemed Liquidation Event.

(a) The Corporation shall not have the power to effect a Deemed Liquidation Event referred to in Subsection 2.3.1(a) (i) unless the agreement or plan of merger or consolidation for such transaction (the “**Merger Agreement**”) provides that the consideration payable to the stockholders of the Corporation in such Deemed Liquidation Event shall be paid to the holders of capital stock of the Corporation in accordance with Subsections 2.1 and 2.2.

(b) In the event of a Deemed Liquidation Event referred to in Subsection 2.3.1(a)(ii) or 2.3.1(b), if the Corporation does not effect a dissolution of the Corporation under the General Corporation Law within ninety (90) days after such Deemed Liquidation Event, then (i) the Corporation shall send a written notice to each holder of Series Seed Preferred Stock no later than the ninetieth (90th) day after the Deemed Liquidation Event advising such holders of their right (and the requirements to be met to secure such right) pursuant to the terms of the following clause; (ii) to require the redemption of such shares of Series Seed Preferred Stock, and (iii) if the holders of at least a majority of the then outstanding shares of Series Seed Preferred Stock so request in a written instrument delivered to the Corporation not later than one hundred twenty (120) days after such Deemed Liquidation Event, the Corporation shall use the consideration received by the Corporation for such Deemed Liquidation Event (net of any retained liabilities associated with the assets sold or technology licensed, as determined in good faith by the Board of Directors of the Corporation), together with any other assets of the Corporation available for distribution to its stockholders, all to the extent permitted by Delaware law governing distributions to stockholders (the “**Available Proceeds**”), on the one hundred fiftieth (150th) day after such Deemed Liquidation Event, to redeem all outstanding shares of Series Seed Preferred Stock at a price per share equal to the Series Seed Liquidation Amount. Notwithstanding the foregoing, in the event of a redemption pursuant to the preceding sentence, if the Available Proceeds are not sufficient to redeem all outstanding shares of Series Seed Preferred Stock, the Corporation shall redeem a pro rata portion of each holder’s shares of Series Seed Preferred Stock to the fullest extent of such Available Proceeds, based on the respective amounts which would otherwise be payable in respect of the shares to be redeemed if the Available Proceeds were sufficient to redeem all such shares, and shall redeem the remaining shares as soon as it may lawfully do so under Delaware law governing distributions to stockholders. Prior to the distribution or redemption provided for in this Subsection 2.3.2(b), the Corporation shall not expend or dissipate the consideration received for such Deemed Liquidation Event, except to discharge expenses incurred in connection with such Deemed Liquidation Event.

2.3.3 Amount Deemed Paid or Distributed. The amount deemed paid or distributed to the holders of capital stock of the Corporation upon any such merger, consolidation, sale, transfer, exclusive license, other disposition or redemption shall be the cash or the value of the property, rights or securities to be paid or distributed to such holders pursuant to such Deemed Liquidation Event. The value of such property, rights or securities shall be determined in good faith by the Board of Directors of the Corporation, including the approval of all Series Seed Directors (as defined herein).

2.3.4 Allocation of Escrow and Contingent Consideration. In the event of a Deemed Liquidation Event pursuant to Subsection 2.3.1(a)(i), if any portion of the consideration payable to the stockholders of the Corporation is payable only upon satisfaction of contingencies (the “**Additional Consideration**”), the Merger Agreement shall provide that (a) the portion of such consideration that is not Additional Consideration (such portion, the “**Initial Consideration**”) shall be allocated among the holders of capital stock of the Corporation in accordance with Subsections 2.1 and 2.2 as if the Initial Consideration were the only consideration payable in connection with such Deemed Liquidation Event; and (b) any Additional Consideration which becomes payable to the stockholders of the Corporation upon satisfaction of such contingencies shall be allocated among the holders of capital stock of the Corporation in accordance with Subsections 2.1 and 2.2 after taking into account the previous payment of the Initial Consideration as part of the same transaction. For the purposes of this Subsection 2.3.4, consideration placed into escrow or retained as a holdback to be available for satisfaction of indemnification or similar obligations in connection with such Deemed Liquidation Event shall be deemed to be Additional Consideration.

3. Voting.

3.1 General. On any matter presented to the stockholders of the Corporation for their action or consideration at any meeting of stockholders of the Corporation (or by written consent of stockholders in lieu of meeting), each holder of outstanding shares of Series Seed Preferred Stock shall be entitled to cast the number of votes equal to the number of whole shares of Common Stock into which the shares of Series Seed Preferred Stock held by such holder are convertible as of the record date for determining stockholders entitled to vote on such matter. Except as provided by law or by the other provisions of this Amended and Restated Certificate of Incorporation, holders of Series Seed Preferred Stock shall vote together with the holders of Common Stock as a single class and on an as-converted to Common Stock basis.

3.2 Election of Directors. The holders of record of the shares of Series Seed Preferred Stock, exclusively and as a separate class, shall be entitled to elect two (2) directors of the Corporation (the “**Series Seed Directors**”). Any director elected as provided in the preceding sentence may be removed without cause by, and only by, the affirmative vote of the holders of the shares of the class or series of capital stock entitled to elect such director or directors, given either at a special meeting of such stockholders duly called for that purpose or pursuant to a written consent of stockholders. If the holders of shares of Series Seed Preferred Stock or Common Stock, as the case may be, fail to elect a sufficient number of directors to fill all directorships for which they are entitled to elect directors, voting exclusively and as a separate class, pursuant to the first sentence of this Subsection 3.2, then any directorship not so filled shall remain vacant until such time as the holders of the Series Seed Preferred Stock or Common Stock, as the case may be, elect a person to fill such directorship by vote or written consent in lieu of a meeting; and no such directorship may be filled by stockholders of the Corporation other than by the stockholders of the Corporation that are entitled to elect a person to fill such directorship, voting exclusively and as a separate class. The holders of record of the shares of Common Stock and of any other class or series of voting stock (including the Series Seed Preferred Stock), exclusively and voting together as a single class, shall be entitled to elect the balance of the total number of directors of the Corporation. At any meeting held for the purpose of electing a director, the presence in person or by proxy of the holders of a majority of the outstanding shares of the class or series entitled to elect such director shall constitute a quorum for the purpose of electing such director. Except as otherwise provided in this Subsection 3.2, a vacancy in any directorship filled by the holders of any class or series shall be filled only by vote or written consent in lieu of a meeting of the holders of such class or series or by any remaining director or directors elected by the holders of such class or series pursuant to this Subsection 3.2.

3.3 Series Seed Preferred Stock Protective Provisions. At any time when shares of Series Seed Preferred Stock are outstanding, the Corporation shall not, either directly or indirectly by amendment, merger, consolidation or otherwise, do any of the following without (in addition to any other vote required by law or this Amended and Restated Certificate of Incorporation) the written consent or affirmative vote of the Requisite Holders given in writing or by vote at a meeting, consenting or voting (as the case may be) separately as a class, and any such act or transaction entered into without such consent or vote shall be null and void *ab initio*, and of no force or effect.

3.3.1 liquidate, dissolve or wind-up the business and affairs of the Corporation, effect any merger or consolidation or any other Deemed Liquidation Event, or consent to any of the foregoing;

3.3.2 amend, alter or repeal any provision of this Amended and Restated Certificate of Incorporation or Bylaws of the Corporation;

3.3.3 create, or authorize the creation of, or issue or obligate itself to issue shares of, any additional class or series of capital stock, or increase the authorized number of shares of Series Seed Preferred Stock or increase the authorized number of shares of any additional class or series of capital stock of the Corporation;

3.3.4 (i) reclassify, alter or amend any existing security of the Corporation that is *pari passu* with the Series Seed Preferred Stock in respect of the distribution of assets on the liquidation, dissolution or winding up of the Corporation, the payment of dividends or rights of redemption, if such reclassification, alteration or amendment would render such other security senior to the Series Seed Preferred Stock in respect of any such right, preference, or privilege or (ii) reclassify, alter or amend any existing security of the Corporation that is junior to the Series Seed Preferred Stock in respect of the distribution of assets on the liquidation, dissolution or winding up of the Corporation, the payment of dividends or rights of redemption, if such reclassification, alteration or amendment would render such other security senior to or *pari passu* with the Series Seed Preferred Stock in respect of any such right, preference or privilege;

3.3.5 cause or permit any of its subsidiaries to sell, issue, sponsor, create or distribute any digital tokens, cryptocurrency or other blockchain-based assets (collectively, “**Tokens**”), including through a pre-sale, initial coin offering, token distribution event or crowdfunding, or through the issuance of any instrument convertible into or exchangeable for Tokens;

3.3.6 purchase or redeem (or permit any subsidiary to purchase or redeem) or pay or declare any dividend or make any distribution on, any shares of capital stock of the Corporation other than (i) redemptions of or dividends or distributions on the Series Seed Preferred Stock as expressly authorized herein, (ii) dividends or other distributions payable on the Common Stock solely in the form of additional shares of Common Stock and (iii) repurchases of stock from former employees, officers, directors, consultants or other persons who performed services for the Corporation or any subsidiary in connection with the cessation of such employment or service at the lower of the original purchase price or the then-current fair market value thereof, or (iv) as approved by the Board of Directors, including the approval of all Series Seed Directors;

3.3.7 create, or authorize the creation of, or issue, or authorize the issuance of any debt security or create any lien or security interest (except for purchase money liens or statutory liens of landlords, mechanics, materialmen, workmen, warehousemen and other similar persons arising or incurred in the ordinary course of business) or incur other indebtedness for borrowed money, including but not limited to obligations and contingent obligations under guarantees, or permit any subsidiary to take any such action with respect to any debt security lien, security interest or other indebtedness for borrowed money unless any such action is approved by the Board of Directors, including the approval of all Series Seed Directors;

3.3.8 create, or hold capital stock in, any subsidiary that is not wholly owned (either directly or through one or more other subsidiaries) by the Corporation, or permit any subsidiary to create, or authorize the creation of, or issue or obligate itself to issue, any shares of any class or series of capital stock, or sell, transfer or otherwise dispose of any capital stock of any direct or indirect subsidiary of the Corporation, or permit any direct or indirect subsidiary to sell, lease, transfer, exclusively license or otherwise dispose (in a single transaction or series of related transactions) of all or substantially all of the assets of such subsidiary;

3.3.9 increase or decrease the authorized number of directors constituting the Board of Directors; or

3.3.10 change the principal business of the Corporation, enter into a new lines of business or exit a current line of business.

4. Optional Conversion.

The holders of the Series Seed Preferred Stock shall have conversion rights as follows (the “**Conversion Rights**”):

4.1 Right to Convert.

4.1.1 Conversion to Common Stock. Each share of Series Seed Preferred Stock shall be convertible, at the option of the holder thereof, at any time and from time to time, and without the payment of additional consideration by the holder thereof, into such number of fully paid and non-assessable shares of Common Stock as is determined by dividing (x) the sum of the Series Seed Original Issue Price plus any Accruing Dividends accrued but unpaid thereon, whether or not declared, by (y) the Series Seed Conversion Price (as defined below) in effect at the time of conversion. The “**Series Seed Conversion Price**” shall initially be equal to the Series Seed Original Issue Price. Such initial Series Seed Conversion Price, and the rate at which shares of Series Seed Preferred Stock may be converted into shares of Common Stock, shall be subject to adjustment as provided below.

4.1.2 Conversion to Additional Series of Preferred Stock. In the event the Corporation enters into a Qualified Financing, each share of Series Seed Preferred Stock shall also be convertible, at the option of the holders of a majority of the shares of Series Seed Preferred Stock, into such number of fully paid and non-assessable shares of a New Equity Shadow Series (as defined below) as is determined by dividing the Series Seed Original Issue Price by the Series Seed Conversion Price. For purposes hereof, a “**New Equity Shadow Series**” shall mean a subseries of New Equity Securities which is identical in all respects to the New Equity Securities, except that the original issue price per share shall be equal to the Series Seed Original Price. For the purposes of clarity, the conversion set forth in this subsection shall not include any dividends, including without limitation, Accruing Dividends.

4.1.3 Termination of Conversion Rights. In the event of a liquidation, dissolution or winding up of the Corporation or a Deemed Liquidation Event, the Conversion Rights shall terminate at the close of business on the last full day preceding the date fixed for the payment of any such amounts distributable on such event to the holders of Series Seed Preferred Stock.

4.2 Fractional Shares. No fractional shares of Common Stock shall be issued upon conversion of the Series Seed Preferred Stock. In lieu of any fractional shares to which the holder would otherwise be entitled, the Corporation shall pay cash equal to such fraction multiplied by the fair market value of a share of Common Stock as determined in good faith by the Board of Directors of the Corporation. Whether or not fractional shares would be issuable upon such conversion shall be determined on the basis of the total number of shares of Series Seed Preferred Stock the holder is at the time converting into Common Stock and the aggregate number of shares of Common Stock issuable upon such conversion.

4.3 Mechanics of Conversion.

4.3.1 Notice of Conversion. In order for a holder of Series Seed Preferred Stock to voluntarily convert shares of Series Seed Preferred Stock into shares of Common Stock, such holder shall (a) provide written notice to the Corporation’s transfer agent at the office of the transfer agent for the Series Seed Preferred Stock (or at the principal office of the Corporation if the Corporation serves as its own transfer agent) that such holder elects to convert all or any number of such holder’s shares of Series Seed Preferred Stock and, if applicable, any event on which such conversion is contingent and (b), if such holder’s shares are certificated, surrender the certificate or certificates for such shares of Series Seed Preferred Stock (or, if such registered holder alleges that such certificate has been lost, stolen or destroyed, a lost certificate affidavit and agreement reasonably acceptable to the Corporation to indemnify the Corporation against any claim that may be made against the Corporation on account of the alleged loss, theft or destruction of such certificate), at the office of the transfer agent for the Series Seed Preferred Stock (or at the principal office of the Corporation if the Corporation serves as its own transfer agent). Such notice shall state such holder’s name or the names of the nominees in which such holder wishes the shares of Common Stock to be issued. If required by the Corporation, any certificates surrendered for conversion shall be endorsed or accompanied by a written instrument or instruments of transfer, in form satisfactory to the Corporation, duly executed by the registered holder or his, her or its attorney duly authorized in writing. The close of business on the date of receipt by the transfer agent (or by the Corporation if the Corporation serves as its own transfer agent) of such notice and, if applicable, certificates (or lost certificate affidavit and agreement) shall be the time of conversion (the “**Conversion Time**”), and the shares of Common Stock issuable upon conversion of the specified shares shall be deemed to be outstanding of record as of such date. The Corporation shall, as soon as practicable after the Conversion Time (i) issue and deliver to such holder of Series Seed Preferred Stock, or to his, her or its nominees, a notice of issuance of uncertificated shares and may, upon written request, issue and deliver a certificate for the number of full shares of Common Stock issuable upon such conversion in accordance with the provisions hereof and, may, if applicable and upon written request, issue and deliver a certificate for the number (if any) of the shares of Series Seed Preferred Stock represented by any surrendered certificate that were not converted into Common Stock, (ii) pay in cash such amount as provided in Subsection 4.2 in lieu of any fraction of a share of Common Stock otherwise issuable upon such conversion and (iii) pay all declared but unpaid dividends on the shares of Series Seed Preferred Stock converted.

4.3.2 Reservation of Shares. The Corporation shall at all times when the Series Seed Preferred Stock shall be outstanding, reserve and keep available out of its authorized but unissued capital stock, for the purpose of effecting the conversion of the Series Seed Preferred Stock, such number of its duly authorized shares of Common Stock as shall from time to time be sufficient to effect the conversion of all outstanding Series Seed Preferred Stock; and if at any time the number of authorized but unissued shares of Common Stock shall not be sufficient to effect the conversion of all then outstanding shares of the Series Seed Preferred Stock, the Corporation shall take such corporate action as may be necessary to increase its authorized but unissued shares of Common Stock to such number of shares as shall be sufficient for such purposes, including, without limitation, engaging in best efforts to obtain the requisite stockholder approval of any necessary amendment to this Amended and Restated Certificate of Incorporation. Before taking any action which would cause an adjustment reducing the Series Seed Conversion Price below the then par value of the shares of Common Stock issuable upon conversion of the Series Seed Preferred Stock, the Corporation will take any corporate action which may, in the opinion of its counsel, be necessary in order that the Corporation may validly and legally issue fully paid and non-assessable shares of Common Stock at such adjusted Series Seed Conversion Price.

4.3.3 Effect of Conversion. All shares of Series Seed Preferred Stock which shall have been surrendered for conversion as herein provided shall no longer be deemed to be outstanding and all rights with respect to such shares shall immediately cease and terminate at the Conversion Time, except only the right of the holders thereof to receive shares of Common Stock in exchange therefor, to receive payment in lieu of any fraction of a share otherwise issuable upon such conversion as provided in Subsection 4.2 and to receive payment of any dividends declared but unpaid thereon. Any shares of Series Seed Preferred Stock so converted shall be retired and cancelled and may not be reissued as shares of such series, and the Corporation may thereafter take such appropriate action (without the need for stockholder action) as may be necessary to reduce the authorized number of shares of Series Seed Preferred Stock accordingly.

4.3.4 No Further Adjustment. Upon any such conversion, no adjustment to the Series Seed Conversion Price shall be made for any declared but unpaid dividends on the Series Seed Preferred Stock surrendered for conversion or on the Common Stock delivered upon conversion.

4.3.5 Taxes. The Corporation shall pay any and all issue and other similar taxes that may be payable in respect of any issuance or delivery of shares of Common Stock upon conversion of shares of Series Seed Preferred Stock pursuant to this Section 4. The Corporation shall not, however, be required to pay any tax which may be payable in respect of any transfer involved in the issuance and delivery of shares of Common Stock in a name other than that in which the shares of Series Seed Preferred Stock so converted were registered, and no such issuance or delivery shall be made unless and until the person or entity requesting such issuance has paid to the Corporation the amount of any such tax or has established, to the satisfaction of the Corporation, that such tax has been paid.

4.4 Adjustments to Series Seed Conversion Price for Diluting Issues.

4.4.1 Special Definitions. For purposes of this Article Fourth, the following definitions shall apply:

(a) “**Option**” shall mean rights, options or warrants to subscribe for, purchase or otherwise acquire Common Stock or Convertible Securities.

(b) “**Series Seed Original Issue Date**” shall mean the date on which the first share of Series Seed Preferred Stock was issued.

(c) “**Convertible Securities**” shall mean any evidences of indebtedness, shares or other securities directly or indirectly convertible into or exchangeable for Common Stock, but excluding Options.

(d) “**Additional Shares of Common Stock**” shall mean all shares of Common Stock issued (or, pursuant to Subsection 4.4.3 below, deemed to be issued) by the Corporation after the Series Seed Original Issue Date, other than (1) the following shares of Common Stock and (2) shares of Common Stock deemed issued pursuant to the following Options and Convertible Securities (clauses (1) and (2), collectively, “**Exempted Securities**”):

- (i) shares of Common Stock, Options or Convertible Securities issued as a dividend or distribution on Series Seed Preferred Stock;

- (ii) shares of Common Stock, Options or Convertible Securities issued by reason of a dividend, stock split, split-up or other distribution on shares of Common Stock that is covered by Subsection 4.5, 4.6, 4.7 or 4.8;
- (iii) shares of Common Stock or Options issued to employees or directors of, or consultants or advisors to, the Corporation or any of its subsidiaries pursuant to a plan, agreement or arrangement approved by the Board of Directors of the Corporation, including the approval of all Series Seed Directors;
- (iv) shares of Common Stock or Convertible Securities actually issued upon the exercise of Options or shares of Common Stock actually issued upon the conversion or exchange of Convertible Securities, in each case provided such issuance is pursuant to the terms of such Option or Convertible Security; or
- (v) shares of Common Stock, Options or Convertible Securities issued with the approval of the Board of Directors of the Corporation.

4.4.2 No Adjustment of Series Seed Conversion Price. No adjustment in the Series Seed Conversion Price shall be made as the result of the issuance or deemed issuance of Additional Shares of Common Stock if the Corporation receives written notice from the Requisite Holders agreeing that no such adjustment shall be made as the result of the issuance or deemed issuance of such Additional Shares of Common Stock.

4.4.3 Deemed Issue of Additional Shares of Common Stock.

(a) If the Corporation at any time or from time to time after the Series Seed Original Issue Date shall issue any Options or Convertible Securities (excluding Options or Convertible Securities which are themselves Exempted Securities) or shall fix a record date for the determination of holders of any class of securities entitled to receive any such Options or Convertible Securities, then the maximum number of shares of Common Stock (as set forth in the instrument relating thereto, assuming the satisfaction of any conditions to exercisability, convertibility or exchangeability but without regard to any provision contained therein for a subsequent adjustment of such number) issuable upon the exercise of such Options or, in the case of Convertible Securities and Options therefor, the conversion or exchange of such Convertible Securities, shall be deemed to be Additional Shares of Common Stock issued as of the time of such issue or, in case such a record date shall have been fixed, as of the close of business on such record date.

(b) If the terms of any Option or Convertible Security, the issuance of which resulted in an adjustment to the Series Seed Conversion Price pursuant to the terms of Subsection 4.4.4, are revised as a result of an amendment to such terms or any other adjustment pursuant to the provisions of such Option or Convertible Security (but excluding automatic adjustments to such terms pursuant to anti-dilution or similar provisions of such Option or Convertible Security) to provide for either (1) any increase or decrease in the number of shares of Common Stock issuable upon the exercise, conversion and/or exchange of any such Option or Convertible Security or (2) any increase or decrease in the consideration payable to the Corporation upon such exercise, conversion and/or exchange, then, effective upon such increase or decrease becoming effective, the Series Seed Conversion Price computed upon the original issue of such Option or Convertible Security (or upon the occurrence of a record date with respect thereto) shall be readjusted to such Series Seed Conversion Price as would have obtained had such revised terms been in effect upon the original date of issuance of such Option or Convertible Security. Notwithstanding the foregoing, no readjustment pursuant to this clause (b) shall have the effect of increasing the Series Seed Conversion Price to an amount which exceeds the lower of (i) the Series Seed Conversion Price in effect immediately prior to the original adjustment made as a result of the issuance of such Option or Convertible Security, or (ii) the Series Seed Conversion Price that would have resulted from any issuances of Additional Shares of Common Stock (other than deemed issuances of Additional Shares of Common Stock as a result of the issuance of such Option or Convertible Security) between the original adjustment date and such readjustment date.

(c) If the terms of any Option or Convertible Security (excluding Options or Convertible Securities which are themselves Exempted Securities), the issuance of which did not result in an adjustment to the Series Seed Conversion Price pursuant to the terms of Subsection 4.4.4 (either because the consideration per share (determined pursuant to Subsection 4.4.5) of the Additional Shares of Common Stock subject thereto was equal to or greater than the Series Seed Conversion Price then in effect, or because such Option or Convertible Security was issued before the Series Seed Original Issue Date), are revised after the Series Seed Original Issue Date as a result of an amendment to such terms or any other adjustment pursuant to the provisions of such Option or Convertible Security (but excluding automatic adjustments to such terms pursuant to anti-dilution or similar provisions of such Option or Convertible Security) to provide for either (1) any increase in the number of shares of Common Stock issuable upon the exercise, conversion or exchange of any such Option or Convertible Security or (2) any decrease in the consideration payable to the Corporation upon such exercise, conversion or exchange, then such Option or Convertible Security, as so amended or adjusted, and the Additional Shares of Common Stock subject thereto (determined in the manner provided in Subsection 4.4.3(a)) shall be deemed to have been issued effective upon such increase or decrease becoming effective.

(d) Upon the expiration or termination of any unexercised Option or unconverted or unexchanged Convertible Security (or portion thereof) which resulted (either upon its original issuance or upon a revision of its terms) in an adjustment to the Series Seed Conversion Price pursuant to the terms of Subsection 4.4.4, the Series Seed Conversion Price shall be readjusted to such Series Seed Conversion Price as would have obtained had such Option or Convertible Security (or portion thereof) never been issued.

(e) If the number of shares of Common Stock issuable upon the exercise, conversion and/or exchange of any Option or Convertible Security, or the consideration payable to the Corporation upon such exercise, conversion and/or exchange, is calculable at the time such Option or Convertible Security is issued or amended but is subject to adjustment based upon subsequent events, any adjustment to the Series Seed Conversion Price provided for in this Subsection 4.4.3 shall be effected at the time of such issuance or amendment based on such number of shares or amount of consideration without regard to any provisions for subsequent adjustments (and any subsequent adjustments shall be treated as provided in clauses (b) and (c) of this Subsection 4.4.3). If the number of shares of Common Stock issuable upon the exercise, conversion and/or exchange of any Option or Convertible Security, or the consideration payable to the Corporation upon such exercise, conversion and/or exchange, cannot be calculated at all at the time such Option or Convertible Security is issued or amended, any adjustment to the Series Seed Conversion Price that would result under the terms of this Subsection 4.4.3 at the time of such issuance or amendment shall instead be effected at the time such number of shares and/or amount of consideration is first calculable (even if subject to subsequent adjustments), assuming for purposes of calculating such adjustment to the Series Seed Conversion Price that such issuance or amendment took place at the time such calculation can first be made.

4.4.4 Adjustment of Series Seed Conversion Price Upon Issuance of Additional Shares of Common Stock. In the event the Corporation shall at any time after the Series Seed Original Issue Date issue Additional Shares of Common Stock (including Additional Shares of Common Stock deemed to be issued pursuant to Subsection 4.4.3), without consideration or for a consideration per share less than the Series Seed Conversion Price in effect immediately prior to such issuance or deemed issuance, then the Series Seed Conversion Price shall be reduced, concurrently with such issue, to a price (calculated to the nearest one-hundredth of a cent) determined in accordance with the following formula:

$$CP_2 = CP_1 * (A + B) \div (A + C).$$

For purposes of the foregoing formula, the following definitions shall apply:

- (a) "CP₂" shall mean the Series Seed Conversion Price in effect immediately after such issuance or deemed issuance of Additional Shares of Common Stock
- (b) "CP₁" shall mean the Series Seed Conversion Price in effect immediately prior to such issuance or deemed issuance of Additional Shares of Common Stock;
- (c) "A" shall mean the number of shares of Common Stock outstanding immediately prior to such issuance or deemed issuance of Additional Shares of Common Stock (treating for this purpose as outstanding all shares of Common Stock issuable upon exercise of Options outstanding immediately prior to such issuance or deemed issuance or upon conversion or exchange of Convertible Securities (including the Series Seed Preferred Stock) outstanding (assuming exercise of any outstanding Options therefor) immediately prior to such issue);
- (d) "B" shall mean the number of shares of Common Stock that would have been issued if such Additional Shares of Common Stock had been issued or deemed issued at a price per share equal to CP₁ (determined by dividing the aggregate consideration received by the Corporation in respect of such issue by CP₁); and
- (e) "C" shall mean the number of such Additional Shares of Common Stock issued in such transaction.

4.4.5 Determination of Consideration. For purposes of this Subsection 4.4, the consideration received by the Corporation for the issuance or deemed issuance of any Additional Shares of Common Stock shall be computed as follows:

- (a) Cash and Property: Such consideration shall:
 - (i) insofar as it consists of cash, be computed at the aggregate amount of cash received by the Corporation, excluding amounts paid or payable for accrued interest;
 - (ii) insofar as it consists of property other than cash, be computed at the fair market value thereof at the time of such issue, as determined in good faith by the Board of Directors of the Corporation; and
 - (iii) in the event Additional Shares of Common Stock are issued together with other shares or securities or other assets of the Corporation for consideration which covers both, be the proportion of such consideration so received, computed as provided in clauses (i) and (ii) above, as determined in good faith by the Board of Directors of the Corporation.

(b) Options and Convertible Securities. The consideration per share received by the Corporation for Additional Shares of Common Stock deemed to have been issued pursuant to Subsection 4.4.3, relating to Options and Convertible Securities, shall be determined by dividing:

- (i) The total amount, if any, received or receivable by the Corporation as consideration for the issue of such Options or Convertible Securities, plus the minimum aggregate amount of additional consideration (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent adjustment of such consideration) payable to the Corporation upon the exercise of such Options or the conversion or exchange of such Convertible Securities, or in the case of Options for Convertible Securities, the exercise of such Options for Convertible Securities and the conversion or exchange of such Convertible Securities, by
- (ii) the maximum number of shares of Common Stock (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent adjustment of such number) issuable upon the exercise of such Options or the conversion or exchange of such Convertible Securities, or in the case of Options for Convertible Securities, the exercise of such Options for Convertible Securities and the conversion or exchange of such Convertible Securities.

4.4.6 Multiple Closing Dates. In the event the Corporation shall issue on more than one date Additional Shares of Common Stock that are a part of one transaction or a series of related transactions and that would result in an adjustment to the Series Seed Conversion Price pursuant to the terms of Subsection 4.4.4, then, upon the final such issuance, the Series Seed Conversion Price shall be readjusted to give effect to all such issuances as if they occurred on the date of the first such issuance (and without giving effect to any additional adjustments as a result of any such subsequent issuances within such period).

4.5 Adjustment for Stock Splits and Combinations. If the Corporation shall at any time or from time to time after the Series Seed Original Issue Date effect a subdivision of the outstanding Common Stock, the Series Seed Conversion Price in effect immediately before that subdivision shall be proportionately decreased so that the number of shares of Common Stock issuable on conversion of each share of such series shall be increased in proportion to such increase in the aggregate number of shares of Common Stock outstanding. If the Corporation shall at any time or from time to time after the Series Seed Original Issue Date combine the outstanding shares of Common Stock, the Series Seed Conversion Price in effect immediately before the combination shall be proportionately increased so that the number of shares of Common Stock issuable on conversion of each share of such series shall be decreased in proportion to such decrease in the aggregate number of shares of Common Stock outstanding. Any adjustment under this subsection shall become effective at the close of business on the date the subdivision or combination becomes effective.

4.6 Adjustment for Certain Dividends and Distributions. In the event the Corporation at any time or from time to time after the Series Seed Original Issue Date shall make or issue, or fix a record date for the determination of holders of Common Stock entitled to receive, a dividend or other distribution payable on the Common Stock in additional shares of Common Stock, then and in each such event the Series Seed Conversion Price in effect immediately before such event shall be decreased as of the time of such issuance or, in the event such a record date shall have been fixed, as of the close of business on such record date, by multiplying the Series Seed Conversion Price then in effect by a fraction:

(1) the numerator of which shall be the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance or the close of business on such record date, and

(2) the denominator of which shall be the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance or the close of business on such record date plus the number of shares of Common Stock issuable in payment of such dividend or distribution.

Notwithstanding the foregoing (a) if such record date shall have been fixed and such dividend is not fully paid or if such distribution is not fully made on the date fixed therefor, the Series Seed Conversion Price shall be recomputed accordingly as of the close of business on such record date and thereafter the Series Seed Conversion Price shall be adjusted pursuant to this subsection as of the time of actual payment of such dividends or distributions; and (b) that no such adjustment shall be made if the holders of Series Seed Preferred Stock simultaneously receive a dividend or other distribution of shares of Common Stock in a number equal to the number of shares of Common Stock as they would have received if all outstanding shares of Series Seed Preferred Stock had been converted into Common Stock on the date of such event.

4.7 Adjustments for Other Dividends and Distributions. In the event the Corporation at any time or from time to time after the Series Seed Original Issue Date shall make or issue, or fix a record date for the determination of holders of Common Stock entitled to receive, a dividend or other distribution payable in securities of the Corporation (other than a distribution of shares of Common Stock in respect of outstanding shares of Common Stock) or in other property and the provisions of Section 1 do not apply to such dividend or distribution, then and in each such event the holders of Series Seed Preferred Stock shall receive, simultaneously with the distribution to the holders of Common Stock, a dividend or other distribution of such securities or other property in an amount equal to the amount of such securities or other property as they would have received if all outstanding shares of Series Seed Preferred Stock had been converted into Common Stock on the date of such event.

4.8 Adjustment for Merger or Reorganization, etc. Subject to the provisions of Subsection 2.3, if there shall occur any reorganization, recapitalization, reclassification, consolidation or merger involving the Corporation in which the Common Stock (but not the Series Seed Preferred Stock) is converted into or exchanged for securities, cash or other property (other than a transaction covered by Subsections 4.4, 4.6 or 4.7), then, following any such reorganization, recapitalization, reclassification, consolidation or merger, each share of Series Seed Preferred Stock shall thereafter be convertible in lieu of the Common Stock into which it was convertible prior to such event into the kind and amount of securities, cash or other property which a holder of the number of shares of Common Stock of the Corporation issuable upon conversion of one share of Series Seed Preferred Stock immediately prior to such reorganization, recapitalization, reclassification, consolidation or merger would have been entitled to receive pursuant to such transaction; and, in such case, appropriate adjustment (as determined in good faith by the Board of Directors of the Corporation) shall be made in the application of the provisions in this Section 4 with respect to the rights and interests thereafter of the holders of the Series Seed Preferred Stock, to the end that the provisions set forth in this Section 4 (including provisions with respect to changes in and other adjustments of the Series Seed Conversion Price) shall thereafter be applicable, as nearly as reasonably may be, in relation to any securities or other property thereafter deliverable upon the conversion of the Series Seed Preferred Stock.

4.9 Certificate as to Adjustments. Upon the occurrence of each adjustment or readjustment of the Series Seed Conversion Price pursuant to this Section 4, the Corporation at its expense shall, as promptly as reasonably practicable but in any event not later than ten (10) days thereafter, compute such adjustment or readjustment in accordance with the terms hereof and furnish to each holder of Series Seed Preferred Stock a certificate setting forth such adjustment or readjustment (including the kind and amount of securities, cash or other property into which the Series Seed Preferred Stock is convertible) and showing in detail the facts upon which such adjustment or readjustment is based. The Corporation shall, as promptly as reasonably practicable after the written request at any time of any holder of Series Seed Preferred Stock (but in any event not later than ten (10) days thereafter), furnish or cause to be furnished to such holder a certificate setting forth (i) the Series Seed Conversion Price then in effect, and (ii) the number of shares of Common Stock and the amount, if any, of other securities, cash or property which then would be received upon the conversion of Series Seed Preferred Stock.

4.10 Notice of Record Date. In the event:

(a) the Corporation shall take a record of the holders of its Common Stock (or other capital stock or securities at the time issuable upon conversion of the Series Seed Preferred Stock) for the purpose of entitling or enabling them to receive any dividend or other distribution, or to receive any right to subscribe for or purchase any shares of capital stock of any class or any other securities, or to receive any other security; or

(b) of any capital reorganization of the Corporation, any reclassification of the Common Stock of the Corporation, or any Deemed Liquidation Event; or

(c) of the voluntary or involuntary dissolution, liquidation or winding-up of the Corporation,

then, and in each such case, the Corporation will send or cause to be sent to the holders of the Series Seed Preferred Stock a notice specifying, as the case may be, (i) the record date for such dividend, distribution or right, and the amount and character of such dividend, distribution or right, or (ii) the effective date on which such reorganization, reclassification, consolidation, merger, transfer, dissolution, liquidation or winding-up is proposed to take place, and the time, if any is to be fixed, as of which the holders of record of Common Stock (or such other capital stock or securities at the time issuable upon the conversion of the Series Seed Preferred Stock) shall be entitled to exchange their shares of Common Stock (or such other capital stock or securities) for securities or other property deliverable upon such reorganization, reclassification, consolidation, merger, transfer, dissolution, liquidation or winding-up, and the amount per share and character of such exchange applicable to the Series Seed Preferred Stock and the Common Stock. Such notice shall be sent at least ten (10) days prior to the record date or effective date for the event specified in such notice.

5. Mandatory Conversion.

5.1 Trigger Events. Upon either (a) the closing of the sale of shares of Common Stock to the public at a price of at least \$18.27 per share (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the Common Stock), in a firm-commitment underwritten public offering pursuant to an effective registration statement under the Securities Act of 1933, as amended, resulting in at least \$50,000,000 of net proceeds to the Corporation and in connection with such offering the Common Stock is listed for trading on the Nasdaq Stock Market's National Market, the New York Stock Exchange or another exchange or marketplace approved by the Board of Directors, including the approval of all Series Seed Directors or (b) the date and time, or the occurrence of an event, specified by vote or written consent of the Requisite Holders (the time of such closing or the date and time specified or the time of the event specified in such vote or written consent is referred to herein as the "**Mandatory Conversion Time**"), then (i) all outstanding shares of Series Seed Preferred Stock shall automatically be converted into shares of Common Stock, at the then effective conversion rate as calculated pursuant to Subsection 4.1.1. and (ii) such shares may not be reissued by the Corporation.

5.2 Procedural Requirements. All holders of record of shares of Series Seed Preferred Stock shall be sent written notice of the Mandatory Conversion Time and the place designated for mandatory conversion of all such shares of Series Seed Preferred Stock pursuant to this Section 5. Such notice need not be sent in advance of the occurrence of the Mandatory Conversion Time. Upon receipt of such notice, each holder of shares of Series Seed Preferred Stock in certificated form shall surrender his, her or its certificate or certificates for all such shares (or, if such holder alleges that such certificate has been lost, stolen or destroyed, a lost certificate affidavit and agreement reasonably acceptable to the Corporation to indemnify the Corporation against any claim that may be made against the Corporation on account of the alleged loss, theft or destruction of such certificate) to the Corporation at the place designated in such notice. If so required by the Corporation, any certificates surrendered for conversion shall be endorsed or accompanied by written instrument or instruments of transfer, in form satisfactory to the Corporation, duly executed by the registered holder or by his, her or its attorney duly authorized in writing. All rights with respect to the Series Seed Preferred Stock converted pursuant to Subsection 5.1. including the rights, if any, to receive notices and vote (other than as a holder of Common Stock), will terminate at the Mandatory Conversion Time (notwithstanding the failure of the holder or holders thereof to surrender any certificates at or prior to such time), except only the rights of the holders thereof, upon surrender of any certificate or certificates of such holders (or lost certificate affidavit and agreement) therefor, to receive the items provided for in the next sentence of this Subsection 5.2. As soon as practicable after the Mandatory Conversion Time and, if applicable, the surrender of any certificate or certificates (or lost certificate affidavit and agreement) for Series Seed Preferred Stock, the Corporation shall (a) issue and deliver to such holder, or to his, her or its nominees, a notice of issuance of uncertificated shares and may, upon written request, issue and deliver a certificate for the number of full shares of Common Stock issuable upon such conversion in accordance with the provisions hereof, and (b) pay cash as provided in Subsection 4.2 in lieu of any fraction of a share of Common Stock otherwise issuable upon such conversion and the payment of any declared but unpaid dividends on the shares of Series Seed Preferred Stock converted. Such converted Series Seed Preferred Stock shall be retired and cancelled and may not be reissued as shares of such series, and the Corporation may thereafter take such appropriate action (without the need for stockholder action) as may be necessary to reduce the authorized number of shares of Series Seed Preferred Stock accordingly.

6. Reserved.

7. Redeemed or Otherwise Acquired Shares. Any shares of Series Seed Preferred Stock that are redeemed or otherwise acquired by the Corporation or any of its subsidiaries shall be automatically and immediately cancelled and retired and shall not be reissued, sold or transferred. Neither the Corporation nor any of its subsidiaries may exercise any voting or other rights granted to the holders of Series Seed Preferred Stock following redemption.

8. Waiver. Any of the rights, powers, preferences and other terms of the Series Seed Preferred Stock set forth herein may be waived on behalf of all holders of Series Seed Preferred Stock by the affirmative written consent or vote of the holders of at least a majority of the shares of Series Seed Preferred Stock then outstanding.

9. Notices. Any notice required or permitted by the provisions of this Article Fourth to be given to a holder of shares of Series Seed Preferred Stock shall be mailed, postage prepaid, to the post office address last shown on the records of the Corporation, or given by electronic communication in compliance with the provisions of the General Corporation Law, and shall be deemed sent upon such mailing or electronic transmission.

FIFTH: Subject to any additional vote required by this Amended and Restated Certificate of Incorporation or Bylaws, in furtherance and not in limitation of the powers conferred by statute, the Board of Directors is expressly authorized to make, repeal, alter, amend and rescind any or all of the Bylaws of the Corporation.

SIXTH: Subject to any additional vote required by this Amended and Restated Certificate of Incorporation, the number of directors of the Corporation shall be determined in the manner set forth in the Bylaws of the Corporation. Each director shall be entitled to one vote on each matter presented to the Board of Directors; provided, however, that, so long as the holders of Series Seed Preferred Stock are entitled to elect a Series Seed Director, the affirmative vote of all of the Series Seed Directors shall be required for the authorization by the Board of Directors of any of the matters set forth in Section 5.5 of the Investors' Rights Agreement, dated on or about the date hereof, by and among the Corporation and the other parties thereto, as such agreement may be amended from time to time.

SEVENTH: Elections of directors need not be by written ballot unless the Bylaws of the Corporation shall so provide.

EIGHTH: Meetings of stockholders may be held within or without the State of Delaware, as the Bylaws of the Corporation may provide. The books of the Corporation may be kept outside the State of Delaware at such place or places as may be designated from time to time by the Board of Directors or in the Bylaws of the Corporation.

NINTH: To the fullest extent permitted by law, a director of the Corporation shall not be personally liable to the Corporation or its stockholders for monetary damages for breach of fiduciary duty as a director. If the General Corporation Law or any other law of the State of Delaware is amended after approval by the stockholders of this Article Ninth to authorize corporate action further eliminating or limiting the personal liability of directors, then the liability of a director of the Corporation shall be eliminated or limited to the fullest extent permitted by the General Corporation Law as so amended.

Any repeal or modification of the foregoing provisions of this Article Ninth by the stockholders of the Corporation shall not adversely affect any right or protection of a director of the Corporation existing at the time of, or increase the liability of any director of the Corporation with respect to any acts or omissions of such director occurring prior to, such repeal or modification.

TENTH: To the fullest extent permitted by applicable law, the Corporation is authorized to provide indemnification of (and advancement of expenses to) directors, officers and agents of the Corporation (and any other persons to which General Corporation Law permits the Corporation to provide indemnification) through Bylaw provisions, agreements with such agents or other persons, vote of stockholders or disinterested directors or otherwise, in excess of the indemnification and advancement otherwise permitted by Section 145 of the General Corporation Law.

Any amendment, repeal or modification of the foregoing provisions of this Article Tenth shall not (a) adversely affect any right or protection of any director, officer or other agent of the Corporation existing at the time of such amendment, repeal or modification or (b) increase the liability of any director of the Corporation with respect to any acts or omissions of such director, officer or agent occurring prior to, such amendment, repeal or modification.

ELEVENTH: The Corporation renounces, to the fullest extent permitted by law, any interest or expectancy of the Corporation in, or in being offered an opportunity to participate in, any Excluded Opportunity. An “Excluded Opportunity” is any matter, transaction or interest that is presented to, or acquired, created or developed by, or which otherwise comes into the possession of (i) any director of the Corporation who is not an employee of the Corporation or any of its subsidiaries, or (ii) any holder of Series Seed Preferred Stock or any partner, member, director, stockholder, employee, affiliate or agent of any such holder, other than someone who is an employee of the Corporation or any of its subsidiaries (collectively, the persons referred to in clauses (i) and (ii) are “Covered Persons”), unless such matter, transaction or interest is presented to, or acquired, created or developed by, or otherwise comes into the possession of, a Covered Person expressly and solely in such Covered Person’s capacity as a director of the Corporation while such Covered Person is performing services in such capacity. Any repeal or modification of this Article Eleventh will only be prospective and will not affect the rights under this Article Eleventh in effect at the time of the occurrence of any actions or omissions to act giving rise to liability. Notwithstanding anything to the contrary contained elsewhere in this Amended and Restated Certificate of Incorporation, the affirmative vote of the holders of at least a majority of the shares of Series Seed Preferred Stock the outstanding, will be required to amend or repeal, or to adopt any provisions inconsistent with this Article Eleventh.

TWELFTH: Unless the Corporation consents in writing to the selection of an alternative forum, the Court of Chancery in the State of Delaware shall be the sole and exclusive forum for any stockholder (including a beneficial owner) to bring (i) any derivative action or proceeding brought on behalf of the Corporation, (ii) any action asserting a claim of breach of fiduciary duty owed by any director, officer or other employee of the Corporation to the Corporation or the Corporation’s stockholders, (iii) any action asserting a claim against the Corporation, its directors, officers or employees arising pursuant to any provision of the Delaware General Corporation Law or the Corporation’s certificate of incorporation or bylaws or (iv) any action asserting a claim against the Corporation, its directors, officers or employees governed by the internal affairs doctrine, except for, as to each of (i) through (iv) above, any claim as to which the Court of Chancery determines that there is an indispensable party not subject to the jurisdiction of the Court of Chancery (and the indispensable party does not consent to the personal jurisdiction of the Court of Chancery within ten days following such determination), which is vested in the exclusive jurisdiction of a court or forum other than the Court of Chancery, or for which the Court of Chancery does not have subject matter jurisdiction. If any provision or provisions of this Article Twelfth shall be held to be invalid, illegal or unenforceable as applied to any person or entity or circumstance for any reason whatsoever, then, to the fullest extent permitted by law, the validity, legality and enforceability of such provisions in any other circumstance and of the remaining provisions of this Article Twelfth (including, without limitation, each portion of any sentence of this Article Twelfth containing any such provision held to be invalid, illegal or unenforceable that is not itself held to be invalid, illegal or unenforceable) and the application of such provision to other persons or entities and circumstances shall not in any way be affected or impaired thereby.

* * *

3. That the foregoing amendment and restatement was approved by the holders of the requisite number of shares of this corporation in accordance with Section 228 of the General Corporation Law.

4. That this Amended and Restated Certificate of Incorporation, which restates and integrates and further amends the provisions of this Corporation's Certificate of Incorporation, has been duly adopted in accordance with Sections 242 and 245 of the General Corporation Law.

IN WITNESS WHEREOF, this Amended and Restated Certificate of Incorporation has been executed by a duly authorized officer of this corporation on this 1st day of July 2019.

By: _____
Joe Hernandez, CEO

**AMENDED AND RESTATED
CERTIFICATE OF INCORPORATION
OF
BLUE WATER VACCINES, INC.**

Blue Water Vaccines, Inc. (the "Corporation"), a corporation organized and existing under and by virtue of the provisions of the General Corporation Law of the State of Delaware (the "General Corporation Law"), hereby certifies that:

FIRST. The name under which the Corporation was originally incorporated is Blue Water Vaccines, Inc.

SECOND. The Certificate of Incorporation of the Corporation was originally filed with the Secretary of State of Delaware on October 26, 2018. A first Amended and Restated Certificate of Incorporation was filed on July 1, 2019. The Certificate of Incorporation of the Corporation as heretofore amended is hereby amended and restated pursuant to Sections 228, 242 and 245 of the General Corporation Law. All amendments to the Certificate of Incorporation reflected herein (this "Restated Certificate") have been duly adopted by the Board of Directors and stockholders of the Corporation in accordance with the provisions of such Sections. As required by Section 228 of the General Corporation Law, the Corporation has given written notice of the amendments reflected herein to all stockholders who did not consent in writing to these amendments.

THIRD. The Certificate of Incorporation of the Corporation shall be amended and restated to read in full as follows:

ARTICLE I.

The name of this corporation is Blue Water Vaccines, Inc.

ARTICLE II.

The address of the Corporation's registered office in the State of Delaware is VCorp Services, LLC, 1013 Centre Road, Suite 403-B, in the City of Wilmington, County of New Castle, Delaware 19805. The name of its registered agent at such address is The VCorp Services, LLC.

ARTICLE III.

The purpose of the Corporation is to engage in any lawful act or activity for which a corporation may be organized under the General Corporation Law of the State of Delaware.

ARTICLE IV.

A. Classes of Stock and Authorized Shares. The Corporation is authorized to issue two classes of stock to be designated, respectively, Common Stock, par value \$0.0001 per share (the “Common Stock”), and Preferred Stock, par value \$0.0001 per share (the “Preferred Stock”). The total number of shares which the Corporation is authorized to issue is () shares, of which () shares shall be Common Stock, and () shares shall be Preferred Stock.

B. Rights, Powers, Preferences and Restrictions of Preferred Stock. The Board of Directors of the corporation is hereby expressly authorized, by resolution or resolutions thereof and the filing of a certificate pursuant to the applicable law of the State of Delaware (hereinafter referred to as a “Preferred Stock Designation”), to provide, out of the unissued shares of Preferred Stock, for one or more series of Preferred Stock and, with respect to each such series, to fix the number of shares constituting such series and the designation of such series, the voting powers, if any, of the shares of such series, and the preferences and relative, participating, optional or other special rights, if any, and any qualifications, limitations or restrictions thereof, of the shares of such series. The powers, preferences and relative, participating, optional and other special rights of each series of Preferred Stock, and the qualifications, limitations or restrictions thereof, if any, may differ from those of any and all other series at any time outstanding. Subject to Section A of this Article IV and any Preferred Stock Designation, the Board is also expressly authorized to increase or decrease the number of shares of any series of Preferred Stock subsequent to the issuance of shares of that series, but not below the number of shares of such series then outstanding. Unless otherwise expressly provided in the certificate of designations in respect of any series of Preferred Stock, in case the number of shares of such series shall be decreased in accordance with the foregoing sentence, the shares constituting such decrease shall resume the status that they had prior to the adoption of the resolution originally fixing the number of shares of such series.

C. Rights of Common Stock. The relative powers, rights, qualifications, limitations and restrictions granted to or imposed on the shares of the Common Stock are as follows:

1. **General.** The voting powers and dividend and liquidation rights and preferences, if any, of the holders of the Common Stock are subject to and qualified by the rights of the holders of the Preferred Stock of any series as may be designated by the Board of Directors upon any issuance of the Preferred Stock of any series.

2. **Voting Rights.** Except as may be otherwise provided by this Restated Certificate, a Preferred Stock Designation or by applicable law, the holders of the Common Stock shall be entitled to one vote for each share upon each matter presented to the stockholders of the Corporation; *provided, however*, that, except as otherwise required by law, holders of Common Stock shall not be entitled to vote on any amendment to this Restated Certificate or a Preferred Stock Designation that relates solely to the terms of one or more outstanding series of Preferred Stock if the holders of such affected series are entitled, either separately or together as a class with the holders of one or more other such series, to vote thereon pursuant to this Restated Certificate, a Preferred Stock Designation or the General Corporation Law. There shall be no cumulative voting. The number of authorized shares of Common Stock may be increased or decreased (but not below the number of shares thereof then outstanding) by the affirmative vote of the holders of a majority of the voting power of the capital stock of the Corporation entitled to vote thereon, voting as a single class, irrespective of the provisions of Section 242(b)(2) of the General Corporation Law.

3. **Dividends.** Dividends may be declared and paid on the Common Stock from funds lawfully available therefor as and when determined by the Board of Directors and subject to any preferential dividend or other rights of any then outstanding Preferred Stock and to the requirements of applicable law.

4. **Liquidation.** Upon the dissolution or liquidation of the Corporation, whether voluntary or involuntary, holders of Common Stock will be entitled to receive all assets of the Corporation legally available for distribution to its stockholders, subject to any preferential or other rights of any then outstanding Preferred Stock.

ARTICLE V.

In furtherance and not in limitation of the powers conferred upon it by the General Corporation Law, and subject to the terms of any series of Preferred Stock, the Board of Directors is expressly authorized and empowered to adopt, amend or repeal the Bylaws of the Corporation. The stockholders may not adopt, amend, alter or repeal the Bylaws of the Corporation, or adopt any provision inconsistent therewith, unless such action is approved, in addition to any other vote required by this Restated Certificate, by the affirmative vote of the holders of at least 66 2/3% in voting power of the outstanding shares of capital stock of the Corporation entitled to vote thereon. Notwithstanding any other provisions of law, this Restated Certificate or the Bylaws of the Corporation, and notwithstanding the fact that a lesser percentage may be specified by law, the affirmative vote of the holders of at least 66 2/3% in voting power of the outstanding shares of capital stock of the Corporation entitled to vote thereon shall be required to amend or repeal, or to adopt any provision inconsistent with, this Article V.

ARTICLE VI.

A. Authority of Board. The business and affairs of the Corporation shall be managed by or under the direction of the Board of Directors. In addition to the powers and authority expressly conferred by statute or by this Restated Certificate or the Bylaws of the Corporation, the Board of Directors is hereby empowered to exercise all such powers and do all such acts and things as may be exercised or done by the Corporation.

B. Board Size. Subject to the rights of the holders of any series of Preferred Stock to elect additional directors pursuant to any Preferred Stock Designation, the total number of authorized directors constituting the Board of Directors (the "Whole Board") shall be fixed from time to time exclusively by the Board of Directors pursuant to a resolution adopted by a majority of the Whole Board.

C. Classified Board Structure. From and after the Effective Time (defined below), the directors, other than any who may be elected by the holders of any series of Preferred Stock pursuant to any Preferred Stock Designation, shall be divided into three (3) classes hereby designated Class I, Class II and Class III. The Board of Directors may assign members of the Board of Directors already in office to such classes at the time such classification becomes effective. The term of office of the initial Class I directors shall expire at the first annual meeting of the stockholders to be held following the effectiveness of this Restated Certificate (the "Effective Time"), the term of office of the initial Class II directors shall expire at the second annual meeting of the stockholders following the Effective Time, and the term of office of the initial Class III directors shall expire at the third annual meeting of the stockholders following the Effective Time. At each annual meeting of stockholders, commencing with the first annual meeting of stockholders following the Effective Time, each of the successors elected to replace the directors of a Class whose term shall have expired at such annual meeting shall be elected to hold office until the third annual meeting next succeeding his or her election and until his or her respective successor shall have been duly elected and qualified or until his or her earlier death, resignation, or removal.

D. Removal; Vacancies. Any director may be removed from office by the stockholders of the Corporation only for cause by the affirmative vote of the holders of at least 66 2/3% of the outstanding voting power of the stockholders entitled to vote thereon. Vacancies occurring on the Board of Directors for any reason and newly created directorships resulting from an increase in the authorized number of directors may be filled exclusively pursuant to a resolution adopted by the Board of Directors and not by the stockholders. A person elected to fill a vacancy or newly created directorship shall hold office until the next election of the class for which such director shall have been chosen and until his or her successor shall be duly elected and qualified.

ARTICLE VII.

A. No Cumulative Voting. No stockholder will be permitted to cumulate votes in any election of directors. The election of directors need not be by written ballot unless the Bylaws of the Corporation shall so provide.

B. Special Meetings. Special meetings of the stockholders may be called only by (i) the Board of Directors pursuant to a resolution adopted by a majority of the Whole Board; (ii) the chairman of the Board of Directors; or (iii) the chief executive officer or president of the Corporation.

C. No Stockholder Action by Written Consent. Subject to the rights of the holders of any series of Preferred Stock, any action required or permitted to be taken by the stockholders of the Corporation must be effected at a duly called annual or special meeting of stockholders of the Corporation and may not be effected by any consent in writing by such stockholders.

ARTICLE VIII.

A Forum Selection. Subject to the last sentence in this Article VIII(A), and unless the Corporation consents in writing to the selection of an alternative forum, to the fullest extent permitted by the applicable law, the Court of Chancery of the State of Delaware shall be the sole and exclusive forum for any stockholder (including a beneficial owner) to bring (i) any derivative action or proceeding brought on behalf of the Corporation, (ii) any action asserting a claim of breach of a fiduciary duty owed by any director, officer or other employee of the Corporation to the Corporation or the Corporation's stockholders, (iii) any action asserting a claim against the Corporation, its directors, officers or employees arising pursuant to any provision of the DGCL or this Restated Certificate or the By-Laws, or (iv) any action asserting a claim against the Corporation, its directors, officers or employees governed by the internal affairs doctrine and, if brought outside of Delaware, the stockholder bringing the suit will be deemed to have consented to service of process on such stockholder's counsel except any action (A) as to which the Court of Chancery in the State of Delaware determines that there is an indispensable party not subject to the jurisdiction of the Court of Chancery (and the indispensable party does not consent to the personal jurisdiction of the Court of Chancery within ten days following such determination), (B) which is vested in the exclusive jurisdiction of a court or forum other than the Court of Chancery, or (C) for which the Court of Chancery does not have subject matter jurisdiction. Notwithstanding the foregoing, (i) the provisions of this Article VIII(A) will not apply to suits brought to enforce any liability or duty created by the Exchange Act or any other claim for which the federal courts have exclusive jurisdiction and (ii) unless the Corporation consents in writing to the selection of an alternative forum, the federal district courts of the United States of America shall, to the fullest extent permitted by law, be the exclusive forum for the resolution of any complaint asserting a cause of action arising under the Securities Act of 1933, as amended, or the rules and regulations promulgated thereunder.

B. Consent to Jurisdiction. If any action the subject matter of which is within the scope of Article VIII(A) immediately above is filed in a court other than a court located within the State of Delaware (a "**Foreign Action**") in the name of any stockholder, such stockholder shall be deemed to have consented to (i) the personal jurisdiction of the state and federal courts located within the State of Delaware in connection with any action brought in any such court to enforce Article VIII(A) immediately above (an "**FSC Enforcement Action**") and (ii) having service of process made upon such stockholder in any such FSC Enforcement Action by service upon such stockholder's counsel in the Foreign Action as agent for such stockholder.

C. Severability. If any provision or provisions of this *Article VIII* shall be held to be invalid, illegal or unenforceable as applied to any person or entity or circumstance for any reason whatsoever, then, to the fullest extent permitted by law, the validity, legality and enforceability of such provisions in any other circumstance and of the remaining provisions of this *Article VIII* (including, without limitation, each portion of any sentence of this *Article VIII* containing any such provision held to be invalid, illegal or unenforceable that is not itself held to be invalid, illegal or unenforceable) and the application of such provision to other persons or entities and circumstances shall not in any way be affected or impaired thereby.

D. Deemed Notice. Any person or entity purchasing or otherwise acquiring or holding any interest in any security of the Corporation shall be deemed to have notice of and consented to this Article VIII.

ARTICLE IX.

A. The Corporation shall indemnify (and advance expenses to) its officers and directors to the full extent permitted by the General Corporation Law, as amended from time to time.

B. To the fullest extent permitted by law, no director of the Corporation shall be personally liable to the Corporation or its stockholders for monetary damages for any breach of fiduciary duty as a director, notwithstanding any provision of law imposing such liability.

C. No amendment to or repeal of this provision, nor the adoption of any provision of the Restated Certificate inconsistent with this Article IX, shall apply to or have any effect on (1) the liability or alleged liability of any director of the Corporation or the (2) indemnification and advancement rights of any director or officer, in each case, for or with respect to any acts or omissions of such director or officer occurring prior to such amendment or repeal. If the General Corporation Law is amended to permit further elimination or limitation of the personal liability of directors or to permit greater indemnification or advancement rights of directors and officers, then the directors and officers of the Corporation shall be protected from liability (whether through exculpation, indemnification or advancement rights) the fullest extent permitted by the General Corporation Law as so amended.

ARTICLE X.

The Corporation reserves the right to amend, alter, change or repeal any provision contained in this Restated Certificate, in the manner now or hereafter prescribed by statute, and all rights conferred upon stockholders herein are granted subject to this reservation. Notwithstanding any other provision of this Restated Certificate or applicable law and in addition to any affirmative vote of the holders of any particular class of stock of the Corporation required by applicable law or by a Preferred Stock Designation or this Restated Certificate, the affirmative vote of the holders of at least 66 2/3% of the voting power of the shares of the then outstanding voting stock of the Corporation entitled to vote thereon, voting together as a single class, shall be required to amend, repeal, or adopt any provisions of this Restated Certificate.

* * *

IN WITNESS WHEREOF, this Amended and Restated Certificate of Incorporation has been signed on behalf of the Corporation by its duly authorized officer effective this __ day of _____, 2021.

BLUE WATER VACCINES, INC.

Chief Executive Officer

BYLAWS
OF
BLUE WATER VACCINES INC.
(A DELAWARE CORPORATION)

ARTICLE I

OFFICES

Section 1. Registered Office. The registered office of the corporation in the State of Delaware shall be 1013 Centre Road, Suite 403-B, City of Wilmington, County of New Castle, Delaware 19805 or in such other location as the Board of Directors may from time to time determine or the business of the corporation may require..

Section 2. Other Offices. The corporation shall also have and maintain an office or principal place of business at such place as may be fixed by the Board of Directors, and may also have offices at such other places, both within and without the State of Delaware, as the Board of Directors may from time to time determine or the business of the corporation may require.

ARTICLE II

CORPORATE SEAL

Section 3. Corporate Seal. The Board of Directors may adopt a corporate seal. Said seal may be used by causing it or a facsimile thereof to be impressed or affixed or reproduced or otherwise.

ARTICLE III

STOCKHOLDERS' MEETINGS

Section 4. Place of Meetings. Meetings of the stockholders of the corporation may be held at such place, either within or without the State of Delaware, as may be determined from time to time by the Board of Directors. The Board of Directors may, in its sole discretion, determine that the meeting shall not be held at any place, but may instead be held solely by means of remote communication as provided under the Delaware General Corporation Law ("**DGCL**").

Section 5. Annual Meeting.

(a) The annual meeting of the stockholders of the corporation, for the purpose of election of directors and for such other business as may lawfully come before it, shall be held on such date and at such time as may be designated from time to time by the Board of Directors. Nominations of persons for election to the Board of Directors of the corporation and the proposal of business to be considered by the stockholders may be made at an annual meeting of stockholders: (i) pursuant to the corporation's notice of meeting of stockholders; (ii) by or at the direction of the Board of Directors; or (iii) by any stockholder of the corporation who was a stockholder of record at the time of giving of notice provided for in the following paragraph, who is entitled to vote at the meeting and who complied with the notice procedures set forth in this Section.

(b) At an annual meeting of the stockholders, only such business shall be conducted as shall have been properly brought before the meeting. For nominations or other business to be properly brought before an annual meeting by a stockholder pursuant to clause (iii) of paragraph (a) of this Section, (i) the stockholder must have given timely notice thereof in writing to the Secretary of the corporation, (ii) such other business must be a proper matter for stockholder action under the DGCL and applicable law, (iii) if the stockholder, or the beneficial owner on whose behalf any such proposal or nomination is made, has provided the corporation with a Solicitation Notice (as defined in this paragraph), such stockholder or beneficial owner must, in the case of a proposal, have delivered a proxy statement and form of proxy to holders of at least the percentage of the corporation's voting shares required under applicable law to carry any such proposal, or, in the case of a nomination or nominations, have delivered a proxy statement and form of proxy to holders of a percentage of the corporation's voting shares reasonably believed by such stockholder or beneficial owner to be sufficient to elect the nominee or nominees proposed to be nominated by such stockholder, and must, in either case, have included in such materials the Solicitation Notice, and (iv) if no Solicitation Notice relating thereto has been timely provided pursuant to this Section, the stockholder or beneficial owner proposing such business or nomination must not have solicited a number of proxies sufficient to have required the delivery of such a Solicitation Notice under this Section. To be timely, a stockholder's notice shall be delivered to the Secretary at the principal executive offices of the corporation not later than the close of business on the ninetieth (90th) day nor earlier than the close of business on the one hundred twentieth (120th) day prior to the first anniversary of the preceding year's annual meeting; *provided, however*, that in the event that the date of the annual meeting is advanced more than thirty (30) days prior to or delayed by more than thirty (30) days after the anniversary of the preceding year's annual meeting, notice by the stockholder to be timely must be so delivered not earlier than the close of business on the one hundred twentieth (120th) day prior to such annual meeting and not later than the close of business on the later of the ninetieth (90th) day prior to such annual meeting or the tenth (10th) day following the day on which public announcement of the date of such meeting is first made. In no event shall the public announcement of an adjournment of an annual meeting commence a new time period for the giving of a stockholder's notice as described above. Such stockholder's notice shall set forth: (A) as to each person whom the stockholder proposed to nominate for election or reelection as a director all information relating to such person that is required to be disclosed in solicitations of proxies for election of directors in an election contest, or is otherwise required, in each case pursuant to Regulation 14A under the Securities Exchange Act of 1934, as amended (the "**1934 Act**"), and Rule 14a-4(d) thereunder (including such person's written consent to being named in the proxy statement as a nominee and to serving as a director if elected); (B) as to any other business that the stockholder proposes to bring before the meeting, a brief description of the business desired to be brought before the meeting, the reasons for conducting such business at the meeting and any material interest in such business of such stockholder and the beneficial owner, if any, on whose behalf the proposal is made; and (C) as to the stockholder giving the notice and the beneficial owner, if any, on whose behalf the nomination or proposal is made (i) the name and address of such stockholder, as they appear on the corporation's books, and of such beneficial owner, (ii) the class and number of shares of the corporation that are owned beneficially and of record by such stockholder and such beneficial owner, and (iii) whether either such stockholder or beneficial owner intends to deliver a proxy statement and form of proxy to holders of, in the case of the proposal, at least the percentage of the corporation's voting shares required under applicable law to carry the proposal or, in the case of a nomination or nominations, a sufficient number of holders of the corporation's voting shares to elect such nominee or nominees (an affirmative statement of such intent, a "**Solicitation Notice**").

(c) Notwithstanding anything in the second sentence of paragraph (b) of this Section to the contrary, in the event that the number of directors to be elected to the Board of Directors of the corporation is increased and there is no public announcement naming all of the nominees for director or specifying the size of the increased Board of Directors made by the corporation at least one hundred (100) days prior to the first anniversary of the preceding year's annual meeting, a stockholder's notice required by this Section shall also be considered timely, but only with respect to nominees for any new positions created by such increase, if it shall be delivered to the Secretary at the principal executive offices of the corporation not later than the close of business on the tenth (10th) day following the day on which such public announcement is first made by the corporation.

(d) Only such persons who are nominated in accordance with the procedures set forth in this Section (or elected or appointed pursuant to Article IV of these Bylaws) shall be eligible to serve as directors and only such business shall be conducted at a meeting of stockholders as shall have been brought before the meeting in accordance with the procedures set forth in this Section. Except as otherwise provided by law, the Chairman of the meeting shall have the power and duty to determine whether a nomination or any business proposed to be brought before the meeting was made, or proposed, as the case may be, in accordance with the procedures set forth in these Bylaws and, if any proposed nomination or business is not in compliance with these Bylaws, to declare that such defective proposal or nomination shall not be presented for stockholder action at the meeting and shall be disregarded.

(e) Notwithstanding the foregoing provisions of this Section, in order to include information with respect to a stockholder proposal in the proxy statement and form of proxy for a stockholders' meeting, stockholders must provide notice as required by the regulations promulgated under the 1934 Act. Nothing in these Bylaws shall be deemed to affect any rights of stockholders to request inclusion of proposals in the corporation proxy statement pursuant to Rule 14a-8 under the 1934 Act.

(f) For purposes of this Section, "public announcement" shall mean disclosure in a press release reported by the Dow Jones News Service, Associated Press or comparable national news service or in a document publicly filed by the corporation with the Securities and Exchange Commission (the "SEC") pursuant to Section 13, 14 or 15(d) of the 1934 Act.

Section 6. Special Meetings.

(a) Special meetings of the stockholders of the corporation may be called, for any purpose or purposes, by (i) the Chairman of the Board of Directors, (ii) the Chief Executive Officer, (iii) the Board of Directors pursuant to a resolution adopted by directors representing a quorum of the Board of Directors or (iv) by the holders of shares entitled to cast not less than 50% of the votes at the meeting, and shall be held at such place, on such date, and at such time as the Board of Directors shall fix.

(b) If a special meeting is properly called by any person or persons other than the Board of Directors, the request shall be in writing, specifying the general nature of the business proposed to be transacted, and shall be delivered personally or sent by certified or registered mail, return receipt requested, or by telegraphic or other facsimile transmission to the Chairman of the Board of Directors, the Chief Executive Officer, or the Secretary of the corporation. No business may be transacted at such special meeting otherwise than specified in such notice. The Board of Directors shall determine the time and place of such special meeting, which shall be held not less than thirty-five (35) nor more than one hundred twenty (120) days after the date of the receipt of the request. Upon determination of the time and place of the meeting, the officer receiving the request shall cause notice to be given to the stockholders entitled to vote, in accordance with the provisions of Section 7 of these Bylaws. Nothing contained in this paragraph (b) shall be construed as limiting, fixing, or affecting the time when a meeting of stockholders called by action of the Board of Directors may be held.

Section 7. Notice of Meetings. Except as otherwise provided by law, notice, given in writing or by electronic transmission, of each meeting of stockholders shall be given not less than ten (10) nor more than sixty (60) days before the date of the meeting to each stockholder entitled to vote at such meeting, such notice to specify the place, if any, date and hour, in the case of special meetings, the purpose or purposes of the meeting, and the means of remote communications, if any, by which stockholders and proxyholders may be deemed to be present in person and vote at any such meeting. If mailed, notice is given when deposited in the United States mail, postage prepaid, directed to the stockholder at such stockholder's address as it appears on the records of the corporation. Notice of the time, place, if any, and purpose of any meeting of stockholders may be waived in writing, signed by the person entitled to notice thereof or by electronic transmission by such person, either before or after such meeting, and will be waived by any stockholder by his or her attendance thereat in person, by remote communication, if applicable, or by proxy, except when the stockholder attends a meeting for the express purpose of objecting, at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened. Any stockholder so waiving notice of such meeting shall be bound by the proceedings of any such meeting in all respects as if due notice thereof had been given.

Section 8. Quorum. At all meetings of stockholders, except where otherwise provided by statute or by the Certificate of Incorporation, or by these Bylaws, the presence, in person, by remote communication, if applicable, or by proxy duly authorized, of the holders of a majority of the outstanding shares of stock entitled to vote shall constitute a quorum for the transaction of business. In the absence of a quorum, any meeting of stockholders may be adjourned, from time to time, either by the chairman of the meeting or by vote of the holders of a majority of the shares represented thereat, but no other business shall be transacted at such meeting. The stockholders present at a duly called or convened meeting, at which a quorum is present, may continue to transact business until adjournment, notwithstanding the withdrawal of enough stockholders to leave less than a quorum. Except as otherwise provided by statute, or by the Certificate of Incorporation or these Bylaws, in all matters other than the election of directors, the affirmative vote of a majority of shares present in person, by remote communication, if applicable, or represented by proxy duly authorized at the meeting and entitled to vote generally on the subject matter shall be the act of the stockholders. Except as otherwise provided by statute, the Certificate of Incorporation or these Bylaws, directors shall be elected by a plurality of the votes of the shares present in person, by remote communication, if applicable, or represented by proxy duly authorized at the meeting and entitled to vote generally on the election of directors. Where a separate vote by a class or classes or series is required, except where otherwise provided by the statute or by the Certificate of Incorporation or these Bylaws, a majority of the outstanding shares of such class or classes or series, present in person, by remote communication, if applicable, or represented by proxy duly authorized, shall constitute a quorum entitled to take action with respect to that vote on that matter. Except where otherwise provided by statute or by the Certificate of Incorporation or these Bylaws, the affirmative vote of the majority (plurality, in the case of the election of directors) of shares of such class or classes or series present in person, by remote communication, if applicable, or represented by proxy at the meeting shall be the act of such class or classes or series.

Section 9. Adjournment and Notice of Adjourned Meetings. Any meeting of stockholders, whether annual or special, may be adjourned from time to time either by the chairman of the meeting or by the vote of a majority of the shares present in person, by remote communication, if applicable, or represented by proxy. When a meeting is adjourned to another time or place, if any, notice need not be given of the adjourned meeting if the time and place, if any, thereof are announced at the meeting at which the adjournment is taken. At the adjourned meeting, the corporation may transact any business which might have been transacted at the original meeting pursuant to the Certificate of Incorporation, these Bylaws or applicable law. If the adjournment is for more than thirty (30) days or if after the adjournment a new record date is fixed for the adjourned meeting, a notice of the adjourned meeting shall be given to each stockholder of record entitled to vote at the meeting.

Section 10. Voting Rights. For the purpose of determining those stockholders entitled to vote at any meeting of the stockholders, except as otherwise provided by law, only persons in whose names shares stand on the stock records of the corporation on the record date, as provided in Section 12 of these Bylaws, shall be entitled to vote at any meeting of stockholders. Every person entitled to vote or execute consents shall have the right to do so either in person, by remote communication, if applicable, or by an agent or agents authorized by a proxy granted in accordance with Delaware law. An agent so appointed need not be a stockholder. No proxy shall be voted after three (3) years from its date of creation unless the proxy provides for a longer period.

Section 11. Joint Owners of Stock. If shares or other securities having voting power stand of record in the names of two (2) or more persons, whether fiduciaries, members of a partnership, joint tenants, tenants in common, tenants by the entirety, or otherwise, or if two (2) or more persons have the same fiduciary relationship respecting the same shares, unless the Secretary is given written notice to the contrary and is furnished with a copy of the instrument or order appointing them or creating the relationship wherein it is so provided, their acts with respect to voting (including giving consent pursuant to Section 13) shall have the following effect: (a) if only one (1) votes, his or her act binds all; (b) if more than one (1) votes, the act of the majority so voting binds all; (c) if more than one (1) votes, but the vote is evenly split on any particular matter, each faction may vote the securities in question proportionally, or may apply to the Delaware Court of Chancery for relief as provided in the DGCL, Section 217(b). If the instrument filed with the Secretary shows that any such tenancy is held in unequal interests, a majority or even-split for the purpose of subsection (c) shall be a majority or even-split in interest.

Section 12. List of Stockholders. The Secretary shall prepare and make, at least ten (10) days before every meeting of stockholders, a complete list of the stockholders entitled to vote at said meeting, arranged in alphabetical order, showing the address of each stockholder and the number of shares registered in the name of each stockholder. Such list shall be open to the examination of any stockholder, for any purpose germane to the meeting, on a reasonably accessible electronic network, provided that the information required to gain access to such list is provided with the notice of the meeting, or during ordinary business hours, at the principal place of business of the corporation. In the event that the corporation determines to make the list available on an electronic network, the corporation may take reasonable steps to ensure that such information is available only to stockholders of the corporation. The list shall be open to examination of any stockholder during the time of the meeting as provided by law.

Section 13. Action Without Meeting.

(a) Unless otherwise provided in the Certificate of Incorporation, any action required by statute to be taken at any annual or special meeting of the stockholders, or any action which may be taken at any annual or special meeting of the stockholders, may be taken without a meeting, without prior notice and without a vote, if a consent in writing, or by electronic transmission setting forth the action so taken, shall be signed by the holders of outstanding stock having not less than the minimum number of votes that would be necessary to authorize or take such action at a meeting at which all shares entitled to vote thereon were present and voted.

(b) Every written consent or electronic transmission shall bear the date of signature of each stockholder who signs the consent, and no written consent or electronic transmission shall be effective to take the corporate action referred to therein unless, within sixty (60) days of the earliest dated consent delivered to the corporation in the manner herein required, written consents or electronic transmissions signed by a sufficient number of stockholders to take action are delivered to the corporation by delivery to its registered office in the State of Delaware, its principal place of business or an officer or agent of the corporation having custody of the book in which proceedings of meetings of stockholders are recorded. Delivery made to a corporation's registered office shall be by hand or by certified or registered mail, return receipt requested.

(c) Prompt notice of the taking of the corporate action without a meeting by less than unanimous written consent shall be given to those stockholders who have not consented in writing or by electronic transmission and who, if the action had been taken at a meeting, would have been entitled to notice of the meeting if the record date for such meeting had been the date that written consents signed by a sufficient number of stockholders to take action were delivered to the corporation as provided in Section 228(c) of the DGCL. If the action to which the stockholders consent is such as would have required the filing of a certificate under any section of the DGCL if such action had been voted on by stockholders at a meeting thereof, then the certificate filed under such section shall state, in lieu of any statement required by such section concerning any vote of stockholders, that written consent has been given in accordance with Section 228 of the DGCL.

(d) An electronic mail, facsimile or other electronic transmission consenting to an action to be taken and transmitted by a stockholder or proxyholder, shall be deemed to be written, signed and dated for the purposes of this Section, provided that any such electronic mail, facsimile or other electronic transmission sets forth or is delivered with information from which the corporation can determine (i) that the electronic mail, facsimile or other electronic transmission was transmitted by the stockholder or proxyholder or by a person or persons authorized to act for the stockholder and (ii) the date on which such stockholder or proxyholder or authorized person or persons transmitted such electronic mail, facsimile or electronic transmission. The date on which such electronic mail, facsimile or electronic transmission is transmitted shall be deemed to be the date on which such consent was signed. No consent given by electronic mail, facsimile or other electronic transmission shall be deemed to have been delivered until such consent is reproduced in paper form and until such paper form shall be delivered to the corporation by delivery to its registered office in the state of Delaware, its principal place of business or an officer or agent of the corporation having custody of the book in which proceedings of meetings of stockholders are recorded. Delivery made to a corporation's registered office shall be made by hand or by certified or registered mail, return receipt requested. Notwithstanding the foregoing limitations on delivery, consents given by electronic mail, facsimile or other electronic transmission may be otherwise delivered to the principal place of business of the corporation or to an officer or agent of the corporation having custody of the book in which proceedings of meetings of stockholders are recorded if, to the extent and in the manner provided by resolution of the board of directors of the corporation. Any copy, facsimile or other reliable reproduction of a consent in writing may be substituted or used in lieu of the original writing for any and all purposes for which the original writing could be used, provided that such copy, facsimile or other reproduction shall be a complete reproduction of the entire original writing.

Section 14. Organization.

(a) At every meeting of stockholders, the Chairman of the Board of Directors, or, if a Chairman has not been appointed or is absent, the Chief Executive Officer, or, if the Chief Executive Officer is absent, a chairman of the meeting chosen by a majority in interest of the stockholders entitled to vote, present in person or by proxy, shall act as chairman. The Secretary, or, in his or her absence, an Assistant Secretary directed to do so by the Chief Executive Officer, shall act as secretary of the meeting.

(b) The Board of Directors shall be entitled to make such rules or regulations for the conduct of meetings of stockholders as it shall deem necessary, appropriate or convenient. Subject to such rules and regulations of the Board of Directors, if any, the chairman of the meeting shall have the right and authority to prescribe such rules, regulations and procedures and to do all such acts as, in the judgment of such chairman, are necessary, appropriate or convenient for the proper conduct of the meeting, including, without limitation, establishing an agenda or order of business for the meeting, rules and procedures for maintaining order at the meeting and the safety of those present, limitations on participation in such meeting to stockholders of record of the corporation and their duly authorized and constituted proxies and such other persons as the chairman shall permit, restrictions on entry to the meeting after the time fixed for the commencement thereof, limitations on the time allotted to questions or comments by participants and regulation of the opening and closing of the polls for balloting on matters which are to be voted on by ballot. The date and time of the opening and closing of the polls for each matter upon which the stockholders will vote at the meeting shall be announced at the meeting. Unless and to the extent determined by the Board of Directors or the chairman of the meeting, meetings of stockholders shall not be required to be held in accordance with rules of parliamentary procedure.

ARTICLE IV

DIRECTORS

Section 15. Number and Term of Office. The authorized number of directors of the corporation shall be fixed by the Board of Directors from time to time. Directors need not be stockholders unless so required by the Certificate of Incorporation. If for any cause, the directors shall not have been elected at an annual meeting, they may be elected as soon thereafter as convenient.

Section 16. Powers. The business and affairs of the corporation shall be managed by or under the direction of the Board of Directors, except as may be otherwise provided by statute or by the Certificate of Incorporation.

Section 17. Term of Directors.

(a) Subject to the rights of the holders of any series of Preferred Stock to elect additional directors under specified circumstances, directors shall be elected at each annual meeting of stockholders to serve until the next annual meeting of stockholders and his or her successor is duly elected and qualified or until his or her death, resignation or removal. No decrease in the number of directors constituting the Board of Directors shall shorten the term of any incumbent director.

(b) No person entitled to vote at an election for directors may cumulate votes to which such person is entitled.

Section 18. Vacancies. Unless otherwise provided in the Certificate of Incorporation, and subject to the rights of the holders of any series of Preferred Stock, any vacancies on the Board of Directors resulting from death, resignation, disqualification, removal or other causes and any newly created directorships resulting from any increase in the number of directors shall, unless the Board of Directors determines by resolution that any such vacancies or newly created directorships shall be filled by stockholders, be filled only by the affirmative vote of a majority of the directors then in office, even though less than a quorum of the Board of Directors, or by a sole remaining director; *provided, however*, that whenever the holders of any class or classes of stock or series thereof are entitled to elect one or more directors by the provisions of the Certificate of Incorporation, vacancies and newly created directorships of such class or classes or series shall, unless the Board of Directors determines by resolution that any such vacancies or newly created directorships shall be filled by stockholders, be filled by a majority of the directors elected by such class or classes or series thereof then in office, or by a sole remaining director so elected. Any director elected in accordance with the preceding sentence shall hold office for the remainder of the full term of the director for which the vacancy was created or occurred and until such director's successor shall have been elected and qualified. A vacancy in the Board of Directors shall be deemed to exist under this Bylaw in the case of the death, removal or resignation of any director.

Section 19. Resignation. Any director may resign at any time by delivering his or her notice in writing or by electronic transmission to the Secretary, such resignation to specify whether it will be effective at a particular time, upon receipt by the Secretary or at the pleasure of the Board of Directors. If no such specification is made, it shall be deemed effective at the pleasure of the Board of Directors. When one or more directors shall resign from the Board of Directors, effective at a future date, a majority of the directors then in office, including those who have so resigned, shall have power to fill such vacancy or vacancies, the vote thereon to take effect when such resignation or resignations shall become effective, and each Director so chosen shall hold office for the unexpired portion of the term of the Director whose place shall be vacated and until his successor shall have been duly elected and qualified.

Section 20. Removal. Subject to any limitations imposed by applicable law, the Board of Directors or any director may be removed from office at any time (i) with cause by the affirmative vote of the holders of a majority of the voting power of all then-outstanding shares of capital stock of the corporation entitled to vote generally at an election of directors or (ii) without cause by the affirmative vote of the holders of a majority of the voting power of all then-outstanding shares of capital stock of the corporation, entitled to elect such director.

Section 21. Meetings

(a) Regular Meetings. Unless otherwise restricted by the Certificate of Incorporation, regular meetings of the Board of Directors may be held at any time or date and at any place within or without the State of Delaware which has been designated by the Board of Directors and publicized among all directors, either orally or in writing, including a voice-messaging system or other system designated to record and communicate messages, facsimile, or by electronic mail or other electronic means. No further notice shall be required for a regular meeting of the Board of Directors.

(b) Special Meetings. Unless otherwise restricted by the Certificate of Incorporation, special meetings of the Board of Directors may be held at any time and place within or without the State of Delaware whenever called by the Chairman of the Board, the Chief Executive Officer (if a director), the President (if a director) or any director.

(c) Meetings by Electronic Communications Equipment. Any member of the Board of Directors, or of any committee thereof, may participate in a meeting by means of conference telephone or other communications equipment by means of which all persons participating in the meeting can hear each other, and participation in a meeting by such means shall constitute presence in person at such meeting.

(d) Notice of Special Meetings. Notice of the time and place of all special meetings of the Board of Directors shall be orally or in writing, by telephone, including a voice messaging system or other system or technology designed to record and communicate messages, facsimile, telegraph or telex, or by electronic mail or other electronic means, during normal business hours, at least twenty-four (24) hours before the date and time of the meeting. If notice is sent by US mail, it shall be sent by first class mail, postage prepaid at least three (3) days before the date of the meeting. Notice of any meeting may be waived in writing or by electronic transmission at any time before or after the meeting and will be waived by any director by attendance thereat, except when the director attends the meeting for the express purpose of objecting, at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened.

(e) Waiver of Notice. The transaction of all business at any meeting of the Board of Directors, or any committee thereof, however called or noticed, or wherever held, shall be as valid as though had at a meeting duly held after regular call and notice, if a quorum be present and if, either before or after the meeting, each of the directors not present who did not receive notice shall sign a written waiver of notice or shall waive notice by electronic transmission. All such waivers shall be filed with the corporate records or made a part of the minutes of the meeting.

Section 22. Quorum and Voting.

(a) Unless the Certificate of Incorporation requires a greater number, a quorum of the Board of Directors shall consist of a majority of the total number of directors then serving; *provided, however*, that such number shall never be less than one-third (1/3) of the total number of directors except that when one director is authorized, then one director shall constitute a quorum. At any meeting, whether a quorum be present or otherwise, a majority of the directors present may adjourn from time to time until the time fixed for the next regular meeting of the Board of Directors, without notice other than by announcement at the meeting. If the Certificate of Incorporation provides that one or more directors shall have more or less than one vote per director on any matter, every reference in this Section to a majority or other proportion of the directors shall refer to a majority or other proportion of the votes of the directors.

(b) At each meeting of the Board of Directors at which a quorum is present, all questions and business shall be determined by the affirmative vote of a majority of the directors present, unless a different vote be required by law, the Certificate of Incorporation or these Bylaws.

Section 23. Action Without Meeting. Unless otherwise restricted by the Certificate of Incorporation or these Bylaws, any action required or permitted to be taken at any meeting of the Board of Directors or of any committee thereof may be taken without a meeting, if all members of the Board of Directors or committee, as the case may be, consent thereto in writing or by electronic transmission, and such writing or writings or transmission or transmissions are filed with the minutes of proceedings of the Board of Directors or committee. Such filing shall be in paper form if the minutes are maintained in paper form and shall be in electronic form if the minutes are maintained in electronic form.

Section 24. Fees and Compensation. Directors shall be entitled to such compensation for their services as may be approved by the Board of Directors, including, if so approved, by resolution of the Board of Directors, a fixed sum and expenses of attendance, if any, for attendance at each regular or special meeting of the Board of Directors and at any meeting of a committee of the Board of Directors. Nothing herein contained shall be construed to preclude any director from serving the corporation in any other capacity as an officer, agent, employee, or otherwise and receiving compensation therefor.

Section 25. Committees.

(a) **Executive Committee.** The Board of Directors may appoint an Executive Committee to consist of one (1) or more members of the Board of Directors. The Executive Committee, to the extent permitted by law and provided in the resolution of the Board of Directors, shall have and may exercise all the powers and authority of the Board of Directors in the management of the business and affairs of the corporation, and may authorize the seal of the corporation to be affixed to all papers which may require it; but no such committee shall have the power or authority in reference to (i) approving or adopting, or recommending to the stockholders, any action or matter expressly required by the DGCL to be submitted to stockholders for approval, or (ii) adopting, amending or repealing any bylaw of the corporation.

(b) **Other Committees.** The Board of Directors may, from time to time, appoint such other committees as may be permitted by law. Such other committees appointed by the Board of Directors shall consist of one (1) or more members of the Board of Directors and shall have such powers and perform such duties as may be prescribed by the resolution or resolutions creating such committees, but in no event shall any such committee have the powers denied to the Executive Committee in these Bylaws.

(c) **Term.** The Board of Directors, subject to any requirements of any outstanding series of Preferred Stock and the provisions of paragraphs (a) or (b) of this Section may at any time increase or decrease the number of members of a committee or terminate the existence of a committee. The membership of a committee member shall terminate on the date of his or her death or voluntary resignation from the committee or from the Board of Directors. The Board of Directors may at any time for any reason remove any individual committee member and the Board of Directors may fill any committee vacancy created by death, resignation, removal or increase in the number of members of the committee. The Board of Directors may designate one or more directors as alternate members of any committee, who may replace any absent or disqualified member at any meeting of the committee, and, in addition, in the absence or disqualification of any member of a committee, the member or members thereof present at any meeting and not disqualified from voting, whether or not he or they constitute a quorum, may unanimously appoint another member of the Board of Directors to act at the meeting in the place of any such absent or disqualified member.

(d) Meetings. Unless the Board of Directors shall otherwise provide, regular meetings of the Executive Committee or any other committee appointed pursuant to this Section shall be held at such times and places as are determined by the Board of Directors, or by any such committee, and when notice thereof has been given to each member of such committee, no further notice of such regular meetings need be given thereafter. Special meetings of any such committee may be held at any place which has been determined from time to time by such committee, and may be called by any director who is a member of such committee, upon notice to the members of such committee of the time and place of such special meeting given in the manner provided for the giving of notice to members of the Board of Directors of the time and place of special meetings of the Board of Directors. Notice of any special meeting of any committee may be waived in writing at any time before or after the meeting and will be waived by any director by attendance thereat, except when the director attends such special meeting for the express purpose of objecting, at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened. Unless otherwise provided by the Board of Directors in the resolutions authorizing the creation of the committee, a majority of the authorized number of members of any such committee shall constitute a quorum for the transaction of business, and the act of a majority of those present at any meeting at which a quorum is present shall be the act of such committee.

Section 26. Organization. At every meeting of the directors, the Chairman of the Board of Directors, or, if a Chairman has not been appointed or is absent, the Chief Executive Officer (if a director), or if the Chief Executive Officer is not a director or is absent, the President (if a director), or if the President is not a director or is absent, the most senior Vice President (if a director) or, in the absence of any such person, a chairman of the meeting chosen by a majority of the directors present, shall preside over the meeting. The Secretary, or in his or her absence, any Assistant Secretary directed to do so by the Chief Executive Officer or President, shall act as secretary of the meeting.

ARTICLE V

OFFICERS

Section 27. Officers Designated. The officers of the corporation shall include, if and when designated by the Board of Directors, the Chief Executive Officer, the President, one or more Vice Presidents, the Secretary, the Chief Financial Officer, the Treasurer and the Controller, all of whom shall be elected at the annual organizational meeting of the Board of Directors. The Board of Directors may also appoint one or more Assistant Secretaries, Assistant Treasurers, Assistant Controllers and such other officers and agents with such powers and duties as it shall deem necessary. The Board of Directors may assign such additional titles to one or more of the officers as it shall deem appropriate. Any one person may hold any number of offices of the corporation at any one time unless specifically prohibited therefrom by law. The salaries and other compensation of the officers of the corporation shall be fixed by or in the manner designated by the Board of Directors.

Section 28. Tenure and Duties of Officers.

(a) General. All officers shall hold office at the pleasure of the Board of Directors and until their successors shall have been duly elected and qualified, unless sooner removed. Any officer elected or appointed by the Board of Directors may be removed at any time by the Board of Directors. If the office of any officer becomes vacant for any reason, the vacancy may be filled by the Board of Directors, or by the Chief Executive Officer or other officer if so authorized by the Board of Directors.

(b) Duties of Chairman of the Board of Directors. The Chairman of the Board of Directors, when present, shall preside at all meetings of the stockholders and the Board of Directors. The Chairman of the Board of Directors shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers as the Board of Directors shall designate from time to time. If there is no Chief Executive Officer and no President, then the Chairman of the Board of Directors shall also serve as the Chief Executive Officer of the corporation and shall have the powers and duties prescribed in paragraph (c) of this Section.

(c) Duties of Chief Executive Officer. The Chief Executive Officer shall preside at all meetings of the stockholders and (if a director) at all meetings of the Board of Directors, unless the Chairman of the Board of Directors has been appointed and is present. The Chief Executive Officer shall be the chief executive officer of the corporation and shall, subject to the control of the Board of Directors, have general supervision, direction and control of the business and officers of the corporation. The Chief Executive Officer shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers as the Board of Directors shall designate from time to time.

(d) Duties of President. In the absence or disability of the Chief Executive Officer or if the office of Chief Executive Officer is vacant, the President shall preside at all meetings of the stockholders and (if a director) at all meetings of the Board of Directors, unless the Chairman of the Board of Directors has been appointed and is present. If the office of Chief Executive Officer is vacant, the President shall be the chief executive officer of the corporation and shall, subject to the control of the Board of Directors, have general supervision, direction and control of the business and officers of the corporation. The President shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers as the Board of Directors shall designate from time to time.

(e) Duties of Vice Presidents. The Vice Presidents may assume and perform the duties of the President in the absence or disability of the President or whenever the office of President is vacant. The Vice Presidents shall perform other duties commonly incident to their office and shall also perform such other duties and have such other powers as the Board of Directors or the President shall designate from time to time.

(f) Duties of Secretary. The Secretary shall attend all meetings of the stockholders and of the Board of Directors and shall record all acts and proceedings thereof in the minute book of the corporation. The Secretary shall give notice in conformity with these Bylaws of all meetings of the stockholders and of all meetings of the Board of Directors and any committee thereof requiring notice. The Secretary shall perform all other duties provided for in these Bylaws and other duties commonly incident to the office and shall also perform such other duties and have such other powers as the Board of Directors shall designate from time to time. The Chief Executive Officer may direct any Assistant Secretary to assume and perform the duties of the Secretary in the absence or disability of the Secretary, and each Assistant Secretary shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers as the Board of Directors or the Chief Executive Officer shall designate from time to time.

(g) Duties of Chief Financial Officer. The Chief Financial Officer shall keep or cause to be kept the books of account of the corporation in a thorough and proper manner and shall render statements of the financial affairs of the corporation in such form and as often as required by the Board of Directors or the Chief Executive Officer. The Chief Financial Officer, subject to the order of the Board of Directors, shall have the custody of all funds and securities of the corporation. The Chief Financial Officer shall perform other duties commonly incident to his or her office and shall also perform such other duties and have such other powers as the Board of Directors or the Chief Executive Officer shall designate from time to time. The Chief Executive Officer may direct the Treasurer or any Assistant Treasurer, or the Controller or any Assistant Controller to assume and perform the duties of the Chief Financial Officer in the absence or disability of the Chief Financial Officer, and each Treasurer and Assistant Treasurer and each Controller and Assistant Controller shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers as the Board of Directors or the Chief Executive Officer shall designate from time to time.

Section 29. Delegation of Authority. The Board of Directors may from time to time delegate the powers or duties of any officer to any other officer or agent, notwithstanding any provision hereof.

Section 30. Resignations. Any officer may resign at any time by giving notice in writing or by electronic transmission notice to the Board of Directors or to the Chief Executive Officer or to the President or to the Secretary. Any such resignation shall be effective when received by the person or persons to whom such notice is given, unless a later time is specified therein, in which event the resignation shall become effective at such later time. Unless otherwise specified in such notice, the acceptance of any such resignation shall not be necessary to make it effective. Any resignation shall be without prejudice to the rights, if any, of the corporation under any contract with the resigning officer.

Section 31. Removal. Any officer may be removed from office at any time, either with or without cause, by the affirmative vote of a majority of the directors in office at the time, or by the unanimous written or electronic consent of the directors in office at the time, or by any committee or superior officers upon whom such power of removal may have been conferred by the Board of Directors.

ARTICLE VI

EXECUTION OF CORPORATE INSTRUMENTS AND VOTING OF SECURITIES OWNED BY THE CORPORATION

Section 32. Execution of Corporate Instruments. The Board of Directors may, in its discretion, determine the method and designate the signatory officer or officers, or other person or persons, to execute on behalf of the corporation any corporate instrument or document, or to sign on behalf of the corporation the corporate name, or to enter into contracts on behalf of the corporation, except where otherwise provided by law or these Bylaws, and such execution or signature shall be binding upon the corporation. All checks and drafts drawn on banks or other depositories of funds to the credit of the corporation or on special accounts of the corporation shall be signed by such person or persons as the Board of Directors shall authorize so to do. Unless authorized or ratified by the Board of Directors or within the agency power of an officer, no officer, agent or employee shall have any power or authority to bind the corporation by any contract or engagement or to pledge its credit or to render it liable for any purpose or for any amount.

Section 33. Voting of Securities Owned by the Corporation. All stock and other securities of other corporations owned or held by the corporation for itself, or for other parties in any capacity, shall be voted, and all proxies with respect thereto shall be executed, by the person authorized so to do by resolution of the Board of Directors, or, in the absence of such authorization, by the Chairman of the Board of Directors, the Chief Executive Officer, the President, or any Vice President.

ARTICLE VII

SHARES OF STOCK

Section 34. Form and Execution of Certificates. The shares of the corporation shall be represented by certificates, or shall be uncertificated. Certificates for the shares of stock, if any, of the corporation shall be in such form as is consistent with the Certificate of Incorporation and applicable law. Every holder of shares of stock in the corporation represented by certificate shall be entitled to have a certificate signed by or in the name of the corporation by any two authorized officers, including but not limited to the Chief Executive Officer, the President, the Chief Financial Officer, any Vice President, the Treasurer or Assistant Treasurer or the Secretary or Assistant Secretary, certifying the number of shares owned by him or her in the corporation. Any or all of the signatures on the certificate may be facsimiles. In case any officer, transfer agent, or registrar who has signed or whose facsimile signature has been placed upon a certificate shall have ceased to be such officer, transfer agent, or registrar before such certificate is issued, it may be issued with the same effect as if he or she were such officer, transfer agent, or registrar at the date of issue.

Section 35. Lost Certificates. A new certificate or certificates shall be issued in place of any certificate or certificates theretofore issued by the corporation alleged to have been lost, stolen, or destroyed, upon the making of an affidavit of that fact by the person claiming the certificate of stock to be lost, stolen, or destroyed. The corporation may require, as a condition precedent to the issuance of a new certificate or certificates, the owner of such lost, stolen, or destroyed certificate or certificates, or the owner's legal representative, to agree to indemnify the corporation in such manner as it shall require or to give the corporation a surety bond in such form and amount as it may direct as indemnity against any claim that may be made against the corporation with respect to the certificate alleged to have been lost, stolen, or destroyed.

Section 36. Reserved.

Section 37. Fixing Record Dates.

(a) In order that the corporation may determine the stockholders entitled to notice of or to vote at any meeting of stockholders or any adjournment thereof, the Board of Directors may fix, in advance, a record date, which record date shall not precede the date upon which the resolution fixing the record date is adopted by the Board of Directors, and which record date shall, subject to applicable law, not be more than sixty (60) nor less than ten (10) days before the date of such meeting. If no record date is fixed by the Board of Directors, the record date for determining stockholders entitled to notice of or to vote at a meeting of stockholders shall be at the close of business on the day immediately preceding the day on which notice is given, or if notice is waived, at the close of business on the day immediately preceding the day on which the meeting is held. A determination of stockholders of record entitled to notice of or to vote at a meeting of stockholders shall apply to any adjournment of the meeting; *provided, however*, that the Board of Directors may fix a new record date for the adjourned meeting.

(b) In order that the corporation may determine the stockholders entitled to consent to corporate action in writing without a meeting, the Board of Directors may fix a record date, which record date shall not precede the date upon which the resolution fixing the record date is adopted by the Board of Directors, and which date shall not be more than ten (10) days after the date upon which the resolution fixing the record date is adopted by the Board of Directors. Any stockholder of record seeking to have the stockholders authorize or take corporate action by written consent shall, by written notice to the Secretary, request the Board of Directors to fix a record date. The Board of Directors shall promptly, but in all events within ten (10) days after the date on which such a request is received, adopt a resolution fixing the record date. If no record date has been fixed by the Board of Directors within ten (10) days of the date on which such a request is received, the record date for determining stockholders entitled to consent to corporate action in writing without a meeting, when no prior action by the Board of Directors is required by applicable law, shall be the first date on which a signed written consent setting forth the action taken or proposed to be taken is delivered to the corporation by delivery to its registered office in the State of Delaware, its principal place of business or an officer or agent of the corporation having custody of the book in which proceedings of meetings of stockholders are recorded. Delivery made to the corporation's registered office shall be by hand or by certified or registered mail, return receipt requested. If no record date has been fixed by the Board of Directors and prior action by the Board of Directors is required by law, the record date for determining stockholders entitled to consent to corporate action in writing without a meeting shall be at the close of business on the day on which the Board of Directors adopts the resolution taking such prior action.

(c) In order that the corporation may determine the stockholders entitled to receive payment of any dividend or other distribution or allotment of any rights or the stockholders entitled to exercise any rights in respect of any change, conversion or exchange of stock, or for the purpose of any other lawful action, the Board of Directors may fix, in advance, a record date, which record date shall not precede the date upon which the resolution fixing the record date is adopted, and which record date shall be not more than sixty (60) days prior to such action. If no record date is fixed, the record date for determining stockholders for any such purpose shall be at the close of business on the day on which the Board of Directors adopts the resolution relating thereto.

Section 38. Registered Stockholders. The corporation shall be entitled to recognize the exclusive right of a person registered on its books as the owner of shares to receive dividends, and to vote as such owner, and shall not be bound to recognize any equitable or other claim to or interest in such share or shares on the part of any other person whether or not it shall have express or other notice thereof, except as otherwise provided by the laws of Delaware.

ARTICLE VIII

OTHER SECURITIES OF THE CORPORATION

Section 39. Execution of Other Securities. All bonds, debentures and other corporate securities of the corporation, other than stock certificates (covered in Section 34 of these Bylaws), may be signed by the Chairman of the Board of Directors, the Chief Executive Officer, the President or any Vice President, or such other person as may be authorized by the Board of Directors, and the corporate seal impressed thereon or a facsimile of such seal imprinted thereon and attested by the signature of the Secretary or an Assistant Secretary, or the Chief Financial Officer or Treasurer or an Assistant Treasurer; *provided, however*, that where any such bond, debenture or other corporate security shall be authenticated by the manual signature, or where permissible facsimile signature, of a trustee under an indenture pursuant to which such bond, debenture or other corporate security shall be issued, the signatures of the persons signing and attesting the corporate seal on such bond, debenture or other corporate security may be the imprinted facsimile of the signatures of such persons. Interest coupons appertaining to any such bond, debenture or other corporate security, authenticated by a trustee as aforesaid, shall be signed by the Treasurer or an Assistant Treasurer of the corporation or such other person as may be authorized by the Board of Directors, or bear imprinted thereon the facsimile signature of such person. In case any officer who shall have signed or attested any bond, debenture or other corporate security, or whose facsimile signature shall appear thereon or on any such interest coupon, shall have ceased to be such officer before the bond, debenture or other corporate security so signed or attested shall have been delivered, such bond, debenture or other corporate security nevertheless may be adopted by the corporation and issued and delivered as though the person who signed the same or whose facsimile signature shall have been used thereon had not ceased to be such officer of the corporation.

ARTICLE IX

DIVIDENDS

Section 40. Declaration of Dividends. Dividends upon the capital stock of the corporation, subject to the provisions of the Certificate of Incorporation and applicable law, if any, may be declared by the Board of Directors pursuant to law at any regular or special meeting. Dividends may be paid in cash, in property, or in shares of the capital stock, subject to the provisions of the Certificate of Incorporation and applicable law.

Section 41. Dividend Reserve. Before payment of any dividend, there may be set aside out of any funds of the corporation available for dividends such sum or sums as the Board of Directors from time to time, in their absolute discretion, think proper as a reserve or reserves to meet contingencies, or for equalizing dividends, or for repairing or maintaining any property of the corporation, or for such other purpose as the Board of Directors shall think conducive to the interests of the corporation, and the Board of Directors may modify or abolish any such reserve in the manner in which it was created.

ARTICLE X

FISCAL YEAR

Section 42. Fiscal Year. The fiscal year of the corporation shall be fixed by resolution of the Board of Directors.

ARTICLE XI

INDEMNIFICATION

Section 43. Indemnification of Directors, Executive Officers, Employees and Other Agents.

(a) Directors and Executive Officers. The corporation shall indemnify its directors and executive officers (for the purposes of this Article, “executive officers” shall have the meaning defined in Rule 3b-7 promulgated under the 1934 Act) to the fullest extent not prohibited by the DGCL or any other applicable law; *provided, however*, that the corporation may modify the extent of such indemnification by individual contracts with its directors and executive officers; and, *provided, further*, that the corporation shall not be required to indemnify any director or executive officer in connection with any proceeding (or part thereof) initiated by such person unless (i) such indemnification is expressly required to be made by law, (ii) the proceeding was authorized by the Board of Directors of the corporation, (iii) such indemnification is provided by the corporation, in its sole discretion, pursuant to the powers vested in the corporation under the DGCL or any other applicable law or (iv) such indemnification is required to be made under paragraph (d) of this Section.

(b) Other Officers, Employees and Other Agents. The corporation shall have power to indemnify its other officers, employees and other agents as set forth in the DGCL or any other applicable law. The Board of Directors shall have the power to delegate the determination of whether indemnification shall be given to any such person except executive officers to such officers or other persons as the Board of Directors shall determine.

(c) Expenses. The corporation shall advance to any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of the fact that such person is or was a director or executive officer of the corporation, or is or was serving at the request of the corporation as a director or executive officer of another corporation, partnership, joint venture, trust or other enterprise, prior to the final disposition of the proceeding, promptly following request therefor, all expenses incurred by any director or executive officer in connection with such proceeding; *provided, however*, that, if the DGCL requires, an advancement of expenses incurred by a director or officer in his or her capacity as a director or officer (and not in any other capacity in which service was or is rendered by such indemnitee, including, without limitation, service to an employee benefit plan) shall be made only upon delivery to the corporation of an undertaking, by or on behalf of such indemnitee, to repay all amounts so advanced if it shall ultimately be determined by final judicial decision from which there is no further right to appeal that such indemnitee is not entitled to be indemnified for such expenses under this Section or otherwise.

Notwithstanding the foregoing, unless otherwise determined pursuant to paragraph (e) of this Section, no advance shall be made by the corporation to an executive officer of the corporation (except by reason of the fact that such executive officer is or was a director of the corporation, in which event this paragraph shall not apply) in any action, suit or proceeding, whether civil, criminal, administrative or investigative, if a determination is reasonably and promptly made (i) by a majority vote of a quorum consisting of directors who were not parties to the proceeding, even if not a quorum, or (ii) by a committee of such directors designated by a majority of such directors, even though less than a quorum, or (iii) if there are no such directors, or such directors so direct, by independent legal counsel in a written opinion, that the facts known to the decision-making party at the time such determination is made demonstrate clearly and convincingly that such person acted in bad faith or in a manner that such person did not believe to be in or not opposed to the best interests of the corporation.

(d) Enforcement. Without the necessity of entering into an express contract, all rights to indemnification and advances to directors and executive officers under this Section shall be deemed to be contractual rights and be effective to the same extent and as if provided for in a contract between the corporation and the director or executive officer. Any right to indemnification or advances granted by this Section to a director or executive officer or officer shall be enforceable by or on behalf of the person holding such right in any court of competent jurisdiction if (i) the claim for indemnification or advances is denied, in whole or in part, or (ii) no disposition of such claim is made within ninety (90) days of request therefor. The claimant in such enforcement action, if successful in whole or in part, shall be entitled to be paid also the expense of prosecuting the claim. In connection with any claim for indemnification, the corporation shall be entitled to raise as a defense to any such action that the claimant has not met the standards of conduct that make it permissible under the DGCL or any other applicable law for the corporation to indemnify the claimant for the amount claimed. In connection with any claim by an executive officer of the corporation (except in any action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of the fact that such executive officer is or was a director of the corporation) for advances, the corporation shall be entitled to raise as a defense as to any such action clear and convincing evidence that such person acted in bad faith or in a manner that such person did not believe to be in or not opposed to the best interests of the corporation, or with respect to any criminal action or proceeding that such person acted without reasonable cause to believe that his or her conduct was lawful. Neither the failure of the corporation (including its Board of Directors, independent legal counsel or its stockholders) to have made a determination prior to the commencement of such action that indemnification of the claimant is proper in the circumstances because he has met the applicable standard of conduct set forth in the DGCL or any other applicable law, nor an actual determination by the corporation (including its Board of Directors, independent legal counsel or its stockholders) that the claimant has not met such applicable standard of conduct, shall be a defense to the action or create a presumption that claimant has not met the applicable standard of conduct.

(e) Non-Exclusivity of Rights. The rights conferred on any person by this Section shall not be exclusive of any other right which such person may have or hereafter acquire under any applicable statute, provision of the Certificate of Incorporation, Bylaws, agreement, vote of stockholders or disinterested directors or otherwise, both as to action in his or her official capacity and as to action in another capacity while holding office. The corporation is specifically authorized to enter into individual contracts with any or all of its directors, officers, employees or agents respecting indemnification and advances, to the fullest extent not prohibited by the DGCL or any other applicable law.

(f) Survival of Rights. The rights conferred on any person by this Section shall continue as to a person who has ceased to be a director or executive officer and shall inure to the benefit of the heirs, executors and administrators of such a person.

(g) Insurance. To the fullest extent permitted by the DGCL, or any other applicable law, the corporation, upon approval by the Board of Directors, may purchase insurance on behalf of any person required or permitted to be indemnified pursuant to this Section.

(h) Amendments. Any repeal or modification of this Section shall only be prospective and shall not affect the rights under this Bylaw in effect at the time of the alleged occurrence of any action or omission to act that is the cause of any proceeding against any agent of the corporation.

(i) Saving Clause. If this Section or any portion hereof shall be invalidated on any ground by any court of competent jurisdiction, then the corporation shall nevertheless indemnify each director and executive officer to the full extent not prohibited by any applicable portion of this Bylaw that shall not have been invalidated, or by any other applicable law. If this Section shall be invalid due to the application of the indemnification provisions of another jurisdiction, then the corporation shall indemnify each director and executive officer to the full extent under applicable law.

(j) Certain Definitions. For the purposes of this Section, the following definitions shall apply:

(1) The term “proceeding” shall be broadly construed and shall include, without limitation, the investigation, preparation, prosecution, defense, settlement, arbitration and appeal of, and the giving of testimony in, any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative.

(2) The term “expenses” shall be broadly construed and shall include, without limitation, court costs, attorneys’ fees, witness fees, fines, amounts paid in settlement or judgment and any other costs and expenses of any nature or kind incurred in connection with any proceeding.

(3) The term the “corporation” shall include, in addition to the resulting corporation, any constituent corporation (including any constituent of a constituent) absorbed in a consolidation or merger which, if its separate existence had continued, would have had power and authority to indemnify its directors, officers, and employees or agents, so that any person who is or was a director, officer, employee or agent of such constituent corporation, or is or was serving at the request of such constituent corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, shall stand in the same position under the provisions of this Section with respect to the resulting or surviving corporation as he would have with respect to such constituent corporation if its separate existence had continued.

(4) References to a “director,” “executive officer,” “officer,” “employee,” or “agent” of the corporation shall include, without limitation, situations where such person is serving at the request of the corporation as, respectively, a director, executive officer, officer, employee, trustee or agent of another corporation, partnership, joint venture, trust or other enterprise.

(5) References to “other enterprises” shall include employee benefit plans; references to “fines” shall include any excise taxes assessed on a person with respect to an employee benefit plan; and references to “serving at the request of the corporation” shall include any service as a director, officer, employee or agent of the corporation which imposes duties on, or involves services by, such director, officer, employee, or agent with respect to an employee benefit plan, its participants, or beneficiaries; and a person who acted in good faith and in a manner he reasonably believed to be in the interest of the participants and beneficiaries of an employee benefit plan shall be deemed to have acted in a manner “not opposed to the best interests of the corporation” as referred to in this Section.

ARTICLE XII

NOTICES

Section 44. Notices.

(a) Notice to Stockholders. Written notice to stockholders of stockholder meetings shall be given as provided in Section 7 of these Bylaws. Without limiting the manner by which notice may otherwise be given effectively to stockholders under any agreement or contract with such stockholder, and except as otherwise required by law, written notice to stockholders for purposes other than stockholder meetings may be sent by United States mail or nationally recognized overnight courier, or by facsimile, telegraph or telex or by electronic mail or other electronic means.

(b) Notice to Directors. Any notice required to be given to any director may be given by the method stated in paragraph (a) of this Section, or as provided for in Section 21 of these Bylaws. If such notice is not delivered personally, it shall be sent to such address as such director shall have filed in writing with the Secretary, or, in the absence of such filing, to the last known post office address of such director.

(c) Affidavit of Mailing. An affidavit of mailing, executed by a duly authorized and competent employee of the corporation or its transfer agent appointed with respect to the class of stock affected or other agent, specifying the name and address or the names and addresses of the stockholder or stockholders, or director or directors, to whom any such notice or notices was or were given, and the time and method of giving the same, shall in the absence of fraud, be prima facie evidence of the facts therein contained.

(d) Methods of Notice. It shall not be necessary that the same method of giving notice be employed in respect of all recipients of notice, but one permissible method may be employed in respect of any one or more, and any other permissible method or methods may be employed in respect of any other or others.

(e) Notice to Person with Whom Communication Is Unlawful. Whenever notice is required to be given, under any provision of law or of the Certificate of Incorporation or Bylaws of the corporation, to any person with whom communication is unlawful, the giving of such notice to such person shall not be required and there shall be no duty to apply to any governmental authority or agency for a license or permit to give such notice to such person. Any action or meeting which shall be taken or held without notice to any such person with whom communication is unlawful shall have the same force and effect as if such notice had been duly given. In the event that the action taken by the corporation is such as to require the filing of a certificate under any provision of the DGCL, the certificate shall state, if such is the fact and if notice is required, that notice was given to all persons entitled to receive notice except such persons with whom communication is unlawful.

(f) Notice to Stockholders Sharing an Address. Except as otherwise prohibited under DGCL, any notice given under the provisions of DGCL, the Certificate of Incorporation or the Bylaws shall be effective if given by a single written notice to stockholders who share an address if consented to by the stockholders at that address to whom such notice is given. Such consent shall have been deemed to have been given if such stockholder fails to object in writing to the corporation within 60 days of having been given notice by the corporation of its intention to send the single notice. Any consent shall be revocable by the stockholder by written notice to the corporation.

ARTICLE XIII

AMENDMENTS

Section 45. Amendments. The Board of Directors is expressly empowered to adopt, amend or repeal Bylaws of the corporation. The stockholders shall also have power to adopt, amend or repeal the Bylaws of the corporation; *provided, however*, that, in addition to any vote of the holders of any class or series of stock of the corporation required by law or by the Certificate of Incorporation, such action by stockholders shall require the affirmative vote of the holders of a majority of the voting power of all of the then-outstanding shares of the capital stock of the corporation entitled to vote generally in the election of directors, voting together as a single class.

ARTICLE XIV

RESERVED

ARTICLE XV

LOANS TO OFFICERS

Section 46. Loans to Officers. Except as otherwise prohibited under applicable law, the corporation may lend money to, or guarantee any obligation of, or otherwise assist any officer or other employee of the corporation or of its subsidiaries, including any officer or employee who is a Director of the corporation or its subsidiaries, whenever, in the judgment of the Board of Directors, such loan, guarantee or assistance may reasonably be expected to benefit the corporation. The loan, guarantee or other assistance may be with or without interest and may be unsecured, or secured in such manner as the Board of Directors shall approve, including, without limitation, a pledge of shares of stock of the corporation. Nothing in these Bylaws shall be deemed to deny, limit or restrict the powers of guaranty or warranty of the corporation at common law or under any statute.

ARTICLE XVI

MISCELLANEOUS

Section 47. Annual Report.

(a) Subject to the provisions of paragraph (b) of this Section, the Board of Directors shall cause an annual report to be sent to each stockholder of the corporation not later than one hundred twenty (120) days after the close of the corporation's fiscal year. Such report shall include a balance sheet as of the end of such fiscal year and an income statement and statement of changes in financial position for such fiscal year, accompanied by any report thereon of independent accountants or, if there is no such report, the certificate of an authorized officer of the corporation that such statements were prepared without audit from the books and records of the corporation. Such report shall be sent to stockholders at least fifteen (15) days prior to the next annual meeting of stockholders after the end of the fiscal year to which it relates.

(b) If and so long as there are fewer than one hundred (100) holders of record of the corporation's shares, the requirement of sending of an annual report to the stockholders of the corporation is hereby expressly waived.

Section 48. Forum. Unless the corporation consents in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware shall be the sole and exclusive forum for (i) any derivative action or proceeding brought on behalf of the corporation; (ii) any action asserting a claim of breach of a fiduciary duty owed by any director, officer or other employee of the corporation to the corporation or the corporation's stockholders; (iii) any action asserting a claim against the corporation or any director or officer or other employee of the corporation arising pursuant to any provision of the DGCL, the certificate of incorporation or the Bylaws of the corporation; or (iv) any action asserting a claim against the corporation or any director or officer or other employee of the corporation governed by the internal affairs doctrine.

AMENDED AND RESTATED BYLAWS
OF
BLUE WATER VACCINES INC.

ARTICLE I
Meeting of Stockholders

Section 1.1. *Annual Meetings.* If required by applicable law, an annual meeting of stockholders shall be held for the election of directors at such date, time and place, if any, either within or without the State of Delaware, as may be designated by resolution of the Board of Directors from time to time. Any other proper business may be transacted at the annual meeting.

Section 1.2. *Special Meetings.* Special meetings of stockholders for any purpose or purposes may be called at any time by the Chairman of the Board of Directors, or by the Chief Executive Officer or President, or by a resolution adopted by a majority of the whole Board of Directors, but such special meetings may not be called by any other person or persons. Business transacted at any special meeting of stockholders shall be limited to the purposes stated in the notice.

Section 1.3. *Notice of Meetings.* Whenever stockholders are required or permitted to take any action at a meeting, a notice of the meeting shall be given that shall state the place, if any, date and hour of the meeting, the means of remote communications, if any, by which stockholders and proxy holders may be deemed to be present in person and vote at such meeting, the record date for determining the stockholders entitled to vote at the meeting (if such date is different from the record date for stockholders entitled to notice of the meeting) and, in the case of a special meeting, the purpose or purposes for which the meeting is called. To be timely, a stockholder's notice shall be delivered to the Secretary at the principal executive offices of the corporation not later than the close of business on the ninetieth (90th) day nor earlier than the close of business on the one hundred twentieth (120th) day prior to the first anniversary of the preceding year's annual meeting; *provided, however,* that in the event that the date of the annual meeting is advanced more than thirty (30) days prior to or delayed by more than thirty (30) days after the anniversary of the preceding year's annual meeting, notice by the stockholder to be timely must be so delivered not earlier than the close of business on the one hundred twentieth (120th) day prior to such annual meeting and not later than the close of business on the later of the ninetieth (90th) day prior to such annual meeting or the tenth (10th) day following the day on which public announcement of the date of such meeting is first made. In no event shall the public announcement of an adjournment of an annual meeting commence a new time period for the giving of a stockholder's notice as described above. If mailed, such notice shall be deemed to be given when deposited in the United States mail, postage prepaid, directed to the stockholder at such stockholder's address as it appears on the records of the corporation.

Section 1.4. *Adjournments.* Any meeting of stockholders, annual or special, may adjourn from time to time to reconvene at the same or some other place, and notice need not be given of any such adjourned meeting if the time and place thereof are announced at the meeting at which the adjournment is taken. At the adjourned meeting the corporation may transact any business which might have been transacted at the original meeting. If the adjournment is for more than thirty (30) days, a notice of the adjourned meeting shall be given to each stockholder of record entitled to vote at the meeting. If after the adjournment a new record date for determination of stockholders entitled to vote is fixed for the adjourned meeting, the Board of Directors shall fix as the record date for determining stockholders entitled to notice of such adjourned meeting the same or an earlier date as that fixed for determination of stockholders entitled to vote at the adjourned meeting, and shall give notice of the adjourned meeting to each stockholder of record as of the record date so fixed for notice of such adjourned meeting.

Section 1.5. *Quorum.* Except as otherwise provided by law, the certificate of incorporation or these bylaws, at each meeting of stockholders the presence in person or by proxy of the holders of a majority in voting power of the outstanding shares of stock entitled to vote at the meeting shall be necessary and sufficient to constitute a quorum. In the absence of a quorum, the stockholders so present may, by a majority in voting power thereof, adjourn the meeting from time to time in the manner provided in Section 1.4 of these bylaws until a quorum shall attend. Shares of its own stock belonging to the corporation or to another corporation, if a majority of the shares entitled to vote in the election of directors of such other corporation is held, directly or indirectly, by the corporation, shall neither be entitled to vote nor be counted for quorum purposes; provided, however, that the foregoing shall not limit the right of the corporation or any subsidiary of the corporation to vote stock, including but not limited to its own stock, held by it in a fiduciary capacity.

Section 1.6. *Organization.* Meetings of stockholders shall be presided over by the Chairman of the Board of Directors or, in his or her absence, by the Chief Executive Officer or, in his or her absence, by the President or, in his or her absence, by a Vice President or, in the absence of the foregoing persons, by a chairman designated by the Board of Directors or, in the absence of such designation, by a chairman chosen at the meeting. The Secretary shall act as secretary of the meeting, but in his or her absence the chairman of the meeting may appoint any person to act as secretary of the meeting.

Section 1.7. *Voting; Proxies.* Except as otherwise provided by or pursuant to the provisions of the certificate of incorporation, each stockholder entitled to vote at any meeting of stockholders shall be entitled to one vote for each share of stock held by such stockholder which has voting power upon the matter in question. Each stockholder entitled to vote at a meeting of stockholders may authorize another person or persons to act for such stockholder by proxy, but no such proxy shall be voted or acted upon after three years from its date, unless the proxy provides for a longer period. A proxy shall be irrevocable if it states that it is irrevocable and if, and only as long as, it is coupled with an interest sufficient in law to support an irrevocable power. A stockholder may revoke any proxy which is not irrevocable by attending the meeting and voting in person or by delivering to the Secretary of the corporation a revocation of the proxy or a new proxy bearing a later date. Voting at meetings of stockholders need not be by written ballot. At all meetings of stockholders for the election of directors at which a quorum is present a plurality of the votes cast shall be sufficient to elect. All other elections and questions presented to the stockholders at a meeting at which a quorum is present shall, unless otherwise provided by the certificate of incorporation, these bylaws, the rules or regulations of any stock exchange applicable to the corporation, or applicable law or pursuant to any regulation applicable to the corporation or its securities, be decided by the affirmative vote of the holders of a majority in voting power of the shares of stock of the corporation which are present in person or by proxy and entitled to vote thereon.

Section 1.8. *Fixing Date for Determination of Stockholders of Record.*

(a) In order that the corporation may determine the stockholders entitled to notice of any meeting of stockholders or any adjournment thereof, the Board of Directors may fix a record date, which record date shall not precede the date upon which the resolution fixing the record date is adopted by the Board of Directors, and which record date shall, unless otherwise required by law, not be more than sixty (60) nor less than ten (10) days before the date of such meeting. If the Board of Directors so fixes a date, such date shall also be the record date for determining the stockholders entitled to vote at such meeting unless the Board of Directors determines, at the time it fixes such record date, that a later date on or before the date of the meeting shall be the date for making such determination. If no record date is fixed by the Board of Directors, the record date for determining stockholders entitled to notice of or to vote at a meeting of stockholders shall be at the close of business on the day next preceding the day on which notice is given, or, if notice is waived, at the close of business on the day next preceding the day on which the meeting is held. A determination of stockholders of record entitled to notice of or to vote at a meeting of stockholders shall apply to any adjournment of the meeting; provided, however, that the Board of Directors may fix a new record date for determination of stockholders entitled to vote at the adjourned meeting, and in such case shall also fix as the record date for stockholders entitled to notice of such adjourned meeting the same or an earlier date as that fixed for determination of stockholders entitled to vote in accordance herewith at the adjourned meeting.

(b) In order that the corporation may determine the stockholders entitled to receive payment of any dividend or other distribution or allotment of any rights, or entitled to exercise any rights in respect of any change, conversion or exchange of stock or for the purpose of any other lawful action, the Board of Directors may fix a record date, which shall not be more than sixty (60) days prior to such other action. If no such record date is fixed, the record date for determining stockholders for any such purpose shall be at the close of business on the day on which the Board of Directors adopts the resolution relating thereto.

Section 1.9. *List of Stockholders Entitled to Vote.* The Secretary shall prepare and make, at least ten (10) days before every meeting of stockholders, a complete list of the stockholders entitled to vote at the meeting (provided, however, if the record date for determining the stockholders entitled to vote is less than ten (10) days before the date of the meeting, the list shall reflect the stockholders entitled to vote as of the tenth day before the meeting date), arranged in alphabetical order, and showing the address of each stockholder and the number of shares registered in the name of each stockholder. Such list shall be open to the examination of any stockholder, for any purpose germane to the meeting at least ten (10) days prior to the meeting (i) on a reasonably accessible electronic network, provided that the information required to gain access to such list is provided with the notice of meeting or (ii) during ordinary business hours at the principal place of business of the corporation. If the meeting is to be held at a place, then a list of stockholders entitled to vote at the meeting shall be produced and kept at the time and place of the meeting during the whole time thereof and may be examined by any stockholder who is present. If the meeting is to be held solely by means of remote communication, then the list shall also be open to the examination of any stockholder during the whole time of the meeting on a reasonably accessible electronic network, and the information required to access such list shall be provided with the notice of the meeting. Except as otherwise provided by law, the stock ledger shall be the only evidence as to who are the stockholders entitled to examine the list of stockholders required by this Section 1.9 or to vote in person or by proxy at any meeting of stockholders.

Section 1.10. *Action by Written Consent of Stockholders.* Unless otherwise provided by the certificate of incorporation, any action required or permitted to be taken by the stockholders of the corporation must be effected at a duly held meeting of stockholders of the corporation at which a quorum is present or represented and may not be effected by any consent in writing by such stockholders.

Section 1.11. *Inspectors of Election.* The corporation shall, in advance of any meeting of stockholders, appoint one or more inspectors of election, who may be employees of the corporation, to act at the meeting or any adjournment thereof and to make a written report thereof. The corporation may designate one or more persons as alternate inspectors to replace any inspector who fails to act. In the event that no inspector so appointed or designated is able to act at a meeting of stockholders, the person presiding at the meeting shall appoint one or more inspectors to act at the meeting. Each inspector, before entering upon the discharge of his or her duties, shall take and sign an oath to execute faithfully the duties of inspector with strict impartiality and according to the best of his or her ability. The inspector or inspectors so appointed or designated shall (i) ascertain the number of shares of capital stock of the corporation outstanding and the voting power of each such share, (ii) determine the shares of capital stock of the corporation represented at the meeting and the validity of proxies and ballots, (iii) count all votes and ballots, (iv) determine and retain for a reasonable period a record of the disposition of any challenges made to any determination by the inspectors, and (v) certify their determination of the number of shares of capital stock of the corporation represented at the meeting and such inspectors' count of all votes and ballots. Such certification and report shall specify such other information as may be required by law. In determining the validity and counting of proxies and ballots cast at any meeting of stockholders of the corporation, the inspectors may consider such information as is permitted by applicable law. No person who is a candidate for an office at an election may serve as an inspector at such election.

Section 1.12. *Conduct of Meetings.* The date and time of the opening and the closing of the polls for each matter upon which the stockholders will vote at a meeting shall be announced at the meeting by the person presiding over the meeting. The Board of Directors may adopt by resolution such rules and regulations for the conduct of the meeting of stockholders as it shall deem appropriate. Except to the extent inconsistent with such rules and regulations as adopted by the Board of Directors, the person presiding over any meeting of stockholders shall have the right and authority to convene and (for any or no reason) to adjourn the meeting, to prescribe such rules, regulations and procedures and to do all such acts as, in the judgment of such presiding person, are appropriate for the proper conduct of the meeting. Such rules, regulations or procedures, whether adopted by the Board of Directors or prescribed by the presiding person of the meeting, may include, without limitation, the following: (i) the establishment of an agenda or order of business for the meeting; (ii) rules and procedures for maintaining order at the meeting and the safety of those present; (iii) limitations on attendance at or participation in the meeting to stockholders entitled to vote at the meeting, their duly authorized and constituted proxies or such other persons as the presiding person of the meeting shall determine; (iv) restrictions on entry to the meeting after the time fixed for the commencement thereof; and (v) limitations on the time allotted to questions or comments by participants. The presiding person at any meeting of stockholders, in addition to making any other determinations that may be appropriate to the conduct of the meeting, shall, if the facts warrant, determine and declare to the meeting that a matter or business was not properly brought before the meeting and if such presiding person should so determine, such presiding person shall so declare to the meeting and any such matter or business not properly brought before the meeting shall not be transacted or considered. Unless and to the extent determined by the Board of Directors or the person presiding over the meeting, meetings of stockholders shall not be required to be held in accordance with the rules of parliamentary procedure.

Section 1.13. *Notice of Stockholder Business and Nominations.*

(A) *Annual Meetings of Stockholders.* (1) Nominations of persons for election to the Board of Directors of the corporation and the proposal of other business to be considered by the stockholders may be made at an annual meeting of stockholders only (a) pursuant to the corporation's notice of meeting (or any supplement thereto), (b) by or at the direction of the Board of Directors or any committee thereof or (c) by any stockholder of the corporation who was a stockholder of record of the corporation at the time the notice provided for in this Section 1.13 is delivered to the Secretary of the corporation, who is entitled to vote at the meeting and who complies with the notice procedures set forth in this Section 1.13.

(2) For any nominations or other business to be properly brought before an annual meeting by a stockholder pursuant to clause (c) of paragraph (A)(1) of this Section 1.13, the stockholder must have given timely notice thereof in writing to the Secretary of the corporation and any such proposed business (other than the nominations of persons for election to the Board of Directors) must constitute a proper matter for stockholder action. To be timely, a stockholder's notice shall be delivered to the Secretary at the principal executive offices of the corporation not later than the close of business on the ninetieth (90th) day, nor earlier than the close of business on the one hundred twentieth (120th) day, prior to the first anniversary of the preceding year's annual meeting (provided, however, that in the event that no annual meeting was held in the previous year, the date of the annual meeting is more than thirty (30) days before or more than seventy (70) days after such anniversary date, notice by the stockholder must be so delivered not earlier than the close of business on the one hundred twentieth (120th) day prior to such annual meeting and not later than the close of business on the later of the ninetieth (90th) day prior to such annual meeting or the tenth (10th) day following the day on which public announcement of the date of such meeting is first made by the corporation). In no event shall the public announcement of an adjournment or postponement of an annual meeting commence a new time period (or extend any time period) for the giving of a stockholder's notice as described above. Such stockholder's notice shall set forth: (a) as to each person whom the stockholder proposes to nominate for election as a director (i) all information relating to such person that is required to be disclosed in solicitations of proxies for election of directors in an election contest, or is otherwise required, in each case pursuant to and in accordance with Section 14(a) of the Securities Exchange Act of 1934, as amended (the "Exchange Act") and the rules and regulations promulgated thereunder, and (ii) such person's written consent to being named in the proxy statement as a nominee and to serving as a director if elected; (b) as to any other business that the stockholder proposes to bring before the meeting, a brief description of the business desired to be brought before the meeting, the text of the proposal or business (including the text of any resolutions proposed for consideration and in the event that such business includes a proposal to amend the bylaws of the corporation, the language of the proposed amendment), the reasons for conducting such business at the meeting and any material interest in such business of such stockholder and the beneficial owner, if any, on whose behalf the proposal is made; and (c) as to the stockholder giving the notice and the beneficial owner, if any, on whose behalf the nomination or proposal is made (i) the name and address of such stockholder, as they appear on the corporation's books, and of such beneficial owner, (ii) the class or series and number of shares of capital stock of the corporation which are owned beneficially and of record by such stockholder and such beneficial owner, (iii) a description of any agreement, arrangement or understanding with respect to the nomination or proposal between or among such stockholder and/or such beneficial owner, any of their respective affiliates or associates, and any others acting in concert with any of the foregoing, including, in the case of a nomination, the nominee, (iv) a description of any agreement, arrangement or understanding (including any derivative or short positions, profit interests, options, warrants, convertible securities, stock appreciation or similar rights, hedging transactions, and borrowed or loaned shares) that has been entered into as of the date of the stockholder's notice by, or on behalf of, such stockholder and such beneficial owners, whether or not such instrument or right shall be subject to settlement in underlying shares of capital stock of the corporation, the effect or intent of which is to mitigate loss to, manage risk or benefit of share price changes for, or increase or decrease the voting power of, such stockholder or such beneficial owner, with respect to securities of the corporation, (v) a representation that the stockholder is a holder of record of stock of the corporation entitled to vote at such meeting and intends to appear in person or by proxy at the meeting to propose such business or nomination, (vi) a representation whether the stockholder or the beneficial owner, if any, intends or is part of a group which intends (a) to deliver a proxy statement and/or form of proxy to holders of at least the percentage of the corporation's outstanding capital stock required to approve or adopt the proposal or elect the nominee and/or (b) otherwise to solicit proxies or votes from stockholders in support of such proposal or nomination, and (vii) any other information relating to such stockholder and beneficial owner, if any, required to be disclosed in a proxy statement or other filings required to be made in connection with solicitations of proxies for, as applicable, the proposal and/or for the election of directors in an election contest pursuant to and in accordance with Section 14(a) of the Exchange Act and the rules and regulations promulgated thereunder. The foregoing notice requirements of this Section 1.13 shall be deemed satisfied by a stockholder with respect to business other than a nomination if the stockholder has notified the corporation of his, her or its intention to present a proposal at an annual meeting in compliance with applicable rules and regulations promulgated under the Exchange Act and such stockholder's proposal has been included in a proxy statement that has been prepared by the corporation to solicit proxies for such annual meeting. The corporation may require any proposed nominee to furnish such other information as the corporation may reasonably require to determine the eligibility of such proposed nominee to serve as a director of the corporation.

(3) Notwithstanding anything in the second sentence of paragraph (A)(2) of this Section 1.13 to the contrary, in the event that the number of directors to be elected to the Board of Directors of the corporation at the annual meeting is increased effective after the time period for which nominations would otherwise be due under paragraph (A)(2) of this Section 1.13 and there is no public announcement by the corporation naming the nominees for the additional directorships at least one hundred (100) days prior to the first anniversary of the preceding year's annual meeting, a stockholder's notice required by this Section 1.13 shall also be considered timely, but only with respect to nominees for the additional directorships, if it shall be delivered to the Secretary at the principal executive offices of the corporation not later than the close of business on the tenth (10th) day following the day on which such public announcement is first made by the corporation.

(B) *Special Meetings of Stockholders.* Only such business shall be conducted at a special meeting of stockholders as shall have been brought before the meeting pursuant to the corporation's notice of meeting. Nominations of persons for election to the Board of Directors may be made at a special meeting of stockholders at which directors are to be elected pursuant to the corporation's notice of meeting (1) by or at the direction of the Board of Directors or any committee thereof or (2) provided that the Board of Directors has determined that directors shall be elected at such meeting, by any stockholder of the corporation who is a stockholder of record at the time the notice provided for in this Section 1.13 is delivered to the Secretary of the corporation, who is entitled to vote at the meeting and upon such election and who complies with the notice procedures set forth in this Section 1.13. In the event the corporation calls a special meeting of stockholders for the purpose of electing one or more directors to the Board of Directors, any such stockholder entitled to vote in such election of directors may nominate a person or persons (as the case may be) for election to such position(s) as specified in the corporation's notice of meeting, if the stockholder's notice required by paragraph (A)(2) of this Section 1.13 shall be delivered to the Secretary at the principal executive offices of the corporation not earlier than the close of business on the one hundred twentieth (120th) day prior to such special meeting and not later than the close of business on the later of the ninetieth (90th) day prior to such special meeting or the tenth (10th) day following the day on which public announcement is first made of the date of the special meeting and of the nominees proposed by the Board of Directors to be elected at such meeting. In no event shall the public announcement of an adjournment or postponement of a special meeting commence a new time period (or extend any time period) for the giving of a stockholder's notice as described above. The Board of Directors shall determine the time and place of such special meeting, which shall be held not less than thirty-five (35) nor more than one hundred twenty (120) days after the date of the receipt of the request.

(C) *General.* (1) Except as otherwise expressly provided in any applicable rule or regulation promulgated under the Exchange Act, only such persons who are nominated in accordance with the procedures set forth in this Section 1.13 shall be eligible to be elected at an annual or special meeting of stockholders of the corporation to serve as directors and only such business shall be conducted at a meeting of stockholders as shall have been brought before the meeting in accordance with the procedures set forth in this Section 1.13. Except as otherwise provided by law, the chairman of the meeting shall have the power and duty (a) to determine whether a nomination or any business proposed to be brought before the meeting was made or proposed, as the case may be, in accordance with the procedures set forth in this Section 1.13 (including whether the stockholder or beneficial owner, if any, on whose behalf the nomination or proposal is made solicited (or is part of a group which solicited) or did not so solicit, as the case may be, proxies or votes in support of such stockholder's nominee or proposal in compliance with such stockholder's representation as required by clause (A)(2)(c)(vi) of this Section 1.13) and (b) if any proposed nomination or business was not made or proposed in compliance with this Section 1.13, to declare that such nomination shall be disregarded or that such proposed business shall not be transacted. Notwithstanding the foregoing provisions of this Section 1.13, unless otherwise required by law, if the stockholder (or a qualified representative of the stockholder) does not appear at the annual or special meeting of stockholders of the corporation to present a nomination or proposed business, such nomination shall be disregarded and such proposed business shall not be transacted, notwithstanding that proxies in respect of such vote may have been received by the corporation. For purposes of this Section 1.13, to be considered a qualified representative of the stockholder, a person must be a duly authorized officer, manager or partner of such stockholder or must be authorized by a writing executed by such stockholder or an electronic transmission delivered by such stockholder to act for such stockholder as proxy at the meeting of stockholders and such person must produce such writing or electronic transmission, or a reliable reproduction of the writing or electronic transmission, at the meeting of stockholders.

(2) For purposes of this Section 1.13, “public announcement” shall mean disclosure in a press release reported by the Dow Jones News Service, Associated Press or comparable national news service or in a document publicly filed by the corporation with the Securities and Exchange Commission (the “SEC”) pursuant to Section 13, 14 or 15(d) of the Exchange Act.

(3) Notwithstanding the foregoing provisions of this Section 1.13, a stockholder shall also comply with all applicable requirements of the Exchange Act and the rules and regulations promulgated thereunder with respect to the matters set forth in this Section 1.13; provided however, that any references in these bylaws to the Exchange Act or the rules and regulations promulgated thereunder are not intended to and shall not limit any requirements applicable to nominations or proposals as to any other business to be considered pursuant to this Section 1.13 (including paragraphs (A)(1)(c) and (B) hereof), and compliance with paragraphs (A)(1)(c) and (B) of this Section 1.13 shall be the exclusive means for a stockholder to make nominations or submit other business (other than, as provided in the penultimate sentence of (A)(2), business other than nominations brought properly under and in compliance with Rule 14a-8 of the Exchange Act, as may be amended from time to time). Nothing in this Section 1.13 shall be deemed to affect any rights (a) of stockholders to request inclusion of proposals or nominations in the corporation’s proxy statement pursuant to applicable rules and regulations promulgated under the Exchange Act or (b) of the holders of any series of Preferred Stock to elect directors pursuant to any applicable provisions of the certificate of incorporation.

ARTICLE II
Board of Directors

Section 2.1. *Number; Qualifications.* Subject to the certificate of incorporation, the Board of Directors shall consist of one or more members, the number thereof to be determined from time to time by resolution of the Board of Directors. Directors need not be stockholders.

Section 2.2. *Election; Resignation; Vacancies.* The Board of Directors shall initially consist of the persons named as directors in the certificate of incorporation or elected by the incorporator of the corporation, and each director so elected shall hold office until the first annual meeting of stockholders or until his or her successor is duly elected and qualified. At the first annual meeting of stockholders and at each annual meeting thereafter, the stockholders shall elect directors each of whom shall hold office for a term of one year or until his or her successor is duly elected and qualified, subject to such director's earlier death, resignation, disqualification or removal. Any director may resign at any time upon notice to the corporation. Unless otherwise provided by law or the certificate of incorporation, any newly created directorship or any vacancy occurring in the Board of Directors for any cause may be filled only by a majority of the remaining members of the Board of Directors, although such majority is less than a quorum, or by a plurality of the votes cast at a meeting of stockholders, and each director so elected shall hold office until the expiration of the term of office of the director whom he or she has replaced or until his or her successor is elected and qualified.

Section 2.3. *Regular Meetings.* Regular meetings of the Board of Directors may be held at such places within or without the State of Delaware and at such times as the Board of Directors may from time to time determine.

Section 2.4. *Special Meetings.* Special meetings of the Board of Directors may be held at any time or place within or without the State of Delaware whenever called by (i) the Board of Directors pursuant to a resolution adopted by a majority of the Whole Board; (ii) the chairman of the Board of Directors; or (iii) the chief executive officer or president of the Corporation. Notice of a special meeting of the Board of Directors shall be given by the person or persons calling the meeting at least twenty-four hours before the special meeting.

Section 2.5. *Telephonic Meetings Permitted.* Members of the Board of Directors, or any committee designated by the Board of Directors, may participate in a meeting thereof by means of conference telephone or other communications equipment by means of which all persons participating in the meeting can hear each other, and participation in a meeting pursuant to this by-law shall constitute presence in person at such meeting.

Section 2.6. *Quorum; Vote Required for Action.* At all meetings of the Board of Directors the directors entitled to cast a majority of the votes of the whole Board of Directors shall constitute a quorum for the transaction of business. Except in cases in which the certificate of incorporation, these bylaws or applicable law otherwise provides, a majority of the votes entitled to be cast by the directors present at a meeting at which a quorum is present shall be the act of the Board of Directors.

Section 2.7. *Organization.* Meetings of the Board of Directors shall be presided over by the Chairman of the Board of Directors or, in his or her absence, by a chairman chosen at the meeting. The Secretary shall act as secretary of the meeting, but in his or her absence, the chairman of the meeting may appoint any person to act as secretary of the meeting.

Section 2.8. *Action by Unanimous Consent of Directors.* Unless otherwise restricted by the certificate of incorporation or these bylaws, any action required or permitted to be taken at any meeting of the Board of Directors, or of any committee thereof, may be taken without a meeting if all members of the Board of Directors or such committee, as the case may be, consent thereto in writing or by electronic transmission and the writing or writings or electronic transmissions are filed with the minutes of proceedings of the board or committee in accordance with applicable law.

ARTICLE III
Committees

Section 3.1. *Committees.* The Board of Directors may designate one or more committees, each committee to consist of one or more of the directors of the corporation. The Board of Directors may designate one or more directors as alternate members of any committee, who may replace any absent or disqualified member at any meeting of the committee. In the absence or disqualification of a member of the committee, the member or members thereof present at any meeting and not disqualified from voting, whether or not he, she or they constitute a quorum, may unanimously appoint another member of the Board of Directors to act at the meeting in place of any such absent or disqualified member. Any such committee, to the extent permitted by law and to the extent provided in the resolution of the Board of Directors, shall have and may exercise all the powers and authority of the Board of Directors in the management of the business and affairs of the corporation, and may authorize the seal of the corporation to be affixed to all papers which may require it.

Section 3.2. *Committee Rules.* Unless the Board of Directors otherwise provides, each committee designated by the Board of Directors may make, alter and repeal rules for the conduct of its business. In the absence of such rules each committee shall conduct its business in the same manner as the Board of Directors conducts its business pursuant to Article II of these bylaws.

ARTICLE IV
Officers

Section 4.1. *Officers.* The officers of the corporation shall consist of a Chairman of the Board of Directors, a Chief Executive Officer, a Chief Financial Officer, a President, one or more Vice Presidents, a Secretary, a Treasurer, a Controller and such other officers as the Board of Directors may from time to time determine, each of whom shall be elected by the Board of Directors, each to have such authority, functions or duties as set forth in these bylaws or as determined by the Board of Directors. Each officer shall be chosen by the Board of Directors and shall hold office for such term as may be prescribed by the Board of Directors and until such person's successor shall have been duly chosen and qualified, or until such person's earlier death, disqualification, resignation or removal. The Board of Directors may elect or appoint co-Chairmen of the Board, co-Presidents or co-Chief Executive Officers and, in such case, references in these bylaws to the Chairman of the Board, the President or the Chief Executive Officer shall refer to either such co-Chairman of the Board, co-President or co-Chief Executive Officer, as the case may be.

Section 4.2. *Removal, Resignation and Vacancies.* Any officer of the corporation may be removed, with or without cause, by the Board of Directors, without prejudice to the rights, if any, of such officer under any contract to which it is a party. Any officer may resign at any time upon written notice to the corporation, without prejudice to the rights, if any, of the corporation under any contract to which such officer is a party. If any vacancy occurs in any office of the corporation, the Board of Directors may elect a successor to fill such vacancy for the remainder of the unexpired term and until a successor shall have been duly chosen and qualified.

Section 4.3. *Chairman of the Board of Directors.* The Chairman of the Board of Directors shall be deemed an officer of the corporation, subject to the control of the Board of Directors, and shall report directly to the Board of Directors.

Section 4.4. *Chief Executive Officer.* The Chief Executive Officer shall have general supervision and direction of the business and affairs of the corporation, shall be responsible for corporate policy and strategy, and shall report directly to the Chairman of the Board of Directors. Unless otherwise provided in these bylaws, all other officers of the corporation shall report directly to the Chief Executive Officer or as otherwise determined by the Chief Executive Officer. The Chief Executive Officer shall, if present and in the absence of the Chairman of the Board of Directors, preside at meetings of the stockholders and of the Board of Directors.

Section 4.5. *Chief Financial Officer.* The Chief Financial Officer shall exercise all the powers and perform the duties of the office of the chief financial officer and in general have overall supervision of the financial operations of the corporation. The Chief Financial Officer shall, when requested, counsel with and advise the other officers of the corporation and shall perform such other duties as such officer may agree with the Chief Executive Officer or as the Board of Directors may from time to time determine.

Section 4.6. *President.* The President shall be the chief operating officer of the corporation, with general responsibility for the management and control of the operations of the corporation. The President shall have the power to affix the signature of the corporation to all contracts that have been authorized by the Board of Directors or the Chief Executive Officer. The President shall, when requested, counsel with and advise the other officers of the corporation and shall perform such other duties as such officer may agree with the Chief Executive Officer or as the Board of Directors may from time to time determine.

Section 4.7. *Vice Presidents.* The Vice President shall have such powers and duties as shall be prescribed by his or her superior officer or the Chief Executive Officer. A Vice President shall, when requested, counsel with and advise the other officers of the corporation and shall perform such other duties as such officer may agree with the Chief Executive Officer or as the Board of Directors may from time to time determine.

Section 4.8. *Treasurer.* The Treasurer shall supervise and be responsible for all the funds and securities of the corporation, the deposit of all moneys and other valuables to the credit of the corporation in depositories of the corporation, borrowings and compliance with the provisions of all indentures, agreements and instruments governing such borrowings to which the corporation is a party, the disbursement of funds of the corporation and the investment of its funds, and in general shall perform all of the duties incident to the office of the Treasurer. The Treasurer shall, when requested, counsel with and advise the other officers of the corporation and shall perform such other duties as such officer may agree with the Chief Executive Officer or as the Board of Directors may from time to time determine.

Section 4.9. *Controller*. The Controller shall be the chief accounting officer of the corporation. The Controller shall, when requested, counsel with any advice the other officers of the corporation and shall perform such other duties as such officer may agree with the Chief Executive Officer or the Chief Financial Officer or as the Board of Directors may from time to time determine.

Section 4.10. *Secretary*. The powers and duties of the Secretary are: (i) to act as Secretary at all meetings of the Board of Directors, of the committees of the Board of Directors and of the stockholders and to record the proceedings of such meetings in a book or books to be kept for that purpose; (ii) to see that all notices required to be given by the corporation are duly given and served; (iii) to act as custodian of the seal of the corporation and affix the seal or cause it to be affixed to all certificates of stock of the corporation and to all documents, the execution of which on behalf of the corporation under its seal is duly authorized in accordance with the provisions of these bylaws; (iv) to have charge of the books, records and papers of the corporation and see that the reports, statements and other documents required by law to be kept and filed are properly kept and filed; and (v) to perform all of the duties incident to the office of Secretary. The Secretary shall, when requested, counsel with and advise the other officers of the corporation and shall perform such other duties as such officer may agree with the Chief Executive Officer or as the Board of Directors may from time to time determine.

Section 4.11. *Additional Matters*. The Chief Executive Officer and the Chief Financial Officer of the corporation shall have the authority to designate employees of the corporation to have the title of Vice President, Assistant Vice President, Assistant Treasurer or Assistant Secretary. Any employee so designated shall have the powers and duties determined by the officer making such designation. The persons upon whom such titles are conferred shall not be deemed officers of the corporation unless elected by the Board of Directors.

ARTICLE V

Stock

Section 5.1. *Certificates*. The shares of the corporation shall be represented by certificates, provided that the Board of Directors may provide by resolution or resolutions that some or all of any or all classes or series of stock shall be uncertificated shares. Any such resolution shall not apply to shares represented by a certificate until such certificate is surrendered to the corporation. Every holder of stock represented by certificates shall be entitled to have a certificate signed by or in the name of the corporation by the Chairman of the Board of Directors or the President or a Vice President, and by the Treasurer or an Assistant Treasurer, or the Secretary or an Assistant Secretary, of the corporation certifying the number of shares owned by such holder in the corporation. Any of or all the signatures on the certificate may be a facsimile. In case any officer, transfer agent or registrar who has signed or whose facsimile signature has been placed upon a certificate shall have ceased to be such officer, transfer agent, or registrar before such certificate is issued, it may be issued by the corporation with the same effect as if such person were such officer, transfer agent, or registrar at the date of issue.

Section 5.2. *Lost, Stolen or Destroyed Stock Certificates; Issuance of New Certificates.* The corporation may issue a new certificate of stock in the place of any certificate theretofore issued by it, alleged to have been lost, stolen or destroyed, and the corporation may require the owner of the lost, stolen or destroyed certificate, or such owner's legal representative, to give the corporation a bond sufficient to indemnify it against any claim that may be made against it on account of the alleged loss, theft or destruction of any such certificate or the issuance of such new certificate.

ARTICLE VI
Indemnification and Advancement of Expenses

Section 6.1. *Right to Indemnification.* The corporation shall indemnify and hold harmless, to the fullest extent permitted by applicable law as it presently exists or may hereafter be amended, any person (a "Covered Person") who was or is made or is threatened to be made a party or is otherwise involved in any action, suit or proceeding, whether civil, criminal, administrative or investigative (a "proceeding"), by reason of the fact that he or she, or a person for whom he or she is the legal representative, is or was a director or officer of the corporation or, while a director or officer of the corporation, is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation or of a partnership, joint venture, trust, enterprise or nonprofit entity, including service with respect to employee benefit plans, against all liability and loss suffered and expenses (including attorneys' fees) reasonably incurred by such Covered Person. Notwithstanding the preceding sentence, except as otherwise provided in Section 6.3, the corporation shall be required to indemnify a Covered Person in connection with a proceeding (or part thereof) commenced by such Covered Person only if the commencement of such proceeding (or part thereof) by the Covered Person was authorized in the specific case by the Board of Directors of the corporation.

Section 6.2. *Prepayment of Expenses.* The corporation shall to the fullest extent not prohibited by applicable law pay the expenses (including attorneys' fees) incurred by a Covered Person in defending any proceeding in advance of its final disposition, *provided, however*, that, to the extent required by law, such payment of expenses in advance of the final disposition of the proceeding shall be made only upon receipt of an undertaking by the Covered Person to repay all amounts advanced if it should be ultimately determined that the Covered Person is not entitled to be indemnified under this Article VI or otherwise.

Section 6.3. *Claims.* If a claim for indemnification (following the final disposition of such proceeding) or advancement of expenses under this Article VI is not paid in full within thirty (30) days after a written claim therefor by the Covered Person has been received by the corporation, the Covered Person may file suit to recover the unpaid amount of such claim and, if successful in whole or in part, shall be entitled to be paid the expense of prosecuting such claim to the fullest extent permitted by law. In any such action the corporation shall have the burden of proving that the Covered Person is not entitled to the requested indemnification or advancement of expenses under applicable law.

Section 6.4. *Non-exclusivity of Rights.* The rights conferred on any Covered Person by this Article VI shall not be exclusive of any other rights which such Covered Person may have or hereafter acquire under any statute, provision of the certificate of incorporation, these bylaws, agreement, vote of stockholders or disinterested directors or otherwise.

Section 6.5. *Other Sources.* The corporation's obligation, if any, to indemnify or to advance expenses to any Covered Person who was or is serving at its request as a director, officer, employee or agent of another corporation, partnership, joint venture, trust, enterprise or nonprofit entity shall be reduced by any amount such Covered Person may collect as indemnification or advancement of expenses from such other corporation, partnership, joint venture, trust, enterprise or non-profit enterprise.

Section 6.6. *Amendment or Repeal.* Any right to indemnification or to advancement of expenses of any Covered Person arising hereunder shall not be eliminated or impaired by an amendment to or repeal of these bylaws after the occurrence of the act or omission that is the subject of the civil, criminal, administrative or investigative action, suit or proceeding for which indemnification or advancement of expenses is sought.

Section 6.7. *Other Indemnification and Advancement of Expenses.* This Article VI shall not limit the right of the corporation, to the extent and in the manner permitted by law, to indemnify and to advance expenses to persons other than Covered Persons when and as authorized by appropriate corporate action.

ARTICLE VII
Miscellaneous

Section 7.1. *Fiscal Year.* The fiscal year of the corporation shall be determined by resolution of the Board of Directors.

Section 7.2. *Manner of Notice.* Except as otherwise provided herein or permitted by applicable law, notices to directors and stockholders shall be in writing and delivered personally or mailed to the directors or stockholders at their addresses appearing on the books of the corporation. Without limiting the manner by which notice otherwise may be given effectively to stockholders, and except as prohibited by applicable law, any notice to stockholders given by the corporation under any provision of applicable law, the certificate of incorporation, or these bylaws shall be effective if given by a single written notice to stockholders who share an address if consented to by the stockholders at that address to whom such notice is given. Any such consent shall be revocable by the stockholder by written notice to the corporation. Any stockholder who fails to object in writing to the corporation, within sixty (60) days of having been given written notice by the corporation of its intention to send the single notice permitted under this Section 7.3, shall be deemed to have consented to receiving such single written notice. Notice to directors may be given by telecopier, telephone or other means of electronic transmission.

Section 7.3. *Waiver of Notice of Meetings of Stockholders, Directors and Committees.* Any waiver of notice, given by the person entitled to notice, whether before or after the time stated therein, shall be deemed equivalent to notice. Attendance of a person at a meeting shall constitute a waiver of notice of such meeting, except when the person attends a meeting for the express purpose of objecting, at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened. Neither the business to be transacted at nor the purpose of any regular or special meeting of the stockholders, directors, or members of a committee of directors need be specified in a waiver of notice.

Section 7.4. *Form of Records.* Any records maintained by the corporation in the regular course of its business, including its stock ledger, books of account, and minute books, may be kept on, or by means of, or be in the form of, any information storage device or method, provided that the records so kept can be converted into clearly legible paper form within a reasonable time.

Section 7.5. *Amendment of Bylaws.* These bylaws may be altered, amended or repealed, and new bylaws made, by the Board of Directors or by the affirmative vote of sixty-six and two-thirds percent of the outstanding voting power of the corporation.

CERTIFICATE OF SECRETARY

I, the undersigned, do hereby certify:

1. That I am the duly elected and acting Secretary of Blue Water Vaccines, Inc., a Delaware corporation (the "Corporation"); and
2. That the foregoing Bylaws, comprising fifteen (15) pages, constitute the Bylaws of the Corporation as duly adopted and approved by Unanimous Written Consent of the Board of Directors effective as of , 2021.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed the seal of the Corporation this day of , 2021.

/s/

, Secretary

**BLUE WATER VACCINES INC.
2019 EQUITY INCENTIVE PLAN**

**ADOPTED BY THE BOARD OF DIRECTORS: July 1, 2019
APPROVED BY THE STOCKHOLDERS: July 1, 2019**

1. GENERAL.

(a) **Eligible Stock Award Recipients.** Employees, Directors, Officers and Consultants of the Company and its Subsidiaries are eligible to receive Stock Awards.

(b) **Available Stock Awards.** The Plan provides for the grant of the following types of Stock Awards:

- (i) Incentive Stock Options,
- (ii) Nonstatutory Stock Options,
- (iii) Stock Appreciation Rights,
- (iv) Restricted Stock Awards,
- (v) Restricted Stock Unit Awards, and
- (vi) Other Stock Awards.

(c) **Purpose.** The Plan, through the granting of Stock Awards, is intended to help the Company secure and retain the services of eligible award recipients, provide incentives for such persons to exert maximum efforts for the success of the Company and its Subsidiaries and provide a means by which the eligible recipients may benefit from increases in value of the Common Stock of the Company.

2. ADMINISTRATION.

(a) **Administration by Board.** The Board of Directors of the Company will administer the Plan. The Board may delegate administration of the Plan to a Committee or Committees, as provided in Section 2(c).

(b) **Powers of Board.** The Board will have the power, subject to, and within the limitations of, the express provisions of the Plan:

(i) To determine (A) who will be granted Stock Awards; (B) when and how each Stock Award will be granted; (C) what type of Stock Award will be granted; (D) the provisions of each Stock Award (which need not be identical), including when a person will be permitted to exercise or otherwise receive cash or Common Stock under the Stock Award; (E) the number of shares of Common Stock subject to a Stock Award; and (F) the Fair Market Value applicable to a Stock Award.

(ii) To construe and interpret the Plan and Stock Awards granted under it, and to establish, amend and revoke rules and regulations for administration of the Plan and Stock Awards. The Board, in the exercise of these powers, may correct any defect, omission or inconsistency in the Plan or in any Grant Agreement, in a manner and to the extent it will deem necessary or expedient to make the Plan or Stock Award fully effective.

(iii) To settle all controversies regarding the Plan and Stock Awards granted under it.

(iv) To accelerate, in whole or in part, the time at which a Stock Award may be exercised or vest (or at which cash or shares of Common Stock may be issued).

(v) To suspend or terminate the Plan at any time. Except as otherwise provided in the Plan or a Grant Agreement, suspension or termination of the Plan will not impair a Participant's rights under the Participant's then-outstanding Stock Award without the Participant's written consent except as provided in subsection (viii) below.

(vi) To amend the Plan in any respect the Board deems necessary or advisable, including, without limitation, by adopting amendments relating to Incentive Stock Options and certain nonqualified deferred compensation under Section 409A of the Code and/or to make the Plan or Stock Awards granted under the Plan compliant with the requirements for Incentive Stock Options or exempt from or compliant with the requirements for nonqualified deferred compensation under Section 409A of the Code, subject to the limitations, if any, of applicable law. However, if required by applicable law, and except as provided in Section 9(a) relating to Capitalization Adjustments, the Company will seek stockholder approval of any amendment of the Plan that (A) materially increases the number of shares of Common Stock available for issuance under the Plan, (B) materially expands the class of individuals eligible to receive Stock Awards under the Plan, (C) materially increases the benefits accruing to Participants under the Plan, (D) materially reduces the price at which shares of Common Stock may be issued or purchased under the Plan, (E) materially extends the term of the Plan, or (F) materially expands the types of Stock Awards available for issuance under the Plan. Except as provided in the Plan (including subsection (viii) below) or a Grant Agreement, no amendment of the Plan will impair a Participant's rights under an outstanding Stock Award unless (1) the Company requests the consent of the affected Participant, and (2) such Participant consents in writing.

(vii) To submit any amendment to the Plan for stockholder approval, including, but not limited to, amendments to the Plan intended to satisfy the requirements of Section 422 of the Code regarding Incentive Stock Options.

(viii) To approve forms of Grant Agreements for use under the Plan and to amend the terms of any one or more Stock Awards, including, but not limited to, amendments to provide terms more favorable to the Participant than previously provided in the Grant Agreement, subject to any specified limits in the Plan that are not subject to Board discretion; *provided however*, that a Participant's rights under any Stock Award will not be impaired by any such amendment unless (A) the Company requests the consent of the affected Participant, and (B) such Participant consents in writing. Notwithstanding the foregoing, (1) a Participant's rights will not be deemed to have been impaired by any such amendment if the Board, in its sole discretion, determines that the amendment, taken as a whole, does not materially impair the Participant's rights, and (2) subject to the limitations of applicable law, if any, the Board may amend the terms of any one or more Stock Awards without the affected Participant's consent (A) to maintain the qualified status of the Stock Award as an Incentive Stock Option under Section 422 of the Code; (B) to clarify the manner of exemption from, or to bring the Stock Award into compliance with, Section 409A of the Code; or (C) to comply with other applicable laws.

(ix) Generally, to exercise such powers and to perform such acts as the Board deems necessary or expedient to promote the best interests of the Company and that are not in conflict with the provisions of the Plan or Stock Awards.

(x) To adopt such procedures and sub-plans as are necessary or appropriate to permit participation in the Plan by Employees, Directors or Consultants who are foreign nationals or employed outside the United States (provided that Board approval will not be necessary for immaterial modifications to the Plan or any Grant Agreement that are required for compliance with the laws of the relevant foreign jurisdiction).

(xi) To effect, with the consent of any adversely affected Participant, (A) the reduction of the exercise, purchase or strike price of any outstanding Stock Award; (B) the cancellation of any outstanding Stock Award and the grant in substitution therefor of a new (1) Option or SAR, (2) Restricted Stock Award, (3) Restricted Stock Unit Award, (4) Other Stock Award, (5) cash and/or (6) other valuable consideration determined by the Board, in its sole discretion, with any such substituted award (x) covering the same or a different number of shares of Common Stock as the cancelled Stock Award and (y) granted under the Plan or another equity or compensatory plan of the Company; or (C) any other action that is treated as a repricing under generally accepted accounting principles.

(c) **Delegation to Committee.** The Board may delegate some or all of the administration of the Plan to a Committee or Committees. If administration of the Plan is delegated to a Committee, the Committee will have, in connection with the administration of the Plan, the powers theretofore possessed by the Board that have been delegated to the Committee, including the power to delegate to a subcommittee of the Committee any of the administrative powers the Committee is authorized to exercise (and references in this Plan to the Board will thereafter be to the Committee or subcommittee). Any delegation of administrative powers will be reflected in resolutions, not inconsistent with the provisions of the Plan, adopted from time to time by the Board or Committee (as applicable). The Committee may, at any time, abolish the subcommittee and/or revert in the Committee any powers delegated to the subcommittee. The Board may retain the authority to concurrently administer the Plan with the Committee and may, at any time, revert in the Board some or all of the powers previously delegated.

(d) **Delegation to an Officer.** The Board may delegate to one (1) or more Officers the authority to do one or both of the following: (i) designate Employees who are not Officers to be recipients of Options and SARs (and, to the extent permitted by applicable law, other Stock Awards), and (ii) determine the number of shares of Common Stock to be subject to such Stock Awards granted to such Employees; *provided, however*, that the Board resolutions regarding such delegation will specify the total number of shares of Common Stock that may be subject to the Stock Awards granted by such Officer and that such Officer may not grant a Stock Award to himself or herself. Any such Stock Awards will be granted on the form of Grant Agreement most recently approved for use by the Committee or the Board, unless otherwise provided in the resolutions approving the delegation authority. The Board may not delegate authority to an Officer who is acting solely in the capacity of an Officer (and not also as a Director) to determine the Fair Market Value pursuant to Section 13(t) below.

(e) **Effect of Board's Decision.** All determinations, interpretations and constructions made by the Board in good faith will not be subject to review by any person and will be final, binding and conclusive on all persons.

3. SHARES SUBJECT TO THE PLAN.

(a) **Share Reserve.**

(i) Subject to Section 9(a) relating to Capitalization Adjustments, the aggregate number of shares of Common Stock that may be issued pursuant to Stock Awards from and after the Effective Date will not exceed (A) 350,000 shares, the number of shares available for issuance under the Plan's terms plus (B) any shares that revert back to the Plan pursuant to Section 3(b), if any, which become available for grant under this Plan from time to time (such aggregate number of shares described in (A) and (B) above, the "**Share Reserve**").

(ii) For clarity, the Share Reserve in this Section 3(a) is a limitation on the number of shares of Common Stock that may be issued pursuant to the Plan. Accordingly, this Section 3(a) does not limit the granting of Stock Awards except as provided in Section 7(a).

(b) Reversion of Shares to the Share Reserve. If a Stock Award or any portion thereof (i) expires or otherwise terminates without all of the shares covered by such Stock Award having been issued or (ii) is settled in cash (*i.e.*, the Participant receives cash rather than stock), such expiration, termination or settlement will not reduce (or otherwise offset) the number of shares of Common Stock that may be available for issuance under the Plan. If any shares of Common Stock issued pursuant to a Stock Award are forfeited back to or repurchased by the Company because of the failure to meet a contingency or condition required to vest such shares in the Participant, then the shares that are forfeited or repurchased will revert to and again become available for issuance under the Plan. Any shares reacquired by the Company in satisfaction of tax withholding obligations on a Stock Award or as consideration for the exercise or purchase price of a Stock Award will again become available for issuance under the Plan.

(c) Incentive Stock Option Limit. Subject to the Share Reserve and Section 9(a) relating to Capitalization Adjustments, the aggregate maximum number of shares of Common Stock that may be issued pursuant to the exercise of Incentive Stock Options will be 350,000 shares of Common Stock.

(d) Source of Shares. The stock issuable under the Plan will be shares of authorized but unissued or reacquired Common Stock, including shares repurchased by the Company on the open market or otherwise.

4. ELIGIBILITY.

(a) **Eligibility for Specific Stock Awards.** Incentive Stock Options may be granted only to employees of the Company or a “parent corporation” or “subsidiary corporation” thereof (as such terms are defined in Sections 424(e) and 424(f) of the Code). Stock Awards other than Incentive Stock Options may be granted to Employees, Directors and Consultants; *provided, however*, that Stock Awards may not be granted to Employees, Directors and Consultants who are providing Continuous Service only to any “parent” of the Company, as such term is defined in SEC Rule 405, unless (i) the stock underlying such Stock Awards is treated as “service recipient stock” under Section 409A of the Code (for example, because the Stock Awards are granted pursuant to a corporate transaction such as a spin off transaction), or (ii) the Company, in consultation with its legal counsel, has determined that such Stock Awards are otherwise exempt from or alternatively comply with the distribution requirements of Section 409A of the Code.

(b) **Ten Percent Stockholders.** A Ten Percent Stockholder of the Company will not be granted an Incentive Stock Option unless the exercise price of such Option is at least one hundred ten percent (110%) of the Fair Market Value on the date of grant and the Option is not exercisable after the expiration of five (5) years from the date of grant.

(c) **Consultants.** A Consultant will not be eligible for the grant of a Stock Award if, at the time of grant, either the offer or sale of the Company’s securities to such Consultant is not exempt under SEC Rule 701 because of the nature of the services that the Consultant is providing to the Company, because the Consultant is not a natural person, or because of any other provision of Rule SEC 701, unless the Company determines that such grant need not comply with the requirements of SEC Rule 701 and will satisfy another exemption under the Securities Act as well as comply with the securities laws of all other relevant jurisdictions.

5. PROVISIONS RELATING TO OPTIONS AND STOCK APPRECIATION RIGHTS.

Each Option or SAR will be in such form and will contain such terms and conditions as the Board deems appropriate. All Options will be separately designated Incentive Stock Options or Nonstatutory Stock Options at the time of grant, and, if certificates are issued, a separate certificate or certificates will be issued for shares of Common Stock purchased on exercise of each type of Option. If an Option is not specifically designated as an Incentive Stock Option, or if an Option is designated as an Incentive Stock Option but some portion or all of the Option fails to qualify as an Incentive Stock Option under the applicable rules, then the Option (or portion thereof) will be a Nonstatutory Stock Option. The provisions of separate Options or SARs need not be identical; *provided, however*, that each Grant Agreement will conform to (through incorporation of provisions hereof by reference in the applicable Grant Agreement or otherwise) the substance of each of the following provisions:

(a) **Term.** Subject to the provisions of Section 4(b) regarding Ten Percent Stockholders, no Option or SAR will be exercisable after the expiration of ten (10) years from the date of its grant or such shorter period specified in the Grant Agreement.

(b) **Exercise Price.** Subject to the provisions of Section 4(b) regarding Ten Percent Stockholders, the exercise or strike price of each Option or SAR will be not less than one hundred percent (100%) of the Fair Market Value of the Common Stock subject to the Option or SAR on the date the Stock Award is granted. Notwithstanding the foregoing, an Option or SAR may be granted with an exercise or strike price lower than one hundred percent (100%) of the Fair Market Value of the Common Stock subject to the Stock Award if such Stock Award is granted pursuant to an assumption of or substitution for another option or stock appreciation right pursuant to a Corporate Transaction and in a manner consistent with the provisions of Section 409A of the Code and, if applicable, Section 424(a) of the Code. Each SAR will be denominated in shares of Common Stock equivalents.

(c) **Purchase Price for Options.** The purchase price of Common Stock acquired pursuant to the exercise of an Option may be paid, to the extent permitted by applicable law and as determined by the Board in its sole discretion, by any combination of the methods of payment set forth below. The Board will have the authority to grant Options that do not permit all of the following methods of payment (or otherwise restrict the ability to use certain methods) and to grant Options that require the consent of the Company to use a particular method of payment. The permitted methods of payment are as follows:

(i) by cash, check, bank draft or money order payable to the Company;

(ii) pursuant to a program developed under Regulation T as promulgated by the Federal Reserve Board that, prior to the issuance of the stock subject to the Option, results in either the receipt of cash (or check) by the Company or the receipt of irrevocable instructions to pay the aggregate exercise price to the Company from the sales proceeds;

(iii) by delivery to the Company (either by actual delivery or attestation) of shares of Common Stock held by the person for at least six (6) months; or

(iv) if an Option is a Nonstatutory Stock Option, by a “net exercise” arrangement pursuant to which the Company will reduce the number of shares of Common Stock issuable upon exercise by the largest whole number of shares with a Fair Market Value that does not exceed the aggregate exercise price; *provided, however*, that the Company will accept a cash or other payment from the Participant to the extent of any remaining balance of the aggregate exercise price not satisfied by such reduction in the number of whole shares to be issued. Shares of Common Stock will no longer be subject to an Option and will not be exercisable thereafter to the extent that (A) shares issuable upon exercise are used to pay the exercise price pursuant to the “net exercise,” (B) shares are delivered to the Participant as a result of such exercise, and (C) shares are withheld to satisfy tax withholding obligations; or

(v) in any other form of legal consideration that may be acceptable to the Board and specified in the applicable Grant Agreement.

(d) **Exercise and Payment of a SAR.** At the discretion of the Board, any Participant granted an Option may also be granted SARs in tandem with that Option, provided that the number of shares covered by the SARs shall not exceed the number of shares subject to the Option, and that the strike price for the SARs shall be equal to the exercise price for such Option. If SARs have been granted to a Participant, the terms of such SARs shall be set forth in the Participant’s Grant Agreement. To exercise any outstanding SAR, the Participant must provide written notice of exercise to the Company in compliance with the provisions of the Grant Agreement evidencing such SAR. The appreciation distribution payable to the Participant upon the exercise of a SAR will be an amount equal to the excess of (A) the aggregate Fair Market Value (on the date of the exercise of the SAR) of a number of shares of Common Stock equal to the number of Common Stock equivalents in which the Participant is vested under such SAR, and with respect to which the Participant is exercising the SAR on such date, over (B) the aggregate strike price of the number of Common Stock equivalents with respect to which the Participant is exercising the SAR on such date. The appreciation distribution may be paid in Common Stock, in cash, in any combination of the two or in any other form of consideration, as determined by the Board and contained in the Grant Agreement evidencing such SAR.

(e) **Transferability of Options and SARs.** The Board may, in its sole discretion, impose such limitations on the transferability of Options and SARs as the Board will determine. In the absence of such a determination by the Board to the contrary, the following restrictions on the transferability of Options and SARs will apply:

(i) **Restrictions on Transfer.** An Option or SAR will not be transferable except by will or by the laws of descent and distribution (and pursuant to subsections (ii) and (iii) below), and will be exercisable during the lifetime of the Participant only by the Participant. The Board may permit transfer of the Option or SAR in a manner that is not prohibited by applicable tax and securities laws. Except as explicitly provided herein, neither an Option nor a SAR may be transferred for consideration.

(ii) **Domestic Relations Orders.** Subject to the approval of the Board or a duly authorized Officer, an Option or SAR may be transferred pursuant to the terms of a domestic relations order, official marital settlement agreement or other divorce or separation instrument as permitted by Treasury Regulation 1.421-1(b)(2). If an Option is an Incentive Stock Option, such Option may be deemed to be a Nonstatutory Stock Option as a result of such transfer.

(iii) **Beneficiary Designation.** Subject to the approval of the Board or a duly authorized Officer, a Participant may, by delivering written notice to the Company, in a form approved by the Company (or the designated broker), designate a third party who, upon the death of the Participant, will thereafter be entitled to exercise the Option or SAR and receive the Common Stock or other consideration resulting from such exercise. In the absence of such a designation, upon the death of the Participant, the executor or administrator of the Participant's estate will be entitled to exercise the Option or SAR and receive the Common Stock or other consideration resulting from such exercise. However, the Company may prohibit designation of a beneficiary at any time, including due to any conclusion by the Company that such designation would be inconsistent with the provisions of applicable laws.

(f) **Vesting Generally.** The total number of shares of Common Stock subject to an Option or SAR may vest and become exercisable in periodic installments that may or may not be equal. The Option or SAR may be subject to such other terms and conditions on the time or times when it may or may not be exercised (which may be based on the satisfaction of performance goals or other criteria) as the Board may deem appropriate. The vesting provisions of individual Options or SARs may vary. The provisions of this Section 5(f) are subject to any Option or SAR provisions governing the minimum number of shares of Common Stock as to which an Option or SAR may be exercised.

(g) **Termination of Continuous Service.** Except as otherwise provided in Subsections 5(h), (i), (j) or (k) below, or in the terms of the applicable Grant Agreement or other agreement between the Participant and the Company, if a Participant's Continuous Service terminates (other than for Cause), the Participant may exercise the Participant's Option or SAR (to the extent that the Participant was entitled to exercise such Option or SAR as of the date of termination of Continuous Service) within the period of time ending on the earlier of (i) the date which occurs three (3) months following the termination of the Participant's Continuous Service (or such longer or shorter period specified in the applicable Grant Agreement, which period will not be less than thirty (30) days if necessary to comply with applicable laws unless such termination is for Cause) or (ii) the expiration of the term of the Option or SAR as set forth in the Grant Agreement. If, after termination of Continuous Service, the Participant does not exercise the Participant's Option or SAR within the applicable time frame, the Option or SAR (as applicable) will terminate.

(h) **Termination for Cause.** Except as explicitly provided otherwise in a Participant's Grant Agreement or other individual written agreement between the Company or any Subsidiary and the Participant, if a Participant's Continuous Service is terminated for Cause, the Option or SAR will terminate immediately upon such Participant's termination of Continuous Service, and the Participant will be prohibited from exercising the Participant's Option or SAR from and after the time of such termination of Continuous Service.

(i) **Extension of Termination Date.** Except as otherwise provided in the applicable Grant Agreement or other agreement between the Participant and the Company, if the exercise of an Option or SAR following the termination of the Participant's Continuous Service (other than for Cause and other than upon the Participant's death or Disability) would be prohibited at any time solely because the issuance of shares of Common Stock would violate the registration requirements under the Securities Act, then the Option or SAR will terminate on the earlier of (i) the expiration of a total period of time (that need not be consecutive) equal to the applicable post termination exercise period after the termination of the Participant's Continuous Service during which the exercise of the Option or SAR would not be in violation of such registration requirements, or (ii) the expiration of the term of the Option or SAR as set forth in the applicable Grant Agreement. In addition, unless otherwise provided in a Participant's Grant Agreement, if the sale of any Common Stock received upon exercise of an Option or SAR following the termination of the Participant's Continuous Service (other than for Cause) would violate the Company's insider trading policy, then the Option or SAR will terminate on the earlier of (i) the expiration of a period of time (that need not be consecutive) equal to the applicable post-termination exercise period after the termination of the Participant's Continuous Service during which the sale of the Common Stock received upon exercise of the Option or SAR would not be in violation of the Company's insider trading policy, or (ii) the expiration of the term of the Option or SAR as set forth in the applicable Grant Agreement.

(j) **Disability of Participant.** Except as otherwise provided in the applicable Grant Agreement or other agreement between the Participant and the Company or a Subsidiary, if a Participant's Continuous Service terminates as a result of the Participant's Disability, the Participant may exercise the Participant's Option or SAR (to the extent that the Participant was entitled to exercise such Option or SAR as of the date of termination of Continuous Service), but only within such period of time ending on the earlier of (i) the date which occurs twelve (12) months following such termination of Continuous Service (or such shorter period specified in the Grant Agreement, which period will not be less than six (6) months if necessary to comply with applicable laws), or (ii) the expiration of the term of the Option or SAR as set forth in the Grant Agreement. If, after termination of Continuous Service, the Participant does not exercise the Participant's Option or SAR within the applicable time frame, the Option or SAR (as applicable) will terminate.

(k) **Death of Participant.** Except as otherwise provided in the applicable Grant Agreement, if (i) a Participant's Continuous Service terminates as a result of the Participant's death, or (ii) the Participant dies within the period (if any) specified in the Grant Agreement for exercisability after the termination of the Participant's Continuous Service (for a reason other than death), then the Option or SAR may be exercised (to the extent the Participant was entitled to exercise such Option or SAR as of the date of death) by the Participant's estate, by a person who acquired the right to exercise the Option or SAR by bequest or inheritance or by a person designated to exercise the Option or SAR upon the Participant's death, but only within the period ending on the earlier of (i) the date which occurs twelve (12) months following the date of death (or such longer or shorter period specified in the Grant Agreement, which period will not be less than six (6) months if necessary to comply with applicable laws), or (ii) the expiration of the term of such Option or SAR as set forth in the Grant Agreement. If, after the Participant's death, the Option or SAR is not exercised within the applicable time frame, the Option or SAR (as applicable) will terminate.

(l) **Non-Exempt Employees.** If an Option or SAR is granted to an Employee who is a non-exempt employee for purposes of the Fair Labor Standards Act of 1938, as amended, the Option or SAR will not be first exercisable for any shares of Common Stock until at least six (6) months following the date of grant of the Option or SAR (although the Stock Award may vest prior to such date). Consistent with the provisions of the Worker Economic Opportunity Act, (i) if such non-exempt Employee dies or suffers a Disability, (ii) upon a Corporate Transaction in which such Option or SAR is not assumed, continued, or substituted, (iii) upon a Change in Control, or (iv) upon the Participant's retirement (as such term may be defined in the Participant's Grant Agreement, in another agreement between the Participant and the Company or a Subsidiary, or, if no such definition, in accordance with the then current employment policies and guidelines of the Company or Subsidiary), the vested portion of any Options and SARs may be exercised earlier than six (6) months following the date of grant. The foregoing provision is intended to operate so that any income derived by a non-exempt employee in connection with the exercise or vesting of an Option or SAR will be exempt from the employee's regular rate of pay. To the extent permitted and/or required for compliance with the Worker Economic Opportunity Act to ensure that any income derived by a non-exempt employee in connection with the exercise, vesting or issuance of any shares under any other Stock Award will be exempt from the employee's regular rate of pay, the provisions of this Section 5(l) will apply to all Stock Awards and are hereby incorporated by reference into such Grant Agreements.

(m) **Stockholder Agreements.** Notwithstanding any other provisions of this Plan or any Grant Agreement to the contrary, before any shares of Common Stock may be issued to a Participant pursuant to the exercise of an Option or SAR, the Participant shall be required to take any and all steps which may be requested by the Company to become a party bound by the terms of the Stockholder Agreements and any and all shares issued to the Participant shall be issued subject to all of the provisions of the Stockholder Agreements, including but not limited to those provisions of the Stockholder Agreements which may (A) allow the Company to elect to repurchase all or any part of the shares of Common Stock acquired by the Participant pursuant to this Plan, or (B) allow the Company to elect to exercise a right of first refusal with respect to any shares of Common Stock issued to the Participant pursuant to this Plan.

6. PROVISIONS OF STOCK AWARDS OTHER THAN OPTIONS AND SARS.

(a) **Restricted Stock Awards.** Each Restricted Stock Grant Agreement will be in such form and will contain such terms and conditions as the Board deems appropriate. To the extent consistent with the Company's bylaws, at the Board's election, shares of Common Stock underlying a Restricted Stock Award may be (i) held in book entry form subject to the Company's instructions until any restrictions relating to the Restricted Stock Award lapse; or (ii) evidenced by a certificate, which certificate will be held in such form and manner as determined by the Board. The terms and conditions of Restricted Stock Grant Agreements may change from time to time, and the terms and conditions of separate Restricted Stock Grant Agreements need not be identical. Each Restricted Stock Grant Agreement will conform to (through incorporation of the provisions hereof by reference in the agreement or otherwise) the substance of each of the following provisions:

(i) **Consideration.** A Restricted Stock Award may be awarded in consideration for (A) cash, check, bank draft or money order payable to the Company, (B) past services to the Company or a Subsidiary, or (C) any other form of legal consideration that may be acceptable to the Board, in its sole discretion, and permissible under applicable law.

(ii) **Vesting.** Shares of Common Stock issued under the Restricted Stock Grant Agreement may be subject to forfeiture to the Company in accordance with a vesting schedule to be determined by the Board.

(iii) **Termination of Participant's Continuous Service.** If a Participant's Continuous Service terminates, the Company may receive through a forfeiture condition or a repurchase right, any or all of the shares of Common Stock held by the Participant as of the date of termination of Continuous Service under the terms of the Restricted Stock Grant Agreement.

(iv) **Transferability.** Rights to acquire shares of Common Stock under the Restricted Stock Grant Agreement will be transferable by the Participant only upon such terms and conditions as are set forth in the Restricted Stock Grant Agreement, as the Board will determine in its sole discretion, so long as Common Stock awarded under the Restricted Stock Grant Agreement remains subject to the terms of the Restricted Stock Agreement.

(v) **Dividends.** A Restricted Stock Grant Agreement may provide that any dividends paid on Restricted Stock will be subject to the same vesting and forfeiture restrictions as apply to the shares subject to the Restricted Stock Award to which they relate.

(b) **Restricted Stock Unit Awards.** Each Restricted Stock Unit Grant Agreement will be in such form and will contain such terms and conditions as the Board deems appropriate. The terms and conditions of Restricted Stock Unit Grant Agreements may change from time to time, and the terms and conditions of separate Restricted Stock Unit Grant Agreements need not be identical. Each Restricted Stock Unit Grant Agreement will conform to (through incorporation of the provisions hereof by reference in the Agreement or otherwise) the substance of each of the following provisions:

(i) **Consideration.** At the time of grant of a Restricted Stock Unit Award, the Board will determine the consideration, if any, to be paid by the Participant upon delivery of each share of Common Stock subject to the Restricted Stock Unit Award. The consideration to be paid (if any) by the Participant for each share of Common Stock subject to a Restricted Stock Unit Award may be paid in any form of legal consideration that may be acceptable to the Board, in its sole discretion, and permissible under applicable law.

(ii) **Vesting.** At the time of the grant of a Restricted Stock Unit Award, the Board may impose such restrictions on or conditions to the vesting of the Restricted Stock Unit Award as it, in its sole discretion, deems appropriate.

(iii) **Payment.** A Restricted Stock Unit Award may be settled by the delivery of shares of Common Stock, their cash equivalent, any combination thereof or in any other form of consideration, as determined by the Board and contained in the Restricted Stock Unit Grant Agreement.

(iv) **Additional Restrictions.** At the time of the grant of a Restricted Stock Unit Award, the Board, as it deems appropriate, may impose such restrictions or conditions that delay the delivery of the shares of Common Stock (or their cash equivalent) subject to a Restricted Stock Unit Award to a time after the vesting of such Restricted Stock Unit Award.

(v) **Dividend Equivalents.** Dividend equivalents may be credited in respect of shares of Common Stock covered by a Restricted Stock Unit Award, as determined by the Board and contained in the Restricted Stock Unit Grant Agreement. At the sole discretion of the Board, such dividend equivalents may be converted into additional shares of Common Stock covered by the Restricted Stock Unit Award in such manner as determined by the Board. Any additional shares covered by the Restricted Stock Unit Award credited by reason of such dividend equivalents will be subject to all of the same terms and conditions of the underlying Restricted Stock Unit Grant Agreement to which they relate.

(vi) **Termination of Participant's Continuous Service.** Except as otherwise provided in the applicable Restricted Stock Unit Grant Agreement, such portion of the Restricted Stock Unit Award that has not vested will be forfeited upon the Participant's termination of Continuous Service.

(vii) **Compliance with Section 409A of the Code.** Notwithstanding anything to the contrary set forth herein, any Restricted Stock Unit Award granted under the Plan that is not exempt from the requirements of Section 409A of the Code shall contain such provisions so that such Restricted Stock Unit Award will comply with the requirements of Section 409A of the Code. Such restrictions, if any, shall be determined by the Board and contained in the Restricted Stock Unit Grant Agreement evidencing such Restricted Stock Unit Award. For example, such restrictions may include, without limitation, a requirement that any Common Stock that is to be issued in a year following the year in which the Restricted Stock Unit Award vests must be issued in accordance with a fixed pre-determined schedule.

(c) **Other Stock Awards.** Other forms of Stock Awards valued in whole or in part by reference to, or otherwise based on, Common Stock, including the appreciation in value thereof (e.g., options or stock rights with an exercise price or strike price less than one hundred percent (100%) of the Fair Market Value of the Common Stock at the time of grant) may be granted either alone or in addition to Stock Awards provided for under Section 5 and the preceding provisions of this Section 6. Subject to the provisions of the Plan, the Board will have sole and complete authority to determine the persons to whom and the time or times at which such Other Stock Awards will be granted, the number of shares of Common Stock (or the cash equivalent thereof) to be granted pursuant to such Other Stock Awards and all other terms and conditions of such Other Stock Awards.

7. COVENANTS OF THE COMPANY.

(a) **Availability of Shares.** The Company will keep available at all times the number of shares of Common Stock reasonably required to satisfy then-outstanding Stock Awards.

(b) **Securities Law Compliance.** The Company will seek to obtain from each regulatory commission or agency having jurisdiction over the Plan such authority as may be required to grant Stock Awards and to issue and sell shares of Common Stock upon exercise of the Stock Awards; *provided, however*, that this undertaking will not require the Company to register under the Securities Act the Plan, any Stock Award or any Common Stock issued or issuable pursuant to any such Stock Award. If, after reasonable efforts and at a reasonable cost, the Company is unable to obtain from any such regulatory commission or agency the authority that counsel for the Company deems necessary for the lawful issuance and sale of Common Stock under the Plan, the Company will be relieved from any liability for failure to issue and sell Common Stock upon exercise of such Stock Awards unless and until such authority is obtained. A Participant will not be eligible for the grant of a Stock Award or the subsequent issuance of cash or Common Stock pursuant to the Stock Award if such grant or issuance would be in violation of any applicable securities law.

(c) **No Obligation to Notify, Minimize or Guarantee Taxes.** The Company will have no duty or obligation to any Participant to advise such holder as to the time or manner of exercising such Stock Award. Furthermore, the Company will have no duty or obligation to warn or otherwise advise such holder of a pending termination or expiration of a Stock Award or a possible period in which the Stock Award may not be exercised. The Company has no duty or obligation to minimize the tax consequences of a Stock Award to the holder of such Stock Award. Notwithstanding anything else contained in the Plan, neither the Company, the Board nor the Committee makes any commitment or guarantee that any federal, state or local tax treatment will apply or be available with respect to any Stock Award and assumes no liability whatsoever for the tax consequences to the holder of such Stock Award, whether under Section 83, 409A or any other tax provisions of the Code.

8. MISCELLANEOUS.

(a) **Use of Proceeds from Sales of Common Stock.** Proceeds from the sale of shares of Common Stock pursuant to Stock Awards will constitute general funds of the Company.

(b) **Corporate Action Constituting Grant of Stock Awards.** Corporate action constituting a grant by the Company of a Stock Award to any Participant will be deemed completed as of the date of such corporate action, unless otherwise determined by the Board, regardless of when the instrument, certificate, or letter evidencing the Stock Award is communicated to, or actually received or accepted by, the Participant. In the event that the corporate records (e.g., Board consents, resolutions or minutes) documenting the corporate action constituting the grant contain terms (e.g., exercise price, vesting schedule or number of shares) that are inconsistent with those in the Grant Agreement as a result of a clerical error in the papering of the Grant Agreement, the corporate records will control and the Participant will have no legally binding right to the incorrect term in the Grant Agreement.

(c) **Stockholder Rights.** No Participant will be deemed to be the holder of, or to have any of the rights of a holder with respect to, any shares of Common Stock subject to a Stock Award unless and until (i) such Participant has satisfied all requirements for exercise of, or the issuance of shares of Common Stock under, the Stock Award pursuant to its terms, and (ii) the issuance of the Common Stock subject to the Stock Award has been entered into the books and records of the Company.

(d) **No Employment or Other Service Rights.** Nothing in the Plan, any Grant Agreement or any other instrument executed thereunder or in connection with any Stock Award granted pursuant thereto will confer upon any Participant any right to continue to be employed by or provide services to the Company or a Subsidiary in the capacity in effect at the time the Stock Award was granted or will affect the right of the Company or the Subsidiary to terminate (i) the employment of an Employee with or without notice and with or without Cause, (ii) the service of a Consultant pursuant to the terms of such Consultant's agreement with the Company or Subsidiary, or (iii) the service of a Director pursuant to the bylaws of the Company, and any applicable provisions of the corporate law of the state in which the Company or the Subsidiary is incorporated, as the case may be.

(e) **Change in Time Commitment.** In the event a Participant's regular level of time commitment in the Participant's employment by, or the performance of the Participant's services for, the Company and any Subsidiary is reduced (for example, and without limitation, if the Participant is an Employee of a Subsidiary of the Company and the Employee has a change in status from a full-time Employee to a part-time Employee) after the date of grant of any Stock Award to the Participant, the Board has the right in its sole discretion to (i) make a corresponding reduction in the number of shares subject to any portion of such Stock Award that is scheduled to vest or become payable after the date of such change in time commitment, and (ii) in lieu of or in combination with such a reduction, extend the vesting or payment schedule applicable to such Stock Award. In the event of any such reduction, the Participant will have no right with respect to any portion of the Stock Award that is so reduced or extended.

(f) **Incentive Stock Option Limitations.** To the extent that the aggregate Fair Market Value (determined at the time of grant) of Common Stock with respect to which Incentive Stock Options are exercisable for the first time by any Optionholder during any calendar year (under all plans of the Company and any Affiliates) exceeds one hundred thousand dollars (\$100,000) (or such other limit established in the Code) or otherwise does not comply with the rules governing Incentive Stock Options, the Options or portions thereof that exceed such limit (according to the order in which they were granted) or otherwise do not comply with such rules will be treated as Nonstatutory Stock Options, notwithstanding any contrary provision of the applicable Option Agreement(s).

(g) **Investment Assurances.** The Company may require a Participant, as a condition of exercising or acquiring Common Stock under any Stock Award, (i) to give written assurances satisfactory to the Company as to the Participant's knowledge and experience in financial and business matters and/or to employ a purchaser representative reasonably satisfactory to the Company who is knowledgeable and experienced in financial and business matters and that the Participant is capable of evaluating, alone or together with the purchaser representative, the merits and risks of exercising the Stock Award; and (ii) to give written assurances satisfactory to the Company stating that the Participant is acquiring Common Stock subject to the Stock Award for the Participant's own account and not with any present intention of selling or otherwise distributing the Common Stock. The foregoing requirements, and any assurances given pursuant to such requirements, will be inoperative if (A) the issuance of the shares upon the exercise or acquisition of Common Stock under the Stock Award has been registered under a then currently effective registration statement under the Securities Act, or (B) as to any particular requirement, a determination is made by counsel for the Company that such requirement need not be met in the circumstances under the then applicable securities laws. The Company may, upon advice of counsel to the Company, place legends on stock certificates issued under the Plan as such counsel deems necessary or appropriate in order to comply with applicable securities laws, including, but not limited to, legends restricting the transfer of the Common Stock.

(h) **Withholding Obligations.** Unless prohibited by the terms of a Grant Agreement, the Company may, in its sole discretion, satisfy any federal, state or local tax withholding obligation relating to a Stock Award to a Participant who is an Employee by any of the following means or by a combination of such means: (i) causing the Participant to tender a cash payment; (ii) withholding shares of Common Stock from the shares of Common Stock issued or otherwise issuable to the Participant in connection with the Stock Award; *provided, however*, that no shares of Common Stock are withheld with a value exceeding the minimum amount of tax required to be withheld by law (or such lesser amount as may be necessary to avoid classification of the Stock Award as a liability for financial accounting purposes); (iii) withholding cash from a Stock Award settled in cash; (iv) withholding payment from any amounts otherwise payable to the Participant; or (v) by such other method as may be set forth in the Grant Agreement.

(i) **Electronic Delivery.** Any reference herein to a “written” agreement or document will include any agreement or document delivered electronically or posted on the Company’s intranet (or other shared electronic medium controlled by the Company to which the Participant has access).

(j) **Compliance with Section 409A of the Code.** The Company shall make a good faith effort to ensure that all Stock Awards, to the extent subject to Section 409A of the Code, incorporate the terms and conditions necessary to avoid the consequences specified in Section 409A(a)(1) of the Code. To the extent applicable, the Plan and Grant Agreements shall be interpreted in accordance with Section 409A of the Code.

(k) **Compliance with Exemption Provided by Rule 12h-1(f).** If at the end of the Company’s most recently completed fiscal year: (i) the aggregate of the number of persons who hold outstanding compensatory employee stock options to purchase shares of Common Stock granted pursuant to the Plan or otherwise (such persons, “Holders of Options”) equals or exceeds five hundred (500), and (ii) the Company’s assets exceed \$10 million, then the following restrictions will apply during any period during which the Company does not have a class of its securities registered under Section 12 of the Exchange Act and is not required to file reports under Section 15(d) of the Exchange Act, to the extent required by the Exchange Act or other applicable laws: (A) the Options and, prior to exercise, the shares of Common Stock to be issued on exercise of the Options may not be transferred until the Company is no longer relying on the exemption provided by SEC Rule 12h-1(f) promulgated under the Exchange Act (“Rule 12h-1(f)”), except: (1) as permitted by Rule 701(c) promulgated under the Securities Act, (2) to a guardian upon the disability of the Holder of Options, or (3) to an executor upon the death of the Holder of Options (collectively, the “*Permitted Transferees*”); *provided, however*, the following transfers are permitted: (i) transfers by Holders of Options to the Company, and (ii) transfers in connection with a change of control or other acquisition involving the Company, if following such transaction, the Options no longer remain outstanding and the Company is no longer relying on the exemption provided by Rule 12h-1(f); *provided further*, that any Permitted Transferees may not further transfer the Options; (B) except as otherwise provided in (A) above, the Options and shares of Common Stock issuable on exercise of the Options are restricted as to any pledge, hypothecation, or other transfer, including any short position, any “put equivalent position” as defined by SEC Rule 16a-1(h) promulgated under the Exchange Act, or any “call equivalent position” as defined by SEC Rule 16a-1(b) promulgated under the Exchange Act by Holders of Options prior to exercise of an Option until the Company is no longer relying on the exemption provided by Rule 12h-1(f); and (C) at any time that the Company is relying on the exemption provided by Rule 12h-1(f), the Company will deliver to Holders of Options (whether by physical or electronic delivery or written notice of the availability of the information on an internet site) the information required by SEC Rule 701(e)(3), (4), and (5) promulgated under the Securities Act every six (6) months, including financial statements that are not more than one hundred eighty (180) days old; *provided, however*, that the Company may condition the delivery of such information upon the Holder of Options’ agreement to maintain its confidentiality.

(l) **Repurchase Limitation.** At the discretion of the Board, any shares of Common Stock issued to a Participant pursuant to this Plan may be subject to a call option or other repurchase right, as specified in the terms of the Stockholders Agreement or the Participant's Grant Agreement. However, the Company will not exercise any such repurchase right until at least six (6) months (or such longer or shorter period of time necessary to avoid classification of the Stock Award as a liability for financial accounting purposes) have elapsed following delivery of shares of Common Stock subject to the Stock Award, unless otherwise specifically provided by the Board.

9. ADJUSTMENTS UPON CHANGES IN COMMON STOCK; OTHER CORPORATE EVENTS.

(a) **Capitalization Adjustments.** In the event of a Capitalization Adjustment, the Board will appropriately and proportionately adjust: (i) the class(es) and maximum number of securities subject to the Plan pursuant to Section 3(a), (ii) the class(es) and maximum number of securities that may be issued pursuant to the exercise of Incentive Stock Options pursuant to Section 3(c), and (iii) the class(es) and number of securities and price per share of stock subject to outstanding Stock Awards. The Board will make such adjustments, and its determination will be final, binding and conclusive.

(b) **Dissolution or Liquidation.** Except as otherwise provided in the Grant Agreement for a Stock Award, in the event of a dissolution or liquidation of the Company, all outstanding Stock Awards (other than Stock Awards consisting of vested and outstanding shares of Common Stock not subject to a forfeiture condition or the Company's right of repurchase) will terminate immediately prior to the completion of such dissolution or liquidation, and the shares of Common Stock subject to the Company's repurchase rights or subject to a forfeiture condition may be repurchased or reacquired by the Company notwithstanding the fact that the holder of such Stock Award is providing Continuous Service; *provided, however*, that the Board may, in its sole discretion, cause some or all Stock Awards to become fully vested, exercisable and/or no longer subject to repurchase or forfeiture (to the extent such Stock Awards have not previously expired or terminated) before the dissolution or liquidation is completed but contingent on its completion.

(c) **Corporate Transactions.** The following provisions will apply to Stock Awards in the event of a Transaction unless otherwise provided in the Grant Agreement or any other written agreement between the Participant and the Company or any Subsidiary which may employ the Participant or unless otherwise expressly provided by the Board at the time of grant of a Stock Award. In the event of a Transaction, then, notwithstanding any other provision of the Plan, the Board may take one or more of the following actions with respect to Stock Awards, contingent upon the closing or completion of the Transaction:

(i) arrange for the surviving corporation or acquiring corporation (or the surviving or acquiring corporation's parent company) to assume or continue the Stock Award or to substitute a similar stock award for the Stock Award (including, but not limited to, an award to acquire the same consideration paid to the stockholders of the Company pursuant to the Transaction);

(ii) arrange for the assignment of any reacquisition or repurchase rights held by the Company in respect of Common Stock issued pursuant to the Stock Award to the surviving corporation or acquiring corporation (or the surviving or acquiring corporation's parent company);

(iii) accelerate the vesting, in whole or in part, of the Stock Award (and, if applicable, the time at which the Stock Award may be exercised) to a date prior to the effective time of such Transaction as the Board determines (or, if the Board does not determine such a date, to the date that is five (5) days prior to the effective date of the Transaction), with such Stock Award terminating if not exercised (if applicable) at or prior to the effective time of the Transaction; provided, however, that the Board may require Participants to complete and deliver to the Company a notice of exercise before the effective date of a Transaction, which exercise is contingent upon the effectiveness of such Transaction;

(iv) arrange for the lapse, in whole or in part, of any reacquisition or repurchase rights held by the Company with respect to the Stock Award;

(v) cancel or arrange for the cancellation of the Stock Award, to the extent not vested or not exercised prior to the effective time of the Transaction, in exchange for such cash consideration, if any, as the Board, in its sole discretion, may consider appropriate; and

(vi) make a payment, in such form as may be determined by the Board equal to the excess, if any, of (A) the value of the property the Participant would have received upon the exercise of the Stock Award immediately prior to the effective time of the Transaction, over (B) any exercise price payable by such holder in connection with such exercise. For clarity, this payment may be zero (\$0) if the value of the property is equal to or less than the exercise price. Payments under this provision may be delayed to the same extent that payment of consideration to the holders of the Company's Common Stock in connection with the Transaction is delayed as a result of escrows, earn outs, holdbacks or any other contingencies.

The Board need not take the same action or actions with respect to all Stock Awards or portions thereof or with respect to all Participants. The Board may take different actions with respect to the vested and unvested portions of a Stock Award.

(d) **Change in Control.** A Stock Award may be subject to additional acceleration of vesting and exercisability upon or after a Change in Control as may be provided in the Grant Agreement for such Stock Award or as may be provided in any other written agreement between the Participant and the Company or any Subsidiary which may employ the Participant, but in the absence of such provision, no such acceleration will occur.

10. PLAN TERM; EARLIER TERMINATION OR SUSPENSION OF THE PLAN.

(a) **Plan Term.** The Board may suspend or terminate the Plan at any time. Unless terminated sooner by the Board, the Plan will automatically terminate on the day before the tenth (10th) anniversary of the earlier of (i) the date the Plan is adopted by the Board, or (ii) the date the Plan is approved by the stockholders of the Company. No Stock Awards may be granted under the Plan while the Plan is suspended or after it is terminated.

(b) **No Impairment of Rights.** Suspension or termination of the Plan will not impair rights and obligations under any Stock Award granted while the Plan is in effect except with the written consent of the affected Participant or as otherwise permitted in the Plan.

11. EFFECTIVE DATE OF PLAN.

This Plan will become effective on the Effective Date.

12. CHOICE OF LAW.

The laws of the State of Delaware will govern all questions concerning the construction, validity and interpretation of this Plan, without regard to that state's conflict of laws rules.

13. DEFINITIONS.

As used in the Plan, the following definitions will apply to the capitalized terms indicated below:

(a) "**Affiliate**" means, at the time of determination, any "parent" or "majority-owned subsidiary" of the Company, as such terms are defined in Rule 405. The Board will have the authority to determine the time or times at which "parent" or "majority-owned subsidiary" status is determined within the foregoing definition.

(b) "**Board**" means the Board of Directors of the Company.

(c) “**Capitalization Adjustment**” means any change that is made in, or other events that occur with respect to, the Common Stock subject to the Plan or subject to any Stock Award after the Effective Date without the receipt of consideration by the Company through merger, consolidation, reorganization, recapitalization, reincorporation, stock dividend, dividend in property other than cash, large nonrecurring cash dividend, stock split, reverse stock split, liquidating dividend, combination of shares, exchange of shares, change in corporate structure, or any similar equity restructuring transaction, as that term is used in Statement of Financial Accounting Standards Board Accounting Standards Codification Topic 718 (or any successor thereto). Notwithstanding the foregoing, the conversion of any convertible securities of the Company will not be treated as a Capitalization Adjustment.

(d) “**Cause**” will have the meaning ascribed to such term in any written agreement between the Participant and the Company or the Subsidiary employing the Participant defining such term. In the absence of such agreement, such term means, with respect to a Participant, the occurrence of any of the following events: (i) such Participant’s commission of any felony or any crime involving fraud, dishonesty or moral turpitude under the laws of the United States or any state thereof; (ii) such Participant’s attempted commission of, or participation in, a fraud or act of dishonesty against the Company; (iii) such Participant’s intentional, material violation of any contract or agreement between the Participant and the Company or of any statutory duty owed to the Company; (iv) such Participant’s unauthorized use or disclosure of the Company’s confidential information or trade secrets; or (v) such Participant’s gross misconduct. The determination that a termination of the Participant’s Continuous Service is either for Cause or without Cause will be made by the Company, in its sole discretion. Any determination by the Company that the Continuous Service of a Participant was terminated with or without Cause for the purposes of outstanding Stock Awards held by such Participant will have no effect upon any determination of the rights or obligations of the Company or such Participant for any other purpose.

(e) “**Change in Control**” means the occurrence, in a single transaction or in a series of related transactions, of any one or more of the following events:

(i) any Exchange Act Person becomes the Owner, directly or indirectly, of securities of the Company representing more than fifty percent (50%) of the combined voting power of the Company’s then outstanding securities other than by virtue of a merger, consolidation or similar transaction. Notwithstanding the foregoing, a Change in Control will not be deemed to occur (A) on account of the acquisition of securities of the Company directly from the Company, (B) on account of the acquisition of securities of the Company by an investor, any affiliate thereof or any other Exchange Act Person that acquires the Company’s securities in a transaction or series of related transactions the primary purpose of which is to obtain financing for the Company through the issuance of equity securities or (C) solely because the level of Ownership held by any Exchange Act Person (the “Subject Person”) exceeds the designated percentage threshold of the outstanding voting securities as a result of a repurchase or other acquisition of voting securities by the Company reducing the number of shares outstanding, provided that if a Change in Control would occur (but for the operation of this sentence) as a result of the acquisition of voting securities by the Company, and after such share acquisition, the Subject Person becomes the Owner of any additional voting securities that, assuming the repurchase or other acquisition had not occurred, increases the percentage of the then outstanding voting securities Owned by the Subject Person over the designated percentage threshold, then a Change in Control will be deemed to occur;

(ii) there is consummated a merger, consolidation or similar transaction involving (directly or indirectly) the Company and, immediately after the consummation of such merger, consolidation or similar transaction, the stockholders of the Company immediately prior thereto do not Own, directly or indirectly, either (A) outstanding voting securities representing more than fifty percent (50%) of the combined outstanding voting power of the surviving Entity in such merger, consolidation or similar transaction or (B) more than fifty percent (50%) of the combined outstanding voting power of the parent of the surviving Entity in such merger, consolidation or similar transaction, in each case in substantially the same proportions as their Ownership of the outstanding voting securities of the Company immediately prior to such transaction;

(iii) the stockholders of the Company approve or the Board approves a plan of complete dissolution or liquidation of the Company, or a complete dissolution or liquidation of the Company will otherwise occur, except for a liquidation into a parent corporation; or

(iv) there is consummated a sale, lease, exclusive license or other disposition of all or substantially all of the consolidated assets of the Company and its Subsidiaries, other than a sale, lease, license or other disposition of all or substantially all of the consolidated assets of the Company and its Subsidiaries to an Entity, more than fifty percent (50%) of the combined voting power of the voting securities of which are Owned by stockholders of the Company in substantially the same proportions as their Ownership of the outstanding voting securities of the Company immediately prior to such sale, lease, license or other disposition.

Notwithstanding the foregoing definition or any other provision of this Plan, (A) the term Change in Control will not include a sale of assets, merger or other transaction effected exclusively for the purpose of changing the domicile of the Company, and (B) the definition of Change in Control (or any analogous term) in an individual written agreement between the Participant and the Company or any Subsidiary which may employ the Participant will supersede the foregoing definition with respect to Stock Awards subject to such agreement; provided, however, that if no definition of Change in Control or any analogous term is set forth in such an individual written agreement, the foregoing definition will apply.

(f) “**Code**” means the Internal Revenue Code of 1986, as amended.

(g) “**Committee**” means a committee of one (1) or more Directors to whom authority has been delegated by the Board in accordance with Section 2(c).

(h) “**Common Stock**” means the common stock of the Company.

(i) “**Company**” means Blue Water Vaccines Inc., a Delaware corporation.

(j) “**Consultant**” means any person, including an advisor, who is (i) engaged by the Company or a Subsidiary to render consulting or advisory services and is compensated for such services, or (ii) serving as a member of the board of directors of a Subsidiary or other Affiliate and is compensated for such services. However, service solely as a Director, or payment of a fee for such service, will not cause a Director to be considered a “Consultant” for purposes of the Plan.

(k) “**Continuous Service**” means that the Participant’s service with the Company or a Subsidiary, whether as an Employee, Director or Consultant, is not interrupted or terminated. A change in the capacity in which the Participant renders service to the Company or a Subsidiary as an Employee, Director or Consultant or a change in the Entity for which the Participant renders such service, provided that there is no interruption or termination of the Participant’s service with the Company or the Subsidiary, will not terminate a Participant’s Continuous Service; provided, however, that if the Entity for which a Participant is rendering services ceases to qualify as a Subsidiary, as determined by the Board in its sole discretion, such Participant’s Continuous Service will be considered to have terminated on the date such Entity ceases to qualify as a Subsidiary. For example, a change in status from an Employee of the Company to a Consultant of a Subsidiary or to a Director will not constitute an interruption of Continuous Service. To the extent permitted by law, the Board or the chief executive officer of the Company, in that party’s sole discretion, may determine whether Continuous Service will be considered interrupted in the case of (i) any leave of absence approved by the Board or chief executive officer, including sick leave, military leave or any other personal leave, or (ii) transfers between the Company, a Subsidiary, or their successors. Notwithstanding the foregoing, a leave of absence will be treated as Continuous Service for purposes of vesting in a Stock Award only to such extent as may be provided in the Company’s leave of absence policy, in the written terms of any leave of absence agreement or policy applicable to the Participant, or as otherwise required by law.

(l) “**Corporate Transaction**” means the consummation, in a single transaction or in a series of related transactions, of any one or more of the following events:

(i) a sale or other disposition of all or substantially all, as determined by the Board in its sole discretion, of the consolidated assets of the Company and its Subsidiaries;

(ii) a sale or other disposition of at least ninety percent (90%) of the outstanding securities of the Company;

(iii) a merger, consolidation or similar transaction following which the Company is not the surviving corporation; or

(iv) a merger, consolidation or similar transaction following which the Company is the surviving corporation but the shares of Common Stock outstanding immediately preceding the merger, consolidation or similar transaction are converted or exchanged by virtue of the merger, consolidation or similar transaction into other property, whether in the form of securities, cash or otherwise.

(m) “**Director**” means a member of the Board.

(n) “**Disability**” means, with respect to a Participant, the inability of such Participant to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment that can be expected to result in death or that has lasted or can be expected to last for a continuous period of not less than twelve (12) months as provided in Sections 22(e)(3) and 409A(a)(2)(c)(i) of the Code, and will be determined by the Board on the basis of such medical evidence as the Board deems warranted under the circumstances.

(o) “**Effective Date**” means the effective date of this Plan, which is the earlier of (i) the date that this Plan is first approved by the Company’s stockholders, and (ii) the date this Plan is adopted by the Board.

(p) “**Employee**” means any person employed by the Company or a Subsidiary of the Company. However, service solely as a Director, or payment of a fee for such services, will not cause a Director to be considered an “Employee” for purposes of the Plan.

(q) “**Entity**” means a corporation, partnership, limited liability company or other entity.

(r) “**Exchange Act**” means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

(s) “**Exchange Act Person**” means any natural person, Entity or “group” (within the meaning of Section 13(d) or 14(d) of the Exchange Act), except that “Exchange Act Person” will not include (i) the Company or any Subsidiary of the Company, (ii) any employee benefit plan of the Company or any Subsidiary of the Company or any trustee or other fiduciary holding securities under an employee benefit plan of the Company or any Subsidiary of the Company, (iii) an underwriter temporarily holding securities pursuant to an offering of such securities, (iv) an Entity Owned, directly or indirectly, by the stockholders of the Company in substantially the same proportions as their Ownership of stock of the Company; or (v) any natural person, Entity or “group” (within the meaning of Section 13(d) or 14(d) of the Exchange Act) that, as of the Effective Date, is the Owner, directly or indirectly, of securities of the Company representing more than fifty percent (50%) of the combined voting power of the Company’s then outstanding securities.

(t) “**Fair Market Value**” means, as of any date, the value of the Common Stock determined by the Board in good faith with Section 409A of the Code or, in the case of an Incentive Stock Option, in good faith compliance with Section 422 of the Code.

(u) “**Grant Agreement**” means an Option Grant Agreement, Restricted Stock Grant Agreement, Restricted Stock Unit Grant Agreement or other Stock Grant Agreement.

(v) “**Incentive Stock Option**” means an option granted pursuant to Section 5 of the Plan that is intended to be, and that qualifies as, an “incentive stock option” within the meaning of Section 422 of the Code.

(w) “**Nonstatutory Stock Option**” means any option granted pursuant to Section 5 of the Plan that does not qualify as an Incentive Stock Option.

(x) “**Officer**” means any person designated by the Company as an officer.

(y) “**Option**” means an Incentive Stock Option or a Nonstatutory Stock Option to purchase shares of Common Stock granted pursuant to the Plan.

(z) “**Option Grant Agreement**” means a written agreement between the Company and an Optionholder evidencing the terms and conditions of an Option grant. Each Option Grant Agreement will be subject to the terms and conditions of the Plan.

(aa) "**Optionholder**" means a person to whom an Option is granted pursuant to the Plan or, if applicable, such other person who holds an outstanding Option.

(bb) "**Other Stock Award**" means an award based in whole or in part by reference to the Common Stock which is granted pursuant to the terms and conditions of Section 6(c).

(cc) "**Other Stock Award Agreement**" means a written agreement between the Company and a holder of an Other Stock Award evidencing the terms and conditions of an Other Stock Award grant. Each Other Stock Award Agreement will be subject to the terms and conditions of the Plan.

(dd) "**Own,**" "**Owned,**" "**Owner,**" "**Ownership**" A person or Entity will be deemed to "Own," to have "Owned," to be the "Owner" of, or to have acquired "Ownership" of securities if such person or Entity, directly or indirectly, through any contract, arrangement, understanding, relationship or otherwise, has or shares voting power, which includes the power to vote or to direct the voting, with respect to such securities.

(ee) "**Participant**" means a person to whom a Stock Award is granted pursuant to the Plan or, if applicable, such other person who holds an outstanding Stock Award.

(ff) "**Plan**" means this Blue Water Vaccines Inc. 2019 Equity Incentive Plan, as it may be amended from time to time.

(gg) "**Restricted Stock Award**" means an award of shares of Common Stock which is granted pursuant to the terms and conditions of Section 6(a).

(hh) "**Restricted Stock Grant Agreement**" means a written agreement between the Company and a holder of a Restricted Stock Award evidencing the terms and conditions of a Restricted Stock Award grant. Each Restricted Stock Grant Agreement will be subject to the terms and conditions of the Plan.

(ii) "**Restricted Stock Unit Award**" means a right to receive shares of Common Stock which is granted pursuant to the terms and conditions of Section 6(b).

(jj) "**Restricted Stock Unit Award Agreement**" means a written agreement between the Company and a holder of a Restricted Stock Unit Award evidencing the terms and conditions of a Restricted Stock Unit Award grant. Each Restricted Stock Unit Grant Agreement will be subject to the terms and conditions of the Plan.

(kk) "**SEC Rule 405**" means Rule 405 promulgated under the Securities Act.

(ll) "**SEC Rule 701**" means Rule 701 promulgated under the Securities Act.

(mm) "**Securities Act**" means the Securities Act of 1933, as amended.

(nn) "**Stock Appreciation Right**" or "**SAR**" means a right to receive the appreciation on Common Stock that is granted pursuant to the terms and conditions of Section 5.

(oo) "**Stock Appreciation Right Agreement**" means a written agreement between the Company and a holder of a Stock Appreciation Right evidencing the terms and conditions of a Stock Appreciation Right grant. Each Stock Appreciation Right Grant Agreement will be subject to the terms and conditions of the Plan.

(pp) “**Stock Award**” means any right to receive Common Stock granted under the Plan, including an Incentive Stock Option, a Nonstatutory Stock Option, a Restricted Stock Award, a Restricted Stock Unit Award, a Stock Appreciation Right or any Other Stock Award.

(qq) “**Stockholder Agreements**” means, collectively, (i) the Right of First Refusal and Co-Sale Agreement dated on or around [_____], 2019 by and among the Company and certain stockholders of the Company listed therein and (ii) the Voting Agreement, dated on or around [_____], 2019, by and among the Company and certain stockholders of the Company listed therein, as each may be amended or restated from time to time.

(rr) “**Subsidiary**” means, with respect to the Company, (i) any corporation of which more than fifty percent (50%) of the outstanding capital stock having ordinary voting power to elect a majority of the board of directors of such corporation (irrespective of whether, at the time, stock of any other class or classes of such corporation will have or might have voting power by reason of the happening of any contingency) is at the time, directly or indirectly, Owned by the Company, and (ii) any partnership, limited liability company or other entity in which the Company has a direct or indirect interest (whether in the form of voting or participation in profits or capital contribution) of more than fifty percent (50%) .

(ss) “**Ten Percent Stockholder**” means a person who Owns (or is deemed to Own pursuant to Section 424(d) of the Code) stock possessing more than ten percent (10%) of the total combined voting power of all classes of stock of the Company or any Affiliate.

(tt) “**Transaction**” means a Corporate Transaction or a Change in Control.

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**BLUE WATER VACCINES INC.
2021 EQUITY INCENTIVE PLAN**

1. GENERAL.

(a) Plan Purpose. The Company, by means of the Plan, seeks to secure and retain the services of Employees, Directors and Consultants, to provide incentives for such persons to exert maximum efforts for the success of the Company and any Affiliate and to provide a means by which such persons may be given an opportunity to benefit from increases in value of the Common Stock through the granting of Awards.

(b) Available Awards. The Plan provides for the grant of the following Awards: (i) Incentive Stock Options; (ii) Nonstatutory Stock Options; (iii) SARs; (iv) Restricted Stock Awards; (v) RSU Awards; (vi) Performance Awards; and (vii) Other Awards.

(c) Adoption Date. The Plan will come into existence on the Adoption Date. No Award may be granted under the Plan prior to the Adoption Date. Any Award granted prior to the Effective Date is contingent upon timely receipt of Stockholder approval to the extent required under applicable tax, securities and regulatory rules, and satisfaction of any other compliance requirements.

(d) Successor to and Continuation of Prior Plans. The Plan is the successor to and continuation of the Company's 2019 Equity Incentive Plan. As of the Effective Date, (i) no additional awards may be granted under the 2019 Equity Incentive Plan; (ii) the Prior Plans' Available Reserve plus any Returning Shares will become available for issuance pursuant to Awards granted under this Plan; and (iii) all outstanding awards granted under the 2019 Equity Incentive Plan will remain subject to the terms of the 2019 Equity Incentive Plan (except to the extent such outstanding awards result in Returning Shares that become available for issuance pursuant to Awards granted under this Plan). All Awards granted under this Plan will be subject to the terms of this Plan.

2. SHARES SUBJECT TO THE PLAN.

(a) Share Reserve. Subject to adjustment in accordance with Section 2(d) and any adjustments as necessary to implement any Capitalization Adjustments, the aggregate number of shares of Common Stock that may be issued pursuant to Awards will not exceed the sum of (i) **[10,000,000]** new shares, plus (ii) the Prior Plans' Available Reserve; plus, (iii) the number of Returning Shares, if any, as such shares become available from time to time.

(b) Fungible Share Counting. Subject to adjustment in accordance with Section 2(d), the number of shares of Common Stock available for issuance under the Plan will be reduced by: (i) one share for each share of Common Stock issued pursuant to an Option or SAR with respect to which the exercise or strike price is at least 100% of the Fair Market Value of the Common Stock subject to the Option or SAR on the grant date (each, an "**Appreciation Award**"); and (ii) **[1.20]** shares for each share of Common Stock issued pursuant to any Award (other than an Appreciation Award) (each, a "**Full Value Award**").

(c) Aggregate Incentive Stock Option Limit. Notwithstanding anything to the contrary in Section 2(a) and subject to any adjustments as necessary to implement any Capitalization Adjustments, the aggregate maximum number of shares of Common Stock that may be issued pursuant to the exercise of Incentive Stock Options is **[10,000,000]** shares.

(d) Share Reserve Operation.

(i) Limit Applies to Common Stock Issued Pursuant to Awards. For clarity, the Share Reserve is a limit on the number of shares of Common Stock that may be issued pursuant to Awards and does not limit the granting of Awards, except that the Company will keep available at all times the number of shares of Common Stock reasonably required to satisfy its obligations to issue shares pursuant to such Awards. Shares may be issued in connection with a merger or acquisition as permitted by, as applicable, Nasdaq Listing Rule 5635(c), NYSE Listed Company Manual Section 303A.08, NYSE American Company Guide Section 711 or other applicable rule, and such issuance will not reduce the number of shares available for issuance under the Plan.

(ii) Actions that Do Not Constitute Issuance of Common Stock and Do Not Reduce Share Reserve. The following actions do not result in an issuance of shares under the Plan and accordingly do not reduce the number of shares subject to the Share Reserve and available for issuance under the Plan: (1) the expiration or termination of any portion of an Award without the shares covered by such portion of the Award having been issued, (2) the settlement of any portion of an Award in cash (*i.e.*, the Participant receives cash rather than Common Stock), (3) the withholding of shares that would otherwise be issued by the Company to satisfy the exercise or strike price of an Appreciation Award; (4) the withholding of shares that would otherwise be issued by the Company to satisfy a tax withholding obligation in connection with an Appreciation Award.

(iii) Reversion of Previously Issued Shares of Common Stock to Share Reserve. The following shares of Common Stock previously issued pursuant to an Award and accordingly initially deducted from the Share Reserve will be added back to the Share Reserve and again become available for issuance under the Plan: (1) any shares that are forfeited back to or repurchased by the Company because of a failure to meet a contingency or condition required for the vesting of such shares; (2) any shares that are reacquired by the Company to satisfy the exercise or strike price of an Appreciation Award; and (3) any shares that are reacquired by the Company to satisfy a tax withholding obligation in connection with an Appreciation Award. For each share subject to a Full Value Award that is added back to the Share Reserve pursuant to this subsection, the number of shares of Common Stock available for issuance under the Plan will increase by **[1.20]** shares.

3. ELIGIBILITY AND LIMITATIONS.

(a) Eligible Award Recipients. Subject to the terms of the Plan, Employees, Directors and Consultants are eligible to receive Awards.

(b) Specific Award Limitations.

(i) Limitations on Incentive Stock Option Recipients. Incentive Stock Options may be granted only to Employees of the Company or a “parent corporation” or “subsidiary corporation” thereof (as such terms are defined in Sections 424(e) and (f) of the Code).

(ii) Incentive Stock Option \$100,000 Limitation. To the extent that the aggregate Fair Market Value (determined at the time of grant) of Common Stock with respect to which Incentive Stock Options are exercisable for the first time by any Optionholder during any calendar year (under all plans of the Company and any Affiliates) exceeds \$100,000 (or such other limit established in the Code) or otherwise does not comply with the rules governing Incentive Stock Options, the Options or portions thereof that exceed such limit (according to the order in which they were granted) or otherwise do not comply with such rules will be treated as Nonstatutory Stock Options, notwithstanding any contrary provision of the applicable Option Agreement(s).

(iii) Limitations on Incentive Stock Options Granted to Ten Percent Stockholders. A Ten Percent Stockholder may not be granted an Incentive Stock Option unless (i) the exercise price of such Option is at least 110% of the Fair Market Value on the date of grant of such Option and (ii) the Option is not exercisable after the expiration of five years from the date of grant of such Option.

(iv) Limitations on Nonstatutory Stock Options and SARs. Nonstatutory Stock Options and SARs may not be granted to Employees, Directors and Consultants who are providing Continuous Service only to any “parent” of the Company (as such term is defined in Rule 405) unless the stock underlying such Awards is treated as “service recipient stock” under Section 409A because the Awards are granted pursuant to a corporate transaction (such as a spin off transaction) or unless such Awards otherwise comply with the distribution requirements of Section 409A.

(c) Aggregate Incentive Stock Option Limit. The aggregate maximum number of shares of Common Stock that may be issued pursuant to the exercise of Incentive Stock Options is the number of shares specified in Section 2(c).

(d) Non-Employee Director Compensation Limit. The aggregate value of all Awards granted to any individual for service as a Non-Employee Director with respect to any calendar year will not exceed (i) **[\$300,000]** in total value or (ii) in the event such Non-Employee Director is first appointed or elected to the Board during such calendar year, **[\$500,000]** in total value, in each case calculating the value of any equity awards based on the grant date fair value of such equity awards for financial reporting purposes.

4. **OPTIONS.**

Each Option will have such terms and conditions as determined by the Board. Each Option will be designated in writing as an Incentive Stock Option or Nonstatutory Stock Option at the time of grant; provided, however, that if an Option is not so designated, then such Option will be a Nonstatutory Stock Option, and the shares purchased upon exercise of each type of Option will be separately accounted for. The terms and conditions of separate Options need not be identical; provided, however, that each Option Agreement will conform (through incorporation of provisions hereof by reference in the Award Agreement or otherwise) to the substance of each of the following provisions:

(a) Term. Subject to Section 3(b) regarding Ten Percent Stockholders, no Option will be exercisable after the expiration of ten years from the date of grant of such Award or such shorter period specified in the Award Agreement.

(b) Exercise or Strike Price. Subject to Section 3(b) regarding Ten Percent Stockholders, the exercise or strike price of each Option will not be less than 100% of the Fair Market Value on the date of grant of such Award. Notwithstanding the foregoing, an Option may be granted with an exercise or strike price lower than 100% of the Fair Market Value on the date of grant of such Award if such Award is granted pursuant to an assumption of or substitution for another option or stock appreciation right pursuant to a Corporate Transaction and in a manner consistent with the provisions of Sections 409A and, if applicable, 424(a) of the Code.

(c) Exercise Procedure and Payment of Exercise Price for Options. In order to exercise an Option, the Participant must provide notice of exercise to the Plan Administrator in accordance with the procedures specified in the Option Agreement or otherwise provided by the Company. The Board has the authority to grant Options that do not permit all of the following methods of payment (or otherwise restrict the ability to use certain methods) and to grant Options that require the consent of the Company to utilize a particular method of payment. The exercise price of an Option may be paid, to the extent permitted by Applicable Law and as determined by the Board, by one or more of the following methods of payment to the extent set forth in the Option Agreement:

(i) by cash or check, bank draft or money order payable to the Company;

(ii) pursuant to a “cashless exercise” program developed under Regulation T as promulgated by the Federal Reserve Board that, prior to the issuance of the Common Stock subject to the Option, results in either the receipt of cash (or check) by the Company or the receipt of irrevocable instructions to pay the exercise price to the Company from the sales proceeds;

(iii) by delivery to the Company (either by actual delivery or attestation) of shares of Common Stock that are already owned by the Participant free and clear of any liens, claims, encumbrances or security interests, with a Fair Market Value on the date of exercise that does not exceed the exercise price, provided that (1) at the time of exercise the Common Stock is publicly traded, (2) any remaining balance of the exercise price not satisfied by such delivery is paid by the Participant in cash or other permitted form of payment, (3) such delivery would not violate any Applicable Law or agreement restricting the redemption of the Common Stock, (4) any certificated shares are endorsed or accompanied by an executed assignment separate from certificate, and (5) such shares have been held by the Participant for any minimum period necessary to avoid adverse accounting treatment as a result of such delivery;

(iv) if the Option is a Nonstatutory Stock Option, by a “net exercise” arrangement pursuant to which the Company will reduce the number of shares of Common Stock issuable upon exercise by the largest whole number of shares with a Fair Market Value on the date of exercise that does not exceed the exercise price, *provided, however*, that the Company will accept a cash or other payment from the Participant to the extent of any remaining balance of the aggregate exercise price not satisfied by such reduction in the number of whole shares to be issued. Shares of Common Stock will no longer be subject to an Option and will not be exercisable thereafter to the extent that (A) shares issuable upon exercise are used to pay the exercise price pursuant to the “net exercise,” (B) shares are delivered to the Participant as a result of such exercise, and (C) shares are withheld to satisfy tax withholding obligations; or

(v) in any other form of consideration that may be acceptable to the Board and permissible under Applicable Law.

(d) Transferability. The Board may impose such limitations on the transferability of an Option as it determines. In the absence of any such determination by the Board, the following restrictions on the transferability of Options will apply, provided that except as explicitly provided herein, no Option may be transferred for consideration and *provided, further*, that if an Option is an Incentive Stock Option, such Option may be deemed to be a Nonstatutory Stock Option as a result of such transfer:

(i) Restrictions on Transfer. An Option will not be transferable, except by will or by the laws of descent and distribution, and will be exercisable during the lifetime of the Participant only by the Participant; provided, however, that the Board may permit transfer of an Option in a manner that is not prohibited by applicable tax and securities laws upon the Participant’s request, including to a trust if the Participant is considered to be the sole beneficial owner of such trust (as determined under Section 671 of the Code and applicable state law) while such Option is held in such trust, provided that the Participant and the trustee enter into a transfer and other agreements required by the Company.

(ii) Domestic Relations Orders. Notwithstanding the foregoing, subject to the execution of transfer documentation in a format acceptable to the Company and subject to the approval of the Board or a duly authorized Officer, an Option may be transferred pursuant to a domestic relations order.

(e) Vesting. The Board may impose such restrictions on or conditions to the vesting and/or exercisability of an Option as determined by the Board. Except as otherwise provided in the Award Agreement or other written agreement between a Participant and the Company or an Affiliate, vesting of Options will cease upon termination of the Participant's Continuous Service.

(f) Termination of Continuous Service for Cause. Except as explicitly otherwise provided in the Award Agreement or other written agreement between a Participant and the Company or an Affiliate, if a Participant's Continuous Service is terminated for Cause, the Participant's Options will terminate and be forfeited immediately upon such termination of Continuous Service, and the Participant will be prohibited from exercising any portion (including any vested portion) of such Awards on and after the date of such termination of Continuous Service and the Participant will have no further right, title or interest in such forfeited Award, the shares of Common Stock subject to the forfeited Award, or any consideration in respect of the forfeited Award.

(g) Post-Termination Exercise Period Following Termination of Continuous Service for Reasons Other than Cause. Subject to Section 4(h), if a Participant's Continuous Service terminates for any reason other than for Cause, the Participant may exercise his or her Options to the extent vested, but only within the following period of time or, if applicable, such other period of time provided in the Award Agreement or other written agreement between a Participant and the Company or an Affiliate; provided, however, that in no event may such Award be exercised after the expiration of its maximum term (as set forth in Section 4(a)):

(i) three months following the date of such termination if such termination is a termination without Cause (other than any termination due to the Participant's Disability or death);

(ii) 12 months following the date of such termination if such termination is due to the Participant's Disability;

(iii) 18 months following the date of such termination if such termination is due to the Participant's death; or

(iv) 18 months following the date of the Participant's death if such death occurs following the date of such termination but during the period such Award is otherwise exercisable (as provided in (i) or (ii) above).

Following the date of such termination, to the extent the Participant does not exercise such Award within the applicable Post-Termination Exercise Period (or, if earlier, prior to the expiration of the maximum term of such Award), such unexercised portion of the Award will terminate, and the Participant will have no further right, title or interest in the terminated Award, the shares of Common Stock subject to the terminated Award, or any consideration in respect of the terminated Award.

(h) Restrictions on Exercise; Extension of Exercisability. A Participant may not exercise an Option at any time that the issuance of shares of Common Stock upon such exercise would violate Applicable Law. Except as otherwise provided in the Award Agreement or other written agreement between a Participant and the Company or an Affiliate, if a Participant's Continuous Service terminates for any reason other than for Cause and, at any time during the last thirty days of the applicable Post-Termination Exercise Period: (i) the exercise of the Participant's Option would be prohibited solely because the issuance of shares of Common Stock upon such exercise would violate Applicable Law, or (ii) the immediate sale of any shares of Common Stock issued upon such exercise would violate the Company's Trading Policy, then the applicable Post-Termination Exercise Period will be extended to the last day of the calendar month that commences following the date the Award would otherwise expire, with an additional extension of the exercise period to the last day of the next calendar month to apply if any of the foregoing restrictions apply at any time during such extended exercise period, generally without limitation as to the maximum permitted number of extensions); provided, however, that in no event may such Award be exercised after the expiration of its maximum term (as set forth in Section 4(a)).

(i) Whole Shares. Options may be exercised only with respect to whole shares of Common Stock or their equivalents.

5. STOCK APPRECIATION RIGHTS.

Each SAR will have such terms and conditions as determined by the Board. Each SAR will be denominated in shares of Common Stock equivalents. The terms and conditions of separate SARs need not be identical; provided, however, that each SAR Agreement will conform (through incorporation of provisions hereof by reference in the Award Agreement or otherwise) to the substance of each of the following provisions:

(a) Term. No SAR will be exercisable after the expiration of ten years from the date of grant of such Award or such shorter period specified in the Award Agreement.

(b) Exercise or Strike Price. Subject to Section 3(b) regarding Ten Percent Stockholders, the exercise or strike price of each SAR will not be less than 100% of the Fair Market Value on the date of grant of such Award.

(c) Exercise Procedure and Payment of Appreciation Distribution for SARs. In order to exercise any SAR, the Participant must provide notice of exercise to the Plan Administrator in accordance with the SAR Agreement. The appreciation distribution payable to a Participant upon the exercise of a SAR will not be greater than an amount equal to the excess of (i) the aggregate Fair Market Value on the date of exercise of a number of shares of Common Stock equal to the number of Common Stock equivalents that are vested and being exercised under such SAR, over (ii) the strike price of such SAR. Such appreciation distribution may be paid to the Participant in the form of Common Stock or cash (or any combination of Common Stock and cash) or in any other form of payment, as determined by the Board and specified in the SAR Agreement.

(d) Transferability. The Board may impose such limitations on the transferability of an SAR as it determines. In the absence of any such determination by the Board, the following restrictions on the transferability of SARs will apply, provided that except as explicitly provided herein, no SAR may be transferred for consideration:

(i) Restrictions on Transfer. An SAR will not be transferable, except by will or by the laws of descent and distribution, and will be exercisable during the lifetime of the Participant only by the Participant; provided, however, that the Board may permit transfer of an SAR in a manner that is not prohibited by applicable tax and securities laws upon the Participant's request, including to a trust if the Participant is considered to be the sole beneficial owner of such trust (as determined under Section 671 of the Code and applicable state law) while such SAR is held in such trust, provided that the Participant and the trustee enter into a transfer and other agreements required by the Company.

(ii) Domestic Relations Orders. Notwithstanding the foregoing, subject to the execution of transfer documentation in a format acceptable to the Company and subject to the approval of the Board or a duly authorized Officer, an SAR may be transferred pursuant to a domestic relations order.

(e) Vesting. The Board may impose such restrictions on or conditions to the vesting and/or exercisability of an SAR as determined by the Board. Except as otherwise provided in the Award Agreement or other written agreement between a Participant and the Company or an Affiliate, vesting of SARs will cease upon termination of the Participant's Continuous Service.

(f) Termination of Continuous Service for Cause. Except as explicitly otherwise provided in the Award Agreement or other written agreement between a Participant and the Company or an Affiliate, if a Participant's Continuous Service is terminated for Cause, the Participant's SARs will terminate and be forfeited immediately upon such termination of Continuous Service, and the Participant will be prohibited from exercising any portion (including any vested portion) of such Awards on and after the date of such termination of Continuous Service and the Participant will have no further right, title or interest in such forfeited Award, the shares of Common Stock subject to the forfeited Award, or any consideration in respect of the forfeited Award.

(g) Post-Termination Exercise Period Following Termination of Continuous Service for Reasons Other than Cause. Subject to Section 5(h), if a Participant's Continuous Service terminates for any reason other than for Cause, the Participant may exercise his or her SARs to the extent vested, but only within the following period of time or, if applicable, such other period of time provided in the Award Agreement or other written agreement between a Participant and the Company or an Affiliate; provided, however, that in no event may such Award be exercised after the expiration of its maximum term (as set forth in Section 5(a) above):

(i) three months following the date of such termination if such termination is a termination without Cause (other than any termination due to the Participant's Disability or death);

(ii) 12 months following the date of such termination if such termination is due to the Participant's Disability;

(iii) 18 months following the date of such termination if such termination is due to the Participant's death; or

(iv) 18 months following the date of the Participant's death if such death occurs following the date of such termination but during the period such Award is otherwise exercisable (as provided in (i) or (ii) above).

Following the date of such termination, to the extent the Participant does not exercise such Award within the applicable Post-Termination Exercise Period (or, if earlier, prior to the expiration of the maximum term of such Award), such unexercised portion of the Award will terminate, and the Participant will have no further right, title or interest in the terminated Award, the shares of Common Stock subject to the terminated Award, or any consideration in respect of the terminated Award.

(h) Restrictions on Exercise; Extension of Exercisability. A Participant may not exercise an SAR at any time that the issuance of shares of Common Stock upon such exercise would violate Applicable Law. Except as otherwise provided in the Award Agreement or other written agreement between a Participant and the Company or an Affiliate, if a Participant's Continuous Service terminates for any reason other than for Cause and, at any time during the last thirty days of the applicable Post-Termination Exercise Period: (i) the exercise of the Participant's SAR would be prohibited solely because the issuance of shares of Common Stock upon such exercise would violate Applicable Law, or (ii) the immediate sale of any shares of Common Stock issued upon such exercise would violate the Company's Trading Policy, then the applicable Post-Termination Exercise Period will be extended to the last day of the calendar month that commences following the date the Award would otherwise expire, with an additional extension of the exercise period to the last day of the next calendar month to apply if any of the foregoing restrictions apply at any time during such extended exercise period, generally without limitation as to the maximum permitted number of extensions); provided, however, that in no event may such Award be exercised after the expiration of its maximum term (as set forth in Section 5(a)).

(i) Whole Shares. Options and SARs may be exercised only with respect to whole shares of Common Stock or their equivalents.

6. RESTRICTED STOCK AND RESTRICTED STOCK UNITS

(a) Restricted Stock Awards. Each Restricted Stock Award will have such terms and conditions as determined by the Board; provided, however, that each Restricted Stock Award Agreement will conform (through incorporation of the provisions hereof by reference in the Award Agreement or otherwise) to the substance of each of the following provisions:

(i) Form of Award. To the extent consistent with the Company's Bylaws, at the Board's election, shares of Common Stock subject to a Restricted Stock Award may be (i) held in book entry form subject to the Company's instructions until such shares become vested or any other restrictions lapse, or (ii) evidenced by a certificate, which certificate will be held in such form and manner as determined by the Board. Unless otherwise determined by the Board, a Participant will have voting and other rights as a stockholder of the Company with respect to any shares subject to a Restricted Stock Award.

(ii) Consideration. A Restricted Stock Award may be granted in consideration for (A) cash or check, bank draft or money order payable to the Company, (B) past services to the Company or an Affiliate, or (C) any other form of consideration (including future services) as the Board may determine and permissible under Applicable Law.

(iii) Vesting. The Board may impose such restrictions on or conditions to the vesting of a Restricted Stock Award as determined by the Board. Except as otherwise provided in the Award Agreement or other written agreement between a Participant and the Company or an Affiliate, vesting of Restricted Stock Awards will cease upon termination of the Participant's Continuous Service.

(iv) Termination of Continuous Service. Except as otherwise provided in the Award Agreement or other written agreement between a Participant and the Company or an Affiliate, if a Participant's Continuous Service terminates for any reason, the Company may receive through a forfeiture condition or a repurchase right any or all of the shares of Common Stock held by the Participant under his or her Restricted Stock Award that have not vested as of the date of such termination as set forth in the Restricted Stock Award Agreement.

(v) Dividends. Dividends may be paid or credited, as applicable, with respect to any shares of Common Stock subject to a Restricted Stock Award, as determined by the Board and specified in the Award Agreement; *provided, however*, that (i) any dividends that are credited with respect to any such shares will be subject to all of the terms and conditions applicable to such shares under the terms of such Award Agreement (including, but not limited to, any vesting conditions), and (ii) any dividends that are credited with respect to any such shares will be forfeited to the Company on the date, if any, such shares are forfeited to or repurchased by the Company due to a failure to meet any vesting conditions under the terms of such Award Agreement.

(b) Restricted Stock Unit Awards. Each RSU Award will have such terms and conditions as determined by the Board; provided, however, that each RSU Award Agreement will conform (through incorporation of the provisions hereof by reference in the Award Agreement or otherwise) to the substance of each of the following provisions:

(i) Form of Award. A RSU Award represents a Participant's right to be issued on a future date the number of shares of Common Stock that is equal to the number of restricted stock units subject to the RSU Award. As a holder of a RSU Award, a Participant is an unsecured creditor of the Company with respect to the Company's unfunded obligation, if any, to issue shares of Common Stock in settlement of such Award and nothing contained in the Plan or any RSU Agreement, and no action taken pursuant to its provisions, will create or be construed to create a trust of any kind or a fiduciary relationship between a Participant and the Company or an Affiliate or any other person. A Participant will not have voting or any other rights as a stockholder of the Company with respect to any RSU Award (unless and until shares are actually issued in settlement of a vested RSU Award).

(ii) Consideration. Unless otherwise determined by the Board at the time of grant, a RSU Award will be granted in consideration for the Participant's services to the Company or an Affiliate, such that the Participant will not be required to make any payment to the Company (other than such services) with respect to the grant or vesting of the RSU Award, or the issuance of any shares of Common Stock pursuant to the RSU Award. If, at the time of grant, the Board determines that any consideration must be paid by the Participant (in a form other than the Participant's services to the Company or an Affiliate) upon the issuance of any shares of Common Stock in settlement of the RSU Award, such consideration may be paid in any form of consideration as the Board may determine and permissible under Applicable Law.

(iii) Vesting. The Board may impose such restrictions on or conditions to the vesting of an RSU Award as determined by the Board. Except as otherwise provided in the Award Agreement or other written agreement between a Participant and the Company or an Affiliate, vesting of RSU Awards will cease upon termination of the Participant's Continuous Service.

(iv) Termination of Continuous Service. Except as otherwise provided in the Award Agreement or other written agreement between a Participant and the Company or an Affiliate, if a Participant's Continuous Service terminates for any reason, any portion of his or her RSU Award that has not vested will be forfeited upon such termination and the Participant will have no further right, title or interest in the RSU Award, the shares of Common Stock issuable pursuant to the RSU Award, or any consideration in respect of the RSU Award.

(v) Dividend Equivalents. Dividend equivalents may be paid or credited, as applicable, with respect to any shares of Common Stock subject to a RSU Award, as determined by the Board and specified in the Award Agreement; *provided, however*, that (i) no dividend equivalents may be paid with respect to any such shares subject to an RSU Award before the date such shares have vested under the terms of such Award Agreement, (ii) any dividend equivalents that are credited with respect to any such shares will be subject to all of the terms and conditions applicable to such RSU Award and the covered shares under the terms of such Award Agreement (including, but not limited to, any vesting conditions), and (iii) any dividend equivalents that are credited with respect to any such shares subject to an RSU Award will be forfeited to the Company on the date, if any, such RSU Award is forfeited to by the Company due to a failure to meet any vesting conditions under the terms of such Award Agreement.

(vi) Settlement of RSU Awards. A RSU Award may be settled by the issuance of shares of Common Stock or cash (or any combination thereof) or in any other form of payment, as determined by the Board and specified in the RSU Award Agreement. At the time of grant, the Board may determine to impose such restrictions or conditions that delay such delivery to a date following the vesting of the RSU Award.

(vii) Compliance with Section 409A of the Code. Notwithstanding anything to the contrary set forth herein, any RSU Award granted under the Plan that is not exempt from the requirements of Section 409A of the Code shall contain such provisions so that such RSU Award will comply with the requirements of Section 409A of the Code. Such restrictions, if any, shall be determined by the Board and contained in the Award Agreement evidencing such RSU Award. For example, such restrictions may include, without limitation, a requirement that any Common Stock that is to be issued in a year following the year in which the RSU Award vests must be issued in accordance with a fixed pre-determined schedule.

(c) Time and Performance Vesting. The Committee, in its sole discretion, may impose such restrictions on the vesting of the Participant's Restricted Stock Award or Restricted Stock Units as it may deem advisable or appropriate, in accordance with this Section 6(c).

(i) Service Vesting. The Committee may condition the vesting of a Participant's Restricted Stock Award or Restricted Stock Units upon the Participant's continued performance of services for the Company through a specified vesting date or dates. If the Participant's Continuous Service terminates before such vesting date, the relevant Restricted Stock Award and/or Restricted Stock Units shall be forfeited, except as may otherwise be provided in the Award Agreement.

(ii) Performance Vesting. Alternatively, the Committee may, in its discretion, condition the vesting of all or a portion of the Participant's Restricted Stock Award or Restricted Stock Units upon completion of based upon the achievement of specific Performance Goals (Company-wide, divisional, or individual) or any other basis determined by the Committee in its discretion

(d) Performance Awards. With respect to any RSU Award or other Award designated as a Performance Award, the length of any Performance Period, the Performance Goals to be achieved during the Performance Period, the other terms and conditions of such Award, and the measure of whether and to what degree such Performance Goals have been attained will be determined by the Board.

(e) Other Awards. Other forms of Awards valued in whole or in part by reference to, or otherwise based on, Common Stock, including the appreciation in value thereof (e.g., options or stock rights with an exercise price or strike price less than 100% of the Fair Market Value at the time of grant) may be granted either alone or in addition to Awards provided for under Section 4 and the preceding provisions of this Section 5. Subject to the provisions of the Plan, the Board will have sole and complete discretion to determine the persons to whom and the time or times at which such Other Awards will be granted, the number of shares of Common Stock (or the cash equivalent thereof) to be granted pursuant to such Other Awards and all other terms and conditions of such Other Awards.

7. ADJUSTMENTS UPON CHANGES IN COMMON STOCK; OTHER CORPORATE EVENTS.

(a) Capitalization Adjustments. In the event of a Capitalization Adjustment, the Board shall appropriately and proportionately adjust: (i) the class(es) and maximum number of shares of Common Stock subject to the Plan pursuant to Section 2(a), (ii) the class(es) and maximum number of shares that may be issued pursuant to the exercise of Incentive Stock Options pursuant to Section 2(a), and (iii) the class(es) and number of securities and exercise price, strike price or purchase price of Common Stock subject to outstanding Awards. The Board shall make such adjustments, and its determination shall be final, binding and conclusive. Notwithstanding the foregoing, no fractional shares or rights for fractional shares of Common Stock shall be created in order to implement any Capitalization Adjustment. The Board shall determine an appropriate equivalent benefit, if any, for any fractional shares or rights to fractional shares that might be created by the adjustments referred to in the preceding provisions of this Section.

(b) Dissolution or Liquidation. Except as otherwise provided in the Award Agreement, in the event of a dissolution or liquidation of the Company, all outstanding Awards (other than Awards consisting of vested and outstanding shares of Common Stock not subject to a forfeiture condition or the Company's right of repurchase) will terminate immediately prior to the completion of such dissolution or liquidation, and the shares of Common Stock subject to the Company's repurchase rights or subject to a forfeiture condition may be repurchased or reacquired by the Company notwithstanding the fact that the holder of such Award is providing Continuous Service, provided, however, that the Board may determine to cause some or all Awards to become fully vested, exercisable and/or no longer subject to repurchase or forfeiture (to the extent such Awards have not previously expired or terminated) before the dissolution or liquidation is completed but contingent on its completion.

(c) Corporate Transaction. The following provisions will apply to Awards in the event of a Corporate Transaction unless otherwise provided in the instrument evidencing the Award or any other written agreement between the Company or any Affiliate and the Participant or unless otherwise expressly provided by the Board at the time of grant of an Award.

(i) Awards May Be Assumed. In the event of a Corporate Transaction, any surviving corporation or acquiring corporation (or the surviving or acquiring corporation's parent company) may assume or continue any or all Awards outstanding under the Plan or may substitute similar awards for Awards outstanding under the Plan (including but not limited to, awards to acquire the same consideration paid to the stockholders of the Company pursuant to the Corporate Transaction), and any reacquisition or repurchase rights held by the Company in respect of Common Stock issued pursuant to Awards may be assigned by the Company to the successor of the Company (or the successor's parent company, if any), in connection with such Corporate Transaction. A surviving corporation or acquiring corporation (or its parent) may choose to assume or continue only a portion of an Award or substitute a similar award for only a portion of an Award, or may choose to assume or continue the Awards held by some, but not all Participants. The terms of any assumption, continuation or substitution will be set by the Board.

(ii) Awards Held by Current Participants. In the event of a Corporate Transaction in which the surviving corporation or acquiring corporation (or its parent company) does not assume or continue such outstanding Awards or substitute similar awards for such outstanding Awards, then with respect to Awards that have not been assumed, continued or substituted and that are held by Participants whose Continuous Service has not terminated prior to the effective time of the Corporate Transaction (referred to as the "**Current Participants**"), the vesting of such Awards (and, with respect to Options and Stock Appreciation Rights, the time when such Awards may be exercised) will be accelerated in full to a date prior to the effective time of such Corporate Transaction (contingent upon the effectiveness of the Corporate Transaction) as the Board determines (or, if the Board does not determine such a date, to the date that is five (5) days prior to the effective time of the Corporate Transaction), and such Awards will terminate if not exercised (if applicable) at or prior to the effective time of the Corporate Transaction, and any reacquisition or repurchase rights held by the Company with respect to such Awards will lapse (contingent upon the effectiveness of the Corporate Transaction). With respect to the vesting of Performance Awards that will accelerate upon the occurrence of a Corporate Transaction pursuant to this subsection (ii) and that have multiple vesting levels depending on the level of performance, unless otherwise provided in the Award Agreement, the vesting of such Performance Awards will accelerate at 100% of the target level upon the occurrence of the Corporate Transaction. With respect to the vesting of Awards that will accelerate upon the occurrence of a Corporate Transaction pursuant to this subsection (ii) and are settled in the form of a cash payment, such cash payment will be made no later than 30 days following the occurrence of the Corporate Transaction.

(iii) Awards Held by Persons other than Current Participants. In the event of a Corporate Transaction in which the surviving corporation or acquiring corporation (or its parent company) does not assume or continue such outstanding Awards or substitute similar awards for such outstanding Awards, then with respect to Awards that have not been assumed, continued or substituted and that are held by persons other than Current Participants, such Awards will terminate if not exercised (if applicable) prior to the occurrence of the Corporate Transaction; provided, however, that any reacquisition or repurchase rights held by the Company with respect to such Awards will not terminate and may continue to be exercised notwithstanding the Corporate Transaction.

(iv) Payment for Awards in Lieu of Exercise. Notwithstanding the foregoing, in the event an Award will terminate if not exercised prior to the effective time of a Corporate Transaction, the Board may provide, in its sole discretion, that the holder of such Award may not exercise such Award but will receive a payment, in such form as may be determined by the Board, equal in value, at the effective time, to the excess, if any, of (1) the value of the property the Participant would have received upon the exercise of the Award (including, at the discretion of the Board, any unvested portion of such Award), over (2) any exercise price payable by such holder in connection with such exercise. For clarity, this payment may be zero (\$0) if the value of the property is equal to or less than the exercise price payable by the holder. Payments under this provision may be delayed to the same extent that payment of consideration to the holders of the Company's Common Stock in connection with the Corporate Transaction is delayed as a result of escrows, earn outs, holdbacks or any other contingencies

(d) Appointment of Stockholder Representative. As a condition to the receipt of an Award under this Plan, a Participant will be deemed to have agreed that the Award will be subject to the terms of any agreement governing a Corporate Transaction involving the Company, including, without limitation, a provision for the appointment of a stockholder representative that is authorized to act on the Participant's behalf with respect to any escrow, indemnities and any contingent consideration.

(e) No Restriction on Right to Undertake Transactions. The grant of any Award under the Plan and the issuance of shares pursuant to any Award does not affect or restrict in any way the right or power of the Company or the Stockholders of the Company to make or authorize any adjustment, recapitalization, reorganization or other change in the Company's capital structure or its business, any merger or consolidation of the Company, any issue of stock or of options, rights or options to purchase stock or of bonds, debentures, preferred or prior preference stocks whose rights are superior to or affect the Common Stock or the rights thereof or which are convertible into or exchangeable for Common Stock, or the dissolution or liquidation of the Company, or any sale or transfer of all or any part of its assets or business, or any other corporate act or proceeding, whether of a similar character or otherwise.

8. ADMINISTRATION.

(a) Administration by Compensation Committee. The Compensation Committee of the Board will administer the Plan unless and until the Board delegates administration of the Plan to a different Committee or Committees of the Board.

(b) Powers of Committee. The Committee will have the power, subject to, and within the limitations of, the express provisions of the Plan:

(i) To determine from time to time (1) which of the persons eligible under the Plan will be granted Awards; (2) when and how each Award will be granted; (3) what type or combination of types of Award will be granted; (4) the provisions of each Award granted (which need not be identical), including the time or times when a person will be permitted to receive an issuance of Common Stock or other payment pursuant to an Award; (5) the number of shares of Common Stock or cash equivalent with respect to which an Award will be granted to each such person; and (6) the Fair Market Value applicable to an Award.

(ii) To construe and interpret the Plan and Awards granted under it, and to establish, amend and revoke rules and regulations for its administration. The Committee, in the exercise of this power, may correct any defect, omission or inconsistency in the Plan or in any Award Agreement, in a manner and to the extent it deems necessary or expedient to make the Plan or Award fully effective.

(iii) To settle all controversies regarding the Plan and Awards granted under it.

(iv) To accelerate the time at which an Award may first be exercised or the time during which an Award or any part thereof will vest, notwithstanding the provisions in the Award Agreement stating the time at which it may first be exercised or the time during which it will vest.

(v) To prohibit the exercise of any Option, SAR or other exercisable Award during a period of up to 30 days prior to the consummation of any pending stock dividend, stock split, combination or exchange of shares, merger, consolidation or other distribution (other than normal cash dividends) of Company assets to stockholders, or any other change affecting the shares of Common Stock or the share price of the Common Stock including any Corporate Transaction, for reasons of administrative convenience.

(vi) To approve forms of Award Agreements for use under the Plan and to amend the terms of any one or more Awards, including, but not limited to, amendments to provide terms more favorable to the Participant than previously provided in the Award Agreement, subject to any specified limits in the Plan that are not subject to Board or Committee discretion; *provided however*, that, a Participant's rights under any Award will not be Materially Impaired by any such amendment unless (1) the Company requests the consent of the affected Participant, and (2) such Participant consents in writing.

(vii) Generally, to exercise such powers and to perform such acts as the Committee deems necessary or expedient to promote the best interests of the Company and that are not in conflict with the provisions of the Plan or Awards.

(viii) To adopt such procedures and sub-plans as are necessary or appropriate to permit and facilitate participation in the Plan by, or take advantage of specific tax treatment for Awards granted to, Employees, Directors or Consultants who are foreign nationals or employed outside the United States (provided that Board approval will not be necessary for immaterial modifications to the Plan, and Committee approval will not be necessary for immaterial modifications to any Award Agreement, deemed necessary or desirable to ensure or facilitate compliance with the laws of the relevant foreign jurisdiction).

(c) Rule 16b-3 Compliance. To the extent an Award is intended to qualify for the exemption from Section 16(b) of the Exchange Act that is available under Rule 16b-3 of the Exchange Act, the Award will be granted by the Board or a Committee that consists solely of two or more Non-Employee Directors, as determined under Rule 16b-3(b)(3) of the Exchange Act and thereafter any action establishing or modifying the terms of the Award will be approved by the Board or a Committee meeting such requirements to the extent necessary for such exemption to remain available.

(d) Effect of Committee's Decision. All determinations, interpretations and constructions made by the Committee in good faith will not be subject to review by any person and will be final, binding and conclusive on all persons.

(e) Cancellation and Re-Grant of Awards. Neither the Board nor any Committee will have the authority to: (i) reduce the exercise price or strike price of any outstanding Options or SARs under the Plan, or (ii) cancel any outstanding Options or SARs that have an exercise price or strike price greater than the current Fair Market Value in exchange for cash or other Awards under the Plan, unless the stockholders of the Company have approved such an action within twelve months prior to such an event.

(f) Delegation to an Officer. The Committee may delegate to one or more Officers the authority to do one or both of the following (i) designate Employees who are not Officers to be recipients of Options and SARs (and, to the extent permitted by Applicable Law, other types of Awards) and, to the extent permitted by Applicable Law, the terms thereof, and (ii) determine the number of shares of Common Stock to be subject to such Awards granted to such Employees; provided, however, that the resolutions or charter adopted by the Board or any Committee evidencing such delegation will specify the total number of shares of Common Stock that may be subject to the Awards granted by such Officer and that such Officer may not grant an Award to himself or herself. Any such Awards will be granted on the applicable form of Award Agreement most recently approved for use by the Committee, unless otherwise provided in the resolutions approving the delegation authority. Notwithstanding anything to the contrary herein, neither the Board nor any Committee may delegate to an Officer who is acting solely in the capacity of an Officer (and not also as a Director) the authority to determine the Fair Market Value of shares of the Common Stock.

9. TAX WITHHOLDING

(a) Withholding Authorization. As a condition to acceptance of any Award under the Plan, a Participant authorizes withholding from payroll and any other amounts payable to such Participant, and otherwise agrees to make adequate provision for (including), any sums required to satisfy any U.S. federal, state, local and/or foreign tax or social insurance contribution withholding obligations of the Company or an Affiliate, if any, which arise in connection with the grant, exercise, vesting or settlement of such Award, as applicable. Accordingly, a Participant may not be able to exercise an Award even though the Award is vested, and the Company shall have no obligation to issue shares of Common Stock subject to an Award, unless and until such obligations are satisfied.

(b) Satisfaction of Withholding Obligation. To the extent permitted by the terms of an Award Agreement, the Company may, in its sole discretion, satisfy any U.S. federal, state, local and/or foreign tax or social insurance withholding obligation relating to an Award by any of the following means or by a combination of such means: (i) causing the Participant to tender a cash payment; (ii) withholding shares of Common Stock from the shares of Common Stock issued or otherwise issuable to the Participant in connection with the Award; (iii) withholding cash from an Award settled in cash; (iv) withholding payment from any amounts otherwise payable to the Participant; (v) by allowing a Participant to effectuate a "cashless exercise" pursuant to a program developed under Regulation T as promulgated by the Federal Reserve Board, or (vi) by such other method as may be set forth in the Award Agreement.

(c) No Obligation to Notify or Minimize Taxes; No Liability to Claims. Except as required by Applicable Law the Company has no duty or obligation to any Participant to advise such holder as to the time or manner of exercising such Award. Furthermore, the Company has no duty or obligation to warn or otherwise advise such holder of a pending termination or expiration of an Award or a possible period in which the Award may not be exercised. The Company has no duty or obligation to minimize the tax consequences of an Award to the holder of such Award and will not be liable to any holder of an Award for any adverse tax consequences to such holder in connection with an Award. As a condition to accepting an Award under the Plan, each Participant (i) agrees to not make any claim against the Company, or any of its Officers, Directors, Employees or Affiliates related to tax liabilities arising from such Award or other Company compensation and (ii) acknowledges that such Participant was advised to consult with his or her own personal tax, financial and other legal advisors regarding the tax consequences of the Award and has either done so or knowingly and voluntarily declined to do so. Additionally, each Participant acknowledges any Option or SAR granted under the Plan is exempt from Section 409A only if the exercise or strike price is at least equal to the “fair market value” of the Common Stock on the date of grant as determined by the Internal Revenue Service and there is no other impermissible deferral of compensation associated with the Award. Additionally, as a condition to accepting an Option or SAR granted under the Plan, each Participant agrees not make any claim against the Company, or any of its Officers, Directors, Employees or Affiliates in the event that the Internal Revenue Service asserts that such exercise price or strike price is less than the “fair market value” of the Common Stock on the date of grant as subsequently determined by the Internal Revenue Service.

(d) Withholding Indemnification. As a condition to accepting an Award under the Plan, in the event that the amount of the Company’s and/or its Affiliate’s withholding obligation in connection with such Award was greater than the amount actually withheld by the Company and/or its Affiliates, each Participant agrees to indemnify and hold the Company and/or its Affiliates harmless from any failure by the Company and/or its Affiliates to withhold the proper amount.

10. MISCELLANEOUS.

(a) Source of Shares. The stock issuable under the Plan will be shares of authorized but unissued or reacquired Common Stock, including shares repurchased by the Company on the open market or otherwise.

(b) Use of Proceeds from Sales of Common Stock. Proceeds from the sale of shares of Common Stock pursuant to Awards will constitute general funds of the Company.

(c) Corporate Action Constituting Grant of Awards. Corporate action constituting a grant by the Company of an Award to any Participant will be deemed completed as of the date of such corporate action, unless otherwise determined by the Board or the Committee, regardless of when the instrument, certificate, or letter evidencing the Award is communicated to, or actually received or accepted by, the Participant. In the event that the corporate records (e.g., Committee consents, Board consents, resolutions or minutes) documenting the corporate action approving the grant contain terms (e.g., exercise price, vesting schedule or number of shares) that are inconsistent with those in the Award Agreement or related grant documents as a result of a clerical error in the Award Agreement or related grant documents, the corporate records will control and the Participant will have no legally binding right to the incorrect term in the Award Agreement or related grant documents.

(d) Stockholder Rights. No Participant will be deemed to be the holder of, or to have any of the rights of a holder with respect to, any shares of Common Stock subject to such Award unless and until (i) such Participant has satisfied all requirements for exercise of the Award pursuant to its terms, if applicable, and (ii) the issuance of the Common Stock subject to such Award is reflected in the records of the Company.

(e) No Employment or Other Service Rights. Nothing in the Plan, any Award Agreement or any other instrument executed thereunder or in connection with any Award granted pursuant thereto will confer upon any Participant any right to continue to serve the Company or an Affiliate in the capacity in effect at the time the Award was granted or affect the right of the Company or an Affiliate to terminate at will and without regard to any future vesting opportunity that a Participant may have with respect to any Award (i) the employment of an Employee with or without notice and with or without cause, (ii) the service of a Consultant pursuant to the terms of such Consultant's agreement with the Company or an Affiliate, or (iii) the service of a Director pursuant to the Bylaws of the Company or an Affiliate, and any applicable provisions of the corporate law of the state or foreign jurisdiction in which the Company or the Affiliate is incorporated, as the case may be. Further, nothing in the Plan, any Award Agreement or any other instrument executed thereunder or in connection with any Award will constitute any promise or commitment by the Company or an Affiliate regarding the fact or nature of future positions, future work assignments, future compensation or any other term or condition of employment or service or confer any right or benefit under the Award or the Plan unless such right or benefit has specifically accrued under the terms of the Award Agreement and/or Plan.

(f) Change in Time Commitment. In the event a Participant's regular level of time commitment in the performance of his or her services for the Company and any Affiliates is reduced (for example, and without limitation, if the Participant is an Employee of the Company and the Employee has a change in status from a full-time Employee to a part-time Employee or takes an extended leave of absence) after the date of grant of any Award to the Participant, the Board may determine, to the extent permitted by Applicable Law, to (i) make a corresponding reduction in the number of shares or cash amount subject to any portion of such Award that is scheduled to vest or become payable after the date of such change in time commitment, and (ii) in lieu of or in combination with such a reduction, extend the vesting or payment schedule applicable to such Award. In the event of any such reduction, the Participant will have no right with respect to any portion of the Award that is so reduced or extended.

(g) Execution of Additional Documents. As a condition to accepting an Award under the Plan, the Participant agrees to execute any additional documents or instruments necessary or desirable, as determined in the Plan Administrator's sole discretion, to carry out the purposes or intent of the Award, or facilitate compliance with securities and/or other regulatory requirements, in each case at the Plan Administrator's request.

(h) Electronic Delivery and Participation. Any reference herein or in an Award Agreement to a "written" agreement or document will include any agreement or document delivered electronically, filed publicly at www.sec.gov (or any successor website thereto) or posted on the Company's intranet (or other shared electronic medium controlled by the Company to which the Participant has access). By accepting any Award the Participant consents to receive documents by electronic delivery and to participate in the Plan through any on-line electronic system established and maintained by the Plan Administrator or another third party selected by the Plan Administrator. The form of delivery of any Common Stock (e.g., a stock certificate or electronic entry evidencing such shares) shall be determined by the Company.

(i) Clawback/Recovery. All Awards granted under the Plan will be subject to recoupment in accordance with any clawback policy that the Company is required to adopt pursuant to the listing standards of any national securities exchange or association on which the Company's securities are listed or as is otherwise required by the Dodd-Frank Wall Street Reform and Consumer Protection Act or other Applicable Law and any clawback policy that the Company otherwise adopts, to the extent applicable and permissible under Applicable Law. In addition, the Board may impose such other clawback, recovery or recoupment provisions in an Award Agreement as the Board determines necessary or appropriate, including but not limited to a reacquisition right in respect of previously acquired shares of Common Stock or other cash or property upon the occurrence of Cause. No recovery of compensation under such a clawback policy will be an event giving rise to a Participant's right to voluntarily terminate employment upon a "resignation for good reason," or for a "constructive termination" or any similar term under any plan of or agreement with the Company.

(j) Securities Law Compliance. A Participant will not be issued any shares in respect of an Award unless either (i) the shares are registered under the Securities Act; or (ii) the Company has determined that such issuance would be exempt from the registration requirements of the Securities Act. Each Award also must comply with other Applicable Law governing the Award, and a Participant will not receive such shares if the Company determines that such receipt would not be in material compliance with Applicable Law.

(k) Transfer or Assignment of Awards; Issued Shares. Except as expressly provided in the Plan or the form of Award Agreement, Awards granted under the Plan may not be transferred or assigned by the Participant. After the vested shares subject to an Award have been issued, or in the case of Restricted Stock and similar awards, after the issued shares have vested, the holder of such shares is free to assign, hypothecate, donate, encumber or otherwise dispose of any interest in such shares provided that any such actions are in compliance with the provisions herein, the terms of the Trading Policy and Applicable Law.

(l) Effect on Other Employee Benefit Plans. The value of any Award granted under the Plan, as determined upon grant, vesting or settlement, shall not be included as compensation, earnings, salaries, or other similar terms used when calculating any Participant's benefits under any employee benefit plan sponsored by the Company or any Affiliate, except as such plan otherwise expressly provides. The Company expressly reserves its rights to amend, modify, or terminate any of the Company's or any Affiliate's employee benefit plans.

(m) Section 409A. Unless otherwise expressly provided for in an Award Agreement, the Plan and Award Agreements will be interpreted to the greatest extent possible in a manner that makes the Plan and the Awards granted hereunder exempt from Section 409A, and, to the extent not so exempt, in compliance with the requirements of Section 409A. If the Board determines that any Award granted hereunder is not exempt from and is therefore subject to Section 409A, the Award Agreement evidencing such Award will incorporate the terms and conditions necessary to avoid the consequences specified in Section 409A(a)(1) of the Code, and to the extent an Award Agreement is silent on terms necessary for compliance, such terms are hereby incorporated by reference into the Award Agreement. Notwithstanding anything to the contrary in this Plan (and unless the Award Agreement specifically provides otherwise), if the shares of Common Stock are publicly traded, and if a Participant holding an Award that constitutes "deferred compensation" under Section 409A is a "specified employee" for purposes of Section 409A, no distribution or payment of any amount that is due because of a "separation from service" (as defined in Section 409A without regard to alternative definitions thereunder) will be issued or paid before the date that is six months and one day following the date of such Participant's "separation from service" or, if earlier, the date of the Participant's death, unless such distribution or payment can be made in a manner that complies with Section 409A, and any amounts so deferred will be paid in a lump sum on the day after such six month period elapses, with the balance paid thereafter on the original schedule.

(n) Choice of Law. This Plan and any controversy arising out of or relating to this Plan shall be governed by, and construed in accordance with, the internal laws of the State of Delaware without regard to conflict of law principles that would result in any application of any law other than the law of the State of Delaware.

11. COVENANTS OF THE COMPANY. COMPLIANCE WITH LAW.

The Company will seek to obtain from each regulatory commission or agency, as may be deemed to be necessary, having jurisdiction over the Plan such authority as may be required to grant Awards and to issue and sell shares of Common Stock upon exercise or vesting of the Awards; provided, however, that this undertaking will not require the Company to register under the Securities Act the Plan, any Award or any Common Stock issued or issuable pursuant to any such Award. If, after reasonable efforts and at a reasonable cost, the Company is unable to obtain from any such regulatory commission or agency the authority that counsel for the Company deems necessary or advisable for the lawful issuance and sale of Common Stock under the Plan, the Company will be relieved from any liability for failure to issue and sell Common Stock upon exercise or vesting of such Awards unless and until such authority is obtained. A Participant is not eligible for the grant of an Award or the subsequent issuance of Common Stock pursuant to the Award if such grant or issuance would be in violation of any Applicable Law.

12. SEVERABILITY.

If all or any part of the Plan or any Award Agreement is declared by any court or governmental authority to be unlawful or invalid, such unlawfulness or invalidity shall not invalidate any portion of the Plan or such Award Agreement not declared to be unlawful or invalid. Any Section of the Plan or any Award Agreement (or part of such a Section) so declared to be unlawful or invalid shall, if possible, be construed in a manner which will give effect to the terms of such Section or part of a Section to the fullest extent possible while remaining lawful and valid.

13. AMENDMENT OF TERMINATION OF THE PLAN.

(a) Termination. The Board may suspend or terminate the Plan at any time. No Incentive Stock Options may be granted after the tenth anniversary of the earlier of (i) the Adoption Date, or (ii) the Effective Date. No Awards may be granted under the Plan while the Plan is suspended or after it is terminated.

(b) Amendment. The Board, in its sole discretion, may amend the Plan in any respect the Board deems necessary or advisable; provided, however, that Stockholder approval will be required for any amendment to the extent required by Applicable Law.

(c) Effect on Prior Awards. No Participant's rights under any Award granted before the amendment or termination of the Plan will be Materially Impaired by any amendment, suspension, or termination of the Plan unless (1) the Company requests the consent of the affected Participant, and (2) such Participant consents in writing, provided that such consent shall not be required if the Board determines, in its sole and absolute discretion, that the amendment, suspension or termination: (a) is required or advisable in order for the Company, the Plan or the Award to satisfy applicable law, to meet the requirements of any accounting standard or to avoid any adverse accounting treatment, or (b) in connection with any transaction or event described in Section 7(c), is in the best interests of the Company or its stockholders.

14. DEFINITIONS.

As used in the Plan, the following definitions apply to the capitalized terms indicated below:

(a) “**Acquiring Entity**” means the surviving or acquiring corporation (or its parent company) in connection with a Corporate Transaction.

(b) “**Adoption Date**” means the date the Plan is first approved by the Board or Compensation Committee.

(c) “**Affiliate**” means, at the time of determination, any “parent” or “subsidiary” of the Company as such terms are defined in Rule 405 promulgated under the Securities Act. The Board may determine the time or times at which “parent” or “subsidiary” status is determined within the foregoing definition.

(d) “**Applicable Law**” means shall mean any applicable securities, federal, state, foreign, material local or municipal or other law, statute, constitution, principle of common law, resolution, ordinance, code, edict, decree, rule, listing rule, regulation, judicial decision, ruling or requirement issued, enacted, adopted, promulgated, implemented or otherwise put into effect by or under the authority of any Governmental Body (including under the authority of any applicable self-regulating organization such as the Nasdaq Stock Market, New York Stock Exchange, or the Financial Industry Regulatory Authority).

(e) “**Award**” means any right to receive Common Stock, cash or other property granted under the Plan (including an Incentive Stock Option, a Nonstatutory Stock Option, a Restricted Stock Award, a RSU Award, a SAR, a Performance Award or any Other Award).

(f) “**Award Agreement**” means a written agreement between the Company and a Participant evidencing the terms and conditions of an Award. The Award Agreement generally consists of the Grant Notice and the agreement containing the written summary of the general terms and conditions applicable to the Award and which is provided to a Participant along with the Grant Notice.

(g) “**Board**” means the Board of Directors of the Company (or its designee). Any decision or determination made by the Board shall be a decision or determination that is made in the sole discretion of the Board (or its designee), and such decision or determination shall be final and binding on all Participants.

(h) “**Capitalization Adjustment**” means any change that is made in, or other events that occur with respect to, the Common Stock subject to the Plan or subject to any Award after the Effective Date without the receipt of consideration by the Company through merger, consolidation, reorganization, recapitalization, reincorporation, stock dividend, dividend in property other than cash, large nonrecurring cash dividend, stock split, reverse stock split, liquidating dividend, combination of shares, exchange of shares, change in corporate structure or any similar equity restructuring transaction, as that term is used in Statement of Financial Accounting Standards Board Accounting Standards Codification Topic 718 (or any successor thereto). Notwithstanding the foregoing, the conversion of any convertible securities of the Company will not be treated as a Capitalization Adjustment.

(i) “**Cause**” has the meaning ascribed to such term in any written agreement between the Participant and the Company defining such term and, in the absence of such agreement, such term means, with respect to a Participant, the occurrence of any of the following events: (i) the commission of an act of fraud, embezzlement, theft or proven dishonesty, or any other illegal act or practice (whether or not resulting in criminal prosecution or conviction), including theft or destruction of property of the Company or a subsidiary, or any other act or practice which the Committee shall, in good faith, deem to have resulted in the recipient’s becoming unbondable under the Company or any subsidiary’s fidelity bond; (ii) the willful engaging in misconduct which is deemed by the Committee, in good faith, to be materially injurious to the Company or any subsidiary, monetarily or otherwise, including, but not limited to, improperly disclosing trade secrets or other confidential or sensitive business information and data about the Company or any subsidiaries and competing with the Company or any subsidiaries, or soliciting employees, consultants or customers of the Company or any subsidiaries in violation of law or any employment or other agreement to which the recipient is a party; (iii) the continued failure or habitual neglect by a person who is a Participant to perform his or her duties with the Company or any subsidiary; or (iv) other disregard of rules or policies of the Company or any subsidiary, or conduct evidencing willful or wanton disregard of the interests of the Company or any subsidiary.

(j) “**Code**” means the Internal Revenue Code of 1986, as amended, including any applicable regulations and guidance thereunder.

(k) “**Committee**” means the Compensation Committee and any other committee of Directors to whom authority has been delegated by the Board or Compensation Committee in accordance with the Plan.

(l) “**Common Stock**” means the common stock of the Company.

(m) “**Company**” means **Blue Water Vaccines Inc.**, a Delaware corporation.

(n) “**Compensation Committee**” means the Compensation Committee of the Board.

(o) “**Consultant**” means any person, including an advisor, who is (i) engaged by the Company or an Affiliate to render consulting or advisory services and is compensated for such services, or (ii) serving as a member of the board of directors of an Affiliate and is compensated for such services. However, service solely as a Director, or payment of a fee for such service, will not cause a Director to be considered a “Consultant” for purposes of the Plan. Notwithstanding the foregoing, a person is treated as a Consultant under this Plan only if a Form S-8 Registration Statement under the Securities Act is available to register either the offer or the sale of the Company’s securities to such person.

(p) “**Continuous Service**” means that the Participant’s service with the Company or an Affiliate, whether as an Employee, Director or Consultant, is not interrupted or terminated. A change in the capacity in which the Participant renders service to the Company or an Affiliate as an Employee, Director or Consultant or a change in the Entity for which the Participant renders such service, provided that there is no interruption or termination of the Participant’s service with the Company or an Affiliate, will not terminate a Participant’s Continuous Service; provided, however, that if the Entity for which a Participant is rendering services ceases to qualify as an Affiliate, as determined by the Board, such Participant’s Continuous Service will be considered to have terminated on the date such Entity ceases to qualify as an Affiliate. For example, a change in status from an Employee of the Company to a Consultant of an Affiliate or to a Director will not constitute an interruption of Continuous Service. To the extent permitted by law, the Board or the chief executive officer of the Company, in that party’s sole discretion, may determine whether Continuous Service will be considered interrupted in the case of (i) any leave of absence approved by the Board or chief executive officer, including sick leave, military leave or any other personal leave, or (ii) transfers between the Company, an Affiliate, or their successors. Notwithstanding the foregoing, a leave of absence will be treated as Continuous Service for purposes of vesting in an Award only to such extent as may be provided in the Company’s leave of absence policy, in the written terms of any leave of absence agreement or policy applicable to the Participant, or as otherwise required by law. In addition, to the extent required for exemption from or compliance with Section 409A, the determination of whether there has been a termination of Continuous Service will be made, and such term will be construed, in a manner that is consistent with the definition of “separation from service” as defined under Treasury Regulation Section 1.409A-1(h) (without regard to any alternative definition thereunder).

(q) “Corporate Transaction” means the consummation, in a single transaction or in a series of related transactions, of any one or more of the following events, provided, however, to the extent necessary to avoid adverse personal income tax consequences to the Participant under Section 409A of the Code in connection with an Award, such transaction or series of transactions, also constitutes a Section 409A Change in Control:

(i) a sale or other disposition of all or substantially all, as determined by the Board, of the consolidated assets of the Company and its Subsidiaries;

(ii) a sale or other disposition of at least 50% of the outstanding securities of the Company;

(iii) a merger, consolidation or similar transaction following which the Company is not the surviving corporation; or

(iv) a merger, consolidation or similar transaction following which the Company is the surviving corporation but the shares of Common Stock outstanding immediately preceding the merger, consolidation or similar transaction are converted or exchanged by virtue of the merger, consolidation or similar transaction into other property, whether in the form of securities, cash or otherwise.

(r) “Director” means a member of the Board.

(s) “determine” or “determined” means as determined by the Board or the Committee (or its designee) in its sole discretion.

(t) “Disability” means, with respect to a Participant, such Participant is unable to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment which can be expected to result in death or which has lasted or can be expected to last for a continuous period of not less than 12 months, as provided in Section 22(e)(3) of the Code, and will be determined by the Board on the basis of such medical evidence as the Board deems warranted under the circumstances. In making such a determination, the Board may rely upon a determination by the Social Security Administration that the Participant is disable for purposes of eligibility for Social Security disability benefits.

(u) “Effective Date” means the IPO Date, provided this Plan is approved by the Company’s stockholders prior to the IPO Date.

(v) “Employee” means any person employed by the Company or an Affiliate. However, service solely as a Director, or payment of a fee for such services, will not cause a Director to be considered an “Employee” for purposes of the Plan.

(w) “Employer” means the Company or the Affiliate of the Company that employs the Participant.

(x) “Entity” means a corporation, partnership, limited liability company or other entity.

(y) “**Exchange Act**” means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

(z) “**Fair Market Value**” means, as of any date, unless otherwise determined by the Board, the value of the Common Stock (as determined on a per share or aggregate basis, as applicable) determined as follows:

(i) If the Common Stock is listed on any established stock exchange or traded on any established market, the Fair Market Value will be the closing sales price for such stock as quoted on such exchange or market (or the exchange or market with the greatest volume of trading in the Common Stock) on the date of determination, as reported in a source the Board deems reliable.

(ii) If there is no closing sales price for the Common Stock on the date of determination, then the Fair Market Value will be the closing selling price on the last preceding date for which such quotation exists.

(iii) In the absence of such markets for the Common Stock, or if otherwise determined by the Board, the Fair Market Value will be determined by the Board in good faith and in a manner that complies with Sections 409A and 422 of the Code.

(aa) “**Governmental Body**” means any: (a) nation, state, commonwealth, province, territory, county, municipality, district or other jurisdiction of any nature; (b) federal, state, local, municipal, foreign or other government; (c) governmental or regulatory body, or quasi-governmental body of any nature (including any governmental division, department, administrative agency or bureau, commission, authority, instrumentality, official, ministry, fund, foundation, center, organization, unit, body or Entity and any court or other tribunal, and for the avoidance of doubt, any Tax authority) or other body exercising similar powers or authority; or (d) self-regulatory organization (including the Nasdaq Stock Market, New York Stock Exchange, and the Financial Industry Regulatory Authority).

(bb) “**Grant Notice**” means the notice provided to a Participant that he or she has been granted an Award under the Plan and which includes the name of the Participant, the type of Award, the date of grant of the Award, number of shares of Common Stock subject to the Award or potential cash payment right, (if any), the vesting schedule for the Award (if any) and other key terms applicable to the Award.

(cc) “**Incentive Stock Option**” means an option granted pursuant to Section 4 of the Plan that is intended to be, and qualifies as, an “incentive stock option” within the meaning of Section 422 of the Code.

(dd) “**IPO Date**” means the date on which the Company completes an underwritten initial public offering of the Common Stock.

(ee) “**Materially Impair**” means any amendment to the terms of the Award that materially adversely affects the Participant’s rights under the Award. A Participant’s rights under an Award will not be deemed to have been Materially Impaired by any such amendment if the Board, in its sole discretion, determines that the amendment, taken as a whole, does not materially impair the Participant’s rights. For example, the following types of amendments to the terms of an Award do not Materially Impair the Participant’s rights under the Award: (i) imposition of reasonable restrictions on the minimum number of shares subject to an Option that may be exercised, (ii) to maintain the qualified status of the Award as an Incentive Stock Option under Section 422 of the Code; (iii) to change the terms of an Incentive Stock Option in a manner that disqualifies, impairs or otherwise affects the qualified status of the Award as an Incentive Stock Option under Section 422 of the Code; (iv) to clarify the manner of exemption from, or to bring the Award into compliance with or qualify it for an exemption from, Section 409A; or (v) to comply with other Applicable Laws.

(ff) “Non-Employee Director” means a Director who either (i) is not a current employee or officer of the Company or an Affiliate, does not receive compensation, either directly or indirectly, from the Company or an Affiliate for services rendered as a consultant or in any capacity other than as a Director (except for an amount as to which disclosure would not be required under Item 404(a) of Regulation S-K promulgated pursuant to the Securities Act (“**Regulation S-K**”)), does not possess an interest in any other transaction for which disclosure would be required under Item 404(a) of Regulation S-K, and is not engaged in a business relationship for which disclosure would be required pursuant to Item 404(b) of Regulation S-K; or (ii) is otherwise considered a “non-employee director” for purposes of Rule 16b-3.

(gg) “Nonstatutory Stock Option” means any option granted pursuant to Section 4 of the Plan that does not qualify as an Incentive Stock Option.

(hh) “Officer” means a person who is an officer of the Company within the meaning of Section 16 of the Exchange Act.

(ii) “Option” means an Incentive Stock Option or a Nonstatutory Stock Option to purchase shares of Common Stock granted pursuant to the Plan.

(jj) “Option Agreement” means a written agreement between the Company and the Optionholder evidencing the terms and conditions of the Option grant. The Option Agreement includes the Grant Notice for the Option and the agreement containing the written summary of the general terms and conditions applicable to the Option and which is provided to a Participant along with the Grant Notice. Each Option Agreement will be subject to the terms and conditions of the Plan.

(kk) “Optionholder” means a person to whom an Option is granted pursuant to the Plan or, if applicable, such other person who holds an outstanding Option.

(ll) “Other Award” means an award based in whole or in part by reference to the Common Stock which is granted pursuant to the terms and conditions of Section 6(e).

(mm) “Other Award Agreement” means a written agreement between the Company and a holder of an Other Award evidencing the terms and conditions of an Other Award grant. Each Other Award Agreement will be subject to the terms and conditions of the Plan.

(nn) “Own,” “Owned,” “Owner,” “Ownership” means that a person or Entity will be deemed to “Own,” to have “Owned,” to be the “Owner” of, or to have acquired “Ownership” of securities if such person or Entity, directly or indirectly, through any contract, arrangement, understanding, relationship or otherwise, has or shares voting power, which includes the power to vote or to direct the voting, with respect to such securities.

(oo) “Participant” means an Employee, Director or Consultant to whom an Award is granted pursuant to the Plan or, if applicable, such other person who holds an outstanding Award.

(pp) “Performance Award” means a Restricted Stock Unit Award or other Award that may vest or may be exercised or a cash award that may vest or become earned and paid contingent upon the attainment during a Performance Period of certain Performance Goals and which is granted under the terms and conditions of Section 5 pursuant to such terms as are approved by the Board or the Committee. In addition, to the extent permitted by Applicable Law and set forth in the applicable Award Agreement, the Committee may determine that cash or other property may be used in payment of Performance Awards. Performance Awards that are settled in cash or other property are not required to be valued in whole or in part by reference to, or otherwise based on, the Common Stock.

(qq) “Performance Criteria” means the one or more criteria that the Board or Committee will select for purposes of establishing the Performance Goals for a Performance Period. The Performance Criteria that will be used to establish such Performance Goals may be based on any measure of performance selected by the Board or Committee.

(rr) “Performance Goals” means, for a Performance Period, the one or more goals established by the Board or Committee for the Performance Period based upon the Performance Criteria. Performance Goals may be based on a Company-wide basis, with respect to one or more business units, divisions, Affiliates, or business segments, and in either absolute terms or relative to the performance of one or more comparable companies or the performance of one or more relevant indices. Unless specified otherwise by the Board (i) in the Award Agreement at the time the Award is granted or (ii) in such other document setting forth the Performance Goals at the time the Performance Goals are established, the Board or Committee will appropriately make adjustments in the method of calculating the attainment of Performance Goals for a Performance Period as follows: (1) to exclude restructuring and/or other nonrecurring charges; (2) to exclude exchange rate effects; (3) to exclude the effects of changes to generally accepted accounting principles; (4) to exclude the effects of any statutory adjustments to corporate tax rates; (5) to exclude the effects of items that are “unusual” in nature or occur “infrequently” as determined under generally accepted accounting principles; (6) to exclude the dilutive effects of acquisitions or joint ventures; (7) to assume that any business divested by the Company achieved performance objectives at targeted levels during the balance of a Performance Period following such divestiture; (8) to exclude the effect of any change in the outstanding shares of common stock of the Company by reason of any stock dividend or split, stock repurchase, reorganization, recapitalization, merger, consolidation, spin-off, combination or exchange of shares or other similar corporate change, or any distributions to common stockholders other than regular cash dividends; (9) to exclude the effects of stock based compensation and the award of bonuses under the Company’s bonus plans; (10) to exclude costs incurred in connection with potential acquisitions or divestitures that are required to expensed under generally accepted accounting principles; (11) to exclude the goodwill and intangible asset impairment charges that are required to be recorded under generally accepted accounting principles; and (12) to exclude the effects of the timing of acceptance for review and/or approval of submissions to the U.S. Food and Drug Administration or any other regulatory body. In addition, the Committee retains the discretion to reduce or eliminate the compensation or economic benefit due upon attainment of Performance Goals and to define the manner of calculating the Performance Criteria it selects to use for such Performance Period. Partial achievement of the specified criteria may result in the payment or vesting corresponding to the degree of achievement as specified in the Award Agreement or the written terms of a Performance Cash Award.

(ss) “Performance Period” means the period of time selected by the Committee or the Board over which the attainment of one or more Performance Goals will be measured for the purpose of determining a Participant’s right to vesting or exercise of an Award. Performance Periods may be of varying and overlapping duration, at the sole discretion of the Committee or the Board.

(tt) “Plan” means this Blue Water Vaccines Inc. 2021 Equity Incentive Plan.

(uu) “Plan Administrator” means the person, persons, and/or third-party administrator designated by the Company to administer the day to day operations of the Plan and the Company’s other equity incentive programs.

(vv) “Post-Termination Exercise Period” means the period following termination of a Participant’s Continuous Service within which an Option or SAR is exercisable, as specified in Section 4(g) or Section 5(g), as applicable.

(ww) “Prior Plan Available Reserve” means the number of shares available for the grant of new awards under the Prior Plan as of the date immediately prior to the Effective Date.

(xx) “Prior Plan” mean the Blue Water Vaccines Inc. 2019 Equity Incentive Plan, as amended from time to time.

(yy) “**Restricted Stock Award**” or “**RSA**” means an Award of shares of Common Stock which is granted pursuant to the terms and conditions of Section 6(a).

(zz) “**Restricted Stock Award Agreement**” means a written agreement between the Company and a holder of a Restricted Stock Award evidencing the terms and conditions of a Restricted Stock Award grant. The Restricted Stock Award Agreement includes the Grant Notice for the Restricted Stock Award and the agreement containing the written summary of the general terms and conditions applicable to the Restricted Stock Award and which is provided to a Participant along with the Grant Notice. Each Restricted Stock Award Agreement will be subject to the terms and conditions of the Plan.

(aaa) “**Returning Shares**” means shares subject to outstanding stock awards granted under the Prior Plan and that following the Effective Date: (A) are not issued because such stock award or any portion thereof expires or otherwise terminates without all of the shares covered by such stock award having been issued; (B) are not issued because such stock award or any portion thereof is settled in cash; (C) are forfeited back to or repurchased by the Company because of the failure to meet a contingency or condition required for the vesting of such shares; (D) are withheld or reacquired to satisfy the exercise, strike or purchase price; or (E) are withheld or reacquired to satisfy a tax withholding obligation.

(bbb) “**RSU Award**” or “**RSU**” means an Award of restricted stock units representing the right to receive an issuance of shares of Common Stock which is granted pursuant to the terms and conditions of Section 6(b).

(ccc) “**RSU Award Agreement**” means a written agreement between the Company and a holder of a RSU Award evidencing the terms and conditions of a RSU Award grant. The RSU Award Agreement includes the Grant Notice for the RSU Award and the agreement containing the written summary of the general terms and conditions applicable to the RSU Award and which is provided to a Participant along with the Grant Notice. Each RSU Award Agreement will be subject to the terms and conditions of the Plan.

(ddd) “**Rule 16b-3**” means Rule 16b-3 promulgated under the Exchange Act or any successor to Rule 16b-3, as in effect from time to time.

(eee) “**Rule 405**” means Rule 405 promulgated under the Securities Act.

(fff) “**Section 409A**” means Section 409A of the Code and the regulations and other guidance thereunder.

(ggg) “**Section 409A Change in Control**” means a change in the ownership or effective control of the Company, or in the ownership of a substantial portion of the Company’s assets, as provided in Section 409A(a)(2)(A)(v) of the Code and Treasury Regulations Section 1.409A-3(i)(5) (without regard to any alternative definition thereunder).

(hhh) “*Securities Act*” means the Securities Act of 1933, as amended.

(iii) “*Share Reserve*” means the number of shares available for issuance under the Plan as set forth in Section 2(a).

(jjj) “*Stock Appreciation Right*” or “*SAR*” means a right to receive the appreciation on Common Stock that is granted pursuant to the terms and conditions of Section 5.

(kkk) “*SAR Agreement*” means a written agreement between the Company and a holder of a SAR evidencing the terms and conditions of a SAR grant. The SAR Agreement includes the Grant Notice for the SAR and the agreement containing the written summary of the general terms and conditions applicable to the SAR and which is provided to a Participant along with the Grant Notice. Each SAR Agreement will be subject to the terms and conditions of the Plan.

(lll) “*Subsidiary*” means, with respect to the Company, (i) any corporation of which more than 50% of the outstanding capital stock having ordinary voting power to elect a majority of the board of directors of such corporation (irrespective of whether, at the time, stock of any other class or classes of such corporation will have or might have voting power by reason of the happening of any contingency) is at the time, directly or indirectly, Owned by the Company, and (ii) any partnership, limited liability company or other entity in which the Company has a direct or indirect interest (whether in the form of voting or participation in profits or capital contribution) of more than 50%.

(mmm) “*Ten Percent Stockholder*” means a person who Owns (or is deemed to Own pursuant to Section 424(d) of the Code) stock possessing more than 10% of the total combined voting power of all classes of stock of the Company or any Affiliate.

(nnn) “*Trading Policy*” means the Company’s policy permitting certain individuals to sell Company shares only during certain “window” periods and/or otherwise restricts the ability of certain individuals to transfer or encumber Company shares, as in effect from time to time.

Additional Terms/Acknowledgements: The undersigned Participant acknowledges receipt of, and understands and agrees to, this Stock Option Grant Notice, the Stock Option Grant Agreement and the Plan. Participant further acknowledges that as of the Date of Grant, this Stock Option Grant Notice, the Stock Option Grant Agreement and the Plan set forth the entire understanding between Participant and the Company regarding the acquisition of stock in the Company and supersede all prior oral and written agreements on that subject:

BLUE WATER VACCINES INC.

PARTICIPANT:

By: _____
Name: Joseph Hernandez
Title: Chief Executive Officer

Name: _____

**BLUE WATER VACCINES INC.
2019 EQUITY INCENTIVE PLAN**

STOCK OPTION GRANT AGREEMENT (CONSULTANTS)

Pursuant to your Stock Option Grant Notice (“Grant Notice”) and this Stock Option Grant Agreement, Blue Water Vaccines Inc. (the “Company”) has granted you stock options under its 2019 Equity Incentive Plan (the “Plan”) to purchase the number of shares of the Company’s common stock, \$0.00001 par value per share (the “Common Stock”) indicated in your Grant Notice at the exercise price indicated in your Grant Notice. Defined terms not explicitly defined in this Stock Option Grant Agreement but defined in the Plan shall have the same definitions as in the Plan.

The terms and conditions of your Stock Options are as follows:

1. **Grant of Stock Options.** The Company hereby grants you the right and option to purchase that number of shares of the Common Stock of the Company set forth in your Stock Option Grant Notice (the “Shares”), subject to satisfaction of the vesting schedule set forth in your Stock Option Grant Notice and the other conditions set forth in this Agreement and the terms of the Plan. None of your Stock Options will qualify as incentive stock options under Section 422 of the Code.

All of the terms of the Plan relating to Stock Options are incorporated into this Agreement by reference.

2. **Continued Services and Other Covenants of the Grantee.** In consideration for the Options, you (the “Participant”) agree to:

- (a) continue providing services to the Company as a Consultant (or as an Employee, if you later become employed by the Company) through the Vesting Dates described in Section 3; and
- (b) execute a joinder or other documentation necessary to become a party to the Stockholder Agreements with the Company before any shares of the Common Stock are issued to you pursuant to exercise of the Stock Options; and
- (c) execute a non-competition agreement with the Company and be bound by the covenant not to compete and other restrictive covenants set forth in such non-competition agreement, as described in Section 12 of this Agreement.

You agree that your execution of a Joinder to the Stockholder Agreements and the non-competition agreement are conditions to the Company’s obligation to issue any shares of Common Stock to you pursuant to your exercise of the Stock Options granted under this Agreement.

3. **Vesting Schedule.** (a) Unless some or all of the Stock Options granted to you under this Agreement have become vested at an earlier date pursuant to Subsection 3(c) below, the Stock Options shall vest and become exercisable on the Vesting Dates specified in the Vesting Schedule in your Grant Notice, but only if you have remained in “Continuous Service” by the Company through those Vesting Dates.

(b) For purposes of this Agreement, the term “Continuous Service” with the Company means that your performance of services for the Company or one of the Company’s subsidiaries, whether as an Employee or Consultant, is not interrupted or terminated. A change in the capacity in which you render service to the Company or one of its subsidiaries as an Employee or Consultant, or a change in the subsidiary for which you render such service will not terminate your Continuous Service, provided that there is no interruption or termination of your service with the Company or its subsidiaries.

(c) Notwithstanding the preceding Section 3(a), the Options granted to you under this Agreement shall become vested and exercisable before the Vesting Schedule in your Vesting Dates specified in the Grant Notice, if either:

- (1) the performance goals (if any) set forth in the Grant Notice have been met before such Vesting Date; or
- (2) a Change in Control (as defined in the Plan) has occurred before the Vesting Date.

4. **Manner of Exercise.** If you elect to exercise the Stock Options to purchase shares of Common Stock, you shall give written notice of such exercise to the Secretary of the Company. The notice of exercise shall state the number of shares of Common Stock as to which the Stock Options are being exercised. You may exercise the Stock Options to purchase all, or any lesser whole number, of the number of shares of Common Stock that you are then permitted to purchase under Section 2.

5. **Payment for Shares.** Full payment of the option price for the shares of Common Stock purchased by exercising the Stock Options shall be due at the time the notice of exercise is delivered pursuant to Section 4. Such payment may be made:

- (i) by cash, check, bank draft or money order payable to the Company;
- (ii) by delivery of shares of Common Stock you have owned for at least six (6) months with a fair market value equal to the option price; or
- (iii) by a “net exercise” arrangement pursuant to which the Company will reduce the number of Option Shares issuable to you upon exercise by the largest whole number of shares with a Fair Market Value that does not exceed the option price, and will apply the withheld shares to payment of the option price on your behalf and issue the net remaining shares; or
- (iv) in any other form acceptable to the Company.

6. **Issuance of Stock Certificates for Shares.** The stock certificates (or other evidence of ownership) for any shares of Common Stock issuable to you upon your exercise of the Stock Options shall be delivered to you (or to the person to whom your rights shall have passed by will or the laws of descent and distribution) as promptly after the date of exercise as is feasible, but not before you have paid the option price for such shares and made any arrangements for tax withholding, as required by Section 7.

The stock certificate or certificates representing the Shares issued under this Agreement shall be legended in the following manner:

“The shares represented by this Certificate have not been registered under the Securities Act of 1933, and have been acquired for investment and not with a view to, or in connection with, the sale or distribution thereof. No such transfer may be affected without an effective registration statement related thereto or an opinion of counsel in a form satisfactory to the Company that such registration is not required under the Securities Act of 1933 and any applicable state securities laws.”

Furthermore, such stock certificate or certificates may also be issued with any other legends that may be required by the Company, the Stockholder Agreements or state or federal securities laws.

7. **Tax Withholding.** Whenever you exercise the Stock Options, the Company shall notify you of the amount of tax (if any) that must be withheld by the Company under all applicable federal, state and local tax laws. With respect to each exercise of the Stock Options, you agree to make arrangements with the Company to (a) remit the required amount to the Company in cash, (b) authorize the Company to withhold a portion of the shares of Common Stock otherwise issuable upon the exercise with a value equal to the required amount, (c) deliver to the Company shares of Common Stock with a value equal to the required amount, (d) authorize the deduction of the required amount from your regular compensation, or (e) otherwise provide for payment of the required amount in any other manner satisfactory to the Company.

8. **Termination.** Except as otherwise provided in Subsections 8(b) or (c) or Section 9 below, if your Continuous Service terminates (other than for Cause), you may exercise your Stock Options (to the extent that you were entitled to exercise such Stock Options as of the date of termination) within the period of time ending on the earlier of (i) the date which occurs three (3) months following the termination of your Continuous Service and (ii) the expiration of the term of the Stock Options as set forth in the Stock Option Grant Notice. If, after termination of Continuous Service, you have not exercised the Stock Options within this applicable time frame, the Stock Options or will terminate.

(a) If your Continuous Service is terminated for “Cause”, the Stock Options granted to you under this Agreement will terminate immediately upon your termination of Continuous Service, and you will be prohibited from exercising such Stock Options from and after the time of such termination.

For this purpose, except to the extent that a different definition of termination for “cause” applies pursuant to the terms of a written employment, consulting or other agreement between you and the Company (or a subsidiary of the Company), the Company shall have “Cause” to terminate your services upon; (i) conviction of any felony, (ii) conviction of any lesser crime or offense committed in connection with the performance of your duties hereunder or involving dishonesty, fraud or moral turpitude, (iii) alcoholism or drug addiction which materially impairs your ability to perform your duties under such agreement, (iv) your failure or refusal to substantially and materially perform your duties for the Company (other than absences due to illness or vacation) after the Company provides you a written notice specifically identifying the manner in which you have failed to materially perform your duties), (v) your misconduct, malfeasance or dishonesty that results, or is reasonably likely to result, in material and demonstrative harm to the Company or any of its subsidiaries or affiliates, (vi) any action by you involving willful disloyalty to the Company, such as embezzlement, fraud, or misappropriation of Company assets; or (viii) your breach in any material respect, any provision of any non-competition or confidentiality agreement or any other non-disclosure agreement with the Company. However, if you are providing services under any other agreement with the Company (including, but not limited to, an employment or consulting agreement) which defines the term “Cause,” the definition of the term “Cause” set forth in such other agreement shall also be applied for purposes of this Agreement.

(b) If your Continuous Service terminates as a result of your Disability, you may exercise the Stock Options granted to you under this Agreement, but only within such period of time ending on the earlier of (i) the date which occurs twelve (12) months following such termination of Continuous Service, and (ii) the expiration of the term of the Stock Options as set forth in the Stock Option Grant Notice. If you do not exercise your Stock Options within the applicable time frame, the Stock Options will terminate.

(c) For purposes of this Agreement, your “Continuous Service” with the Company means that your performance of services for the Company or one of the Company’s subsidiaries, whether as an Employee or Consultant, is not interrupted or terminated. A change in the capacity in which you render service to the Company or one of its subsidiaries as an Employee or Consultant, or a change in the subsidiary for which you render such service will not terminate your Continuous Service, provided that there is no interruption or termination of your service with the Company or its subsidiaries.

9. **Death.** If your Continuous Service terminates as a result of your death, or you die within the period (if any) specified in Section 8(b) above for exercisability after the termination of your Continuous Service (for a reason other than death), then the Stock Options granted to you under this Agreement may be exercised (to the extent you were entitled to exercise such Stock Options as of the date of death) by your estate, by a person who acquired the right to exercise the Stock Options by bequest or inheritance or by a person designated to exercise the Stock Options upon your death, but only within the period ending on the earlier of (i) twelve (12) months following the date of death, and (ii) the expiration of the term of such Stock Options as set forth in the Stock Option Grant Notice. If the Stock Options are not exercised within the applicable time frame after your death, the Stock Options will terminate.

10. **Representations of Participant.** By signing this Grant Agreement, you represent, warrant, and agree as follows, and the parties agree that the Company may rely on the same in consummating the issuance of the Shares to you under the terms of this Agreement:

(a) **No Representations.** You are entering into this Agreement, and will acquire the Shares, solely on the basis of your own familiarity with the Company and all relevant factors about the Company's affairs, and neither the Company nor the officers or directors of the Company has made any express or implied representations, covenants, or warranties to you with respect to such matters.

(b) **Investment Purpose.** You will be acquiring the Shares covered by this Agreement for your own account for investment and not with a view to the resale or distribution of the Shares.

(c) **Economic Risk.** You are willing and able to bear the economic risk of an investment in the Shares (in making this representation, attention has been given to whether you can afford to hold the Shares for an indefinite period of time and whether, at this time, you can afford a complete loss of the investment).

(d) **Holding of Restricted Stock.** You acknowledge that the Shares to be issued under this Agreement have not been registered under the Securities Act of 1933, as amended (the "1933 Act") and, therefore, cannot be resold unless they are subsequently registered under the 1933 Act or an exemption from such registration is available, as determined by an opinion of counsel rendered to the Company. The Company shall make a notation in its transfer records regarding such restrictions on transfer of the Shares, and the Shares shall not be sold without registration under the 1933 Act or exemption therefrom, as such exemption may be determined by an opinion of counsel rendered to the Company.

(e) **State of Residence.** You are an individual residing in the State of [_____], and are not a resident or part-year resident of any other state.

11. **Securities Laws.** The Company may from time to time impose such conditions on the transfer of the Shares issued to you this Agreement as it deems necessary or advisable to ensure that any transfers of the Shares issued pursuant to this Agreement will satisfy the applicable requirements of federal and state securities laws. Such conditions to satisfy applicable federal and state securities laws may include, without limitation, the partial or complete suspension of the right to transfer the Shares issued under this Agreement until the Shares have been registered under the 1933 Act (as defined in Section 10(d) above).

12. **Covenant Not to Compete and Nonsolicitation Covenant.** If you have not already executed a non-competition agreement with the Company, you shall provide the Company with a signed non-competition agreement simultaneously with the execution of the Stock Option Grant Agreement. Your execution and delivery of the non-competition agreement in a form reasonably satisfactory to the Company shall be a condition to the Company's obligation to issue any Shares to you under this Agreement. In consideration of the Shares, you agree that if, at any time during the periods set forth in the non-competition agreement, you violate the covenants not to compete or the non-solicitation covenants set forth in the non-competition agreement without the express prior consent of the Company, you will forfeit the Shares issued under this Agreement and will also be obligated to repay any payments you have received from the Company in exchange for the redemption of Shares issued to you under this Agreement (not including any income or payroll taxes paid with respect to or withheld from such payments).

13. **Governing Plan Document.** Your Stock Options are subject to all the provisions of the Plan, the provisions of which are hereby made a part of your Stock Options, and is further subject to all interpretations, amendments, rules and regulations, which may from time to time be promulgated and adopted pursuant to the Plan. In the event of any conflict between the provisions of your Stock Option and those of the Plan, the provisions of the Plan shall control.

14. **Grant Not to Affect Services.** Neither this Agreement nor the issuance of the Shares to you shall confer upon you any right to continue to perform services for the Company as a consultant or otherwise, and this Agreement shall not in any way modify or restrict any rights the Company may have to terminate your services under any consulting or other agreement under which you provide services to the Company.

15. **Miscellaneous.**

(a) The terms of this Agreement may only be amended, modified or waived by a written agreement executed by both of the parties hereto.

(b) The validity, performance, construction and effect of this Agreement shall be governed by the laws of the State of Delaware without giving effect to principles of conflicts of law.

**Blue Water Vaccines Inc.
2021 Equity Incentive Plan**

**Notice of Grant of Stock Options and
Stock Option Award Agreement**

Dear _____,

Blue Water Vaccines Inc. hereby grants you stock options to purchase up to _____ shares of our common stock (the “Stock Options”). These Stock Options are subject to the terms and conditions set forth in the Company’s 2021 Equity Incentive Plan (the “Plan”) and in the Terms and Conditions attached as **Appendix A**.

Covered Shares: _____ shares of common stock, par value [**\$0.00001**] per share.

Exercise Price: The purchase price for these shares will be \$_____ per share.

Date of Grant: The “Date of Grant” for your Stock Options is [_____], 2021.

Vesting Schedule: You may exercise your Stock Options after they become “vested.” Vesting is subject to your continued employment with Blue Water Vaccines through the vesting dates in the following schedule.

Vesting Date	Vesting Percentage of Shares	Total Number of Shares

Notwithstanding the foregoing, the Stock Options will become fully vested upon a “change in control” (as this term is defined in the Plan).

Termination: Subject to the terms of the Plan, the vested portion of your Stock Options will remain exercisable for three months after the date your employment terminates.

ISOs: These Stock Options are intended to be “incentive stock options” under Section 422 of the Internal Revenue Code.

Expiration Date: If not previously exercised or forfeited, the Stock Options expire on [_____], 2031.



Your signature below acknowledges your agreement that the Stock Options granted to you are subject to all of the terms and conditions contained in the Plan and in **Appendix A**. PLEASE BE SURE TO READ **APPENDIX A**, WHICH CONTAINS THE SPECIFIC TERMS AND CONDITIONS OF YOUR STOCK OPTIONS.

Please sign one copy of this Stock Option Agreement (the other copy is for your files) and return the signed copy to me no later than _____, 2021.

BLUE WATER VACCINES INC.

Date

Joseph Hernandez, President & CEO

Employee

Date

[Signature Page to Option Award Agreement]

APPENDIX A

Blue Water Vaccines Inc. 2021 Equity Incentive Plan

Terms and Conditions of Stock Options

Pursuant to this Stock Option Award Agreement, Blue Water Vaccines Inc. (the “Company”) has granted the key employee of the Company named on the first page of this Award Agreement (the “Participant”) stock options under the Company’s 2021 Equity Incentive Plan (the “Plan”). These stock options will give the Participant a contingent right to purchase the number of shares of the Company’s Common Stock indicated in the Notice of Grant on the first pages of this Award Agreement (the “Notice of Grant”) upon satisfaction of the vesting requirements and other conditions set forth in this Award Agreement.

The terms and conditions of the Stock Options are as follows:

1. Grant. The Company has granted the Participant stock options to purchase the number of shares of the Company’s Common Stock, **[\$0.00001]** par value per share (“Common Stock”), specified on the first page of the Award Agreement.

All of the terms of the Plan related to Stock Options are incorporated into this Award Agreement by reference. Defined terms not explicitly defined in this Award Agreement but defined in the Plan shall have the same definitions as in the Plan.

The Stock Options granted under this Award Agreement are intended to be Incentive Stock Options covered by Section 422 of the Code, except as otherwise expressly specified in the Notice of Grant or otherwise stated herein.

2. Purchase Price. The price per share to be paid by the Participant for the shares purchased pursuant to these Stock Options (the “Exercise Price”) is stated on the Notice of Grant. This Exercise Price shall not be less than the Fair Market Value of a share of Common Stock as of the Date of Grant (as described in the Notice of Grant), or, if the Participant is a 10-percent Shareholder of the Company, not less than 10 percent of the Fair Market Value of a share of Common Stock.

3. Vesting. The Stock Options shall become vested and exercisable only if the Participant continues to be employed by the Company through the Vesting Dates set forth in the vesting schedule set forth in the Notice of Grant, and satisfies any other vesting conditions specified on such schedule.

The Stock Options intended to be ISOs are subject to the \$100,000 annual limit on vesting of Incentive Stock Options as set forth in Section 422(d) of the Code. To the extent the aggregate fair market value (determined at the date of grant) of the shares of Common Stock with respect to which those ISOs first become exercisable by the Participant during any calendar year under this Section 3 and the vesting schedule set forth on the first page of the Award Agreement (when aggregated with any prior incentive stock options granted to the Participant under stock option plans of the Company) exceeds \$100,000, whether by reason of accelerated vesting under the terms of the Plan or otherwise, the Stock Options shall consist of Incentive Stock Options for the maximum number of shares that may be covered by incentive stock options without violating Section 422(d) of the Code, and the remaining Stock Options becoming exercisable in that year shall be treated as non-qualified stock options not subject to the limits imposed by such Section 422(d) of the Code.

4. Stock Options Non-Transferable. The Stock Options shall not be transferable by the Participant other than by will or the laws of descent and distribution. During the lifetime of the Participant, the Stock Options shall be exercisable only by such Participant (or by the Participant's guardian or legal representative, should one be appointed).

5. Notice of Exercise of Option. The Stock Options may be exercised by the Participant by delivery of a written notice signed by the Participant to the Company to the attention of the Plan Administrator or such officer of the Company as the President/Chief Executive Officer may designate. Any such notice shall:

- (a) specify the number of shares of Common Stock which the Participant, then elects to purchase by exercising the Stock Options,
- (b) contain such information as may be reasonably required pursuant to Section 13 below, and
- (c) be accompanied by payment in full of the Exercise Price for the Stock Options being exercised, as described in Section 6 below.

The Participant must exercise the Stock Options for at least 100 shares, or, if less the full number of shares shown in the vesting schedule set forth in the Notice of Grant as to which the Stock Options remain unexercised.

Upon receipt of any such notice and accompanying payment of the Exercise Price, and subject to the terms hereof, the Company agrees to issue to the Participant, the number of shares specified in such notice registered in the name of the person exercising the Stock Options.

6. Payment of Exercise Price. Payment of the Exercise Price due upon the exercise of the Stock Options may be made in any one or in any combination of the following forms:

- (a) in cash (by a certified or cashier's check);
- (b) in the form of delivery to the Company (either by actual delivery or attestation) of shares of Common Stock owned by the Participant having a Fair Market Value equal to the total Exercise Price at the time of the exercise;
- (c) in the form of shares of stock issued to the Participant (or issuable to the Participant pursuant to the exercise of the Stock Options) having a Fair Market Value equal to the total Exercise Price at the time of the exercise, provided that (1) such shares used to pay the Exercise Price will not be exercisable thereafter and (2) any remaining balance of the Exercise Price not satisfied by such net exercise is paid by the Participant in cash or other permitted form of payment;
- (d) through simultaneous sale through a broker acceptable to the Committee of shares of Common Stock issuable to the Participant on exercise, as permitted under Regulation T of the Board of Governors of the Federal Reserve System.

7. Issuance of Shares. Any shares of Common Stock issuable to the Participant upon exercise of the Stock Options shall be delivered to the Participant (or to the person to whom the rights of the Participant shall have passed by will or the laws of descent and distribution) as promptly after the date of exercise as is feasible, but not before the Participant has paid the Exercise Price for such shares and made arrangements to satisfy only applicable tax withholding requirements as required by Section 8.

8. Withholding Taxes. In connection with the exercise of the Stock Options, the Company shall notify the Participant of the amount of tax (if any) that must be withheld by the Company under all applicable federal, state and local tax laws. In such event, the Participant agrees to make arrangements satisfactory to the Company to (a) remit the required amount to the Company in cash, (b) authorize the Company to withhold a portion of the shares of Common Stock otherwise issuable upon exercise of the Stock Options with a value equal to the required amount of tax, (c) deliver to the Company shares of Common Stock the Participant already owns with a value equal to the required amount, (d) authorize the deduction of the required amount of tax from the Participant's regular cash compensation from the Company, (e) by allowing the Participant to effectuate a "cashless exercise" pursuant to a program developed under Regulation T as promulgated by the Federal Reserve Board, or (f) otherwise provide for payment of the required amount in any other manner satisfactory to the Company.

As a condition to accepting this award of Stock Options under the Plan, the Participant agrees (a) to not make any claim against the Company, or any of its officers, directors, employees or affiliates related to tax liabilities arising from such Stock Options or other Company compensation, and (b) further agrees that in the event that the amount of the Company's tax withholding obligation in connection with such Stock Options was greater than the amount actually withheld by the Company, the Participant shall indemnify and hold the Company harmless from any failure by the Company and/or its Affiliates to withhold the proper amount.

9. Expiration of Options. If the Stock Options are not exercised with respect to all or any part of the shares subject to the Stock Options prior to the expiration date specified in the Notice of Grant (which shall be no later than ten (10) years from the date of grant), the Stock Options shall expire, and any shares with respect to which the Stock Options were not previously exercised shall no longer be purchasable by exercising the Stock Options.

10. Termination of Services. In the event of the termination of the Participant's employment by the Company, other than a termination that is either (i) for Cause, (ii) voluntarily initiated on the part of the Participant and without written consent of the Company,

- (a) the unvested portion of the Stock Options (if any) shall terminate immediately and shall not thereafter be or become exercisable; and
- (b) the Participant may exercise the vested portion of the Stock Options at any time within three (3) months after such termination to the extent of the number of shares which have already become vested and purchasable shares under the vesting schedule set forth in the Notice of Grant at the date of such termination.

In the event that the termination of the Participant's employment with the Company is a result of Disability, the Participant may exercise the vested portion of the Stock Options at any time within the period of twelve (12) months after the date of such termination by reason of Disability.

In the event of a termination of the Participant's employment with the Company that is either (i) for Cause or (ii) voluntarily initiated on the part of the Participant and without the written consent of the Company, all of the Stock Options which have not previously been exercised shall terminate immediately and shall not thereafter be or become exercisable.

In the event the Participant's employment terminates for any reason other than for Cause and, at any time during the last thirty days of the applicable post-termination exercise period described in the preceding paragraph: (i) the exercise of the Participant's Stock Options would be prohibited solely because the issuance of shares of Common Stock upon such exercise would violate applicable law, or (ii) the immediate sale of any shares of Common Stock issued upon such exercise would violate the Company's Trading Policy, then the applicable post-termination exercise period will be extended to the last day of the calendar month that commences following the date the Stock Options would otherwise expire, with an additional extension of the exercise period to the last day of the next calendar month to apply if any of the foregoing restrictions apply at any time during such extended exercise period, generally without limitation as to the maximum permitted number of extensions; provided, however, that in no event may such Stock Options be exercised after the expiration of its term (as set forth on the first page of the Award Agreement).

11. Death. In the event of the Participant's death while employed by Company or within eighteen (18) months after termination of such employment (if such departure from the Company was not for cause), the Stock Options shall remain in effect and may be exercised by the Participant's executor or administrator, or the Participant's heirs to the extent of the number of shares which had already become vested under the vesting schedule on the first page of this Award Agreement at the date of death. The appropriate persons to whom the right to exercise the Stock Options transferred may exercise that portion of the Stock Options at any time within a period ending on the earlier of (a) the last day of the eighteen (18) month period following the Participant's death or (b) the expiration date of the Stock Options specified in the Notice of Grant.

12. Representations of Participant. The Participant represents, warrants, and agrees as follows, and the parties agree that the Company may rely on the same in consummating the issuance of any shares of the Common Stock to the Participant pursuant to the Stock Options (the "Option Shares"):

- (a) No Representations. The Participant is entering into this Agreement, and will acquire the Option Shares, solely on the basis of his own familiarity with the Company and all relevant factors about the Company's affairs, and neither the Company nor any agent of the Company has made any express or implied representations, covenants, or warranties to the Participant with respect to such matters.
- (b) Investment Purpose. The Participant is acquiring the Option Shares for his own account for investment and not with a view to the resale or distribution of the Option Shares.
- (c) Economic Risk. The Participant is willing and able to bear the economic risk of an investment in the Option Shares (in making this representation, attention has been given to whether the Participant can afford to hold the Option Shares for an indefinite period of time and whether, at this time, the Participant can afford a complete loss of the investment).

13. Compliance with Securities Laws and Other Regulatory Matters. The Participant acknowledges that the issuance of capital stock of the Company is subject to limitations imposed by federal and state law, and the Participant hereby agrees that the Company shall not be obligated to issue any shares of Common Stock upon an attempted exercise of the Stock Options that would cause the Company to violate law or any rule, regulation, order or consent decree of any regulatory authority (including without limitation the SEC) having jurisdiction over the affairs of the Company. The Participant agrees that he or she will provide the Company with the representations in Section 12 above, and with such information as is reasonably requested by the Company or its counsel to determine whether the issuance of Common Stock complies with the provisions described by this Section 13.

14. Rights Prior to Issuance of Shares. Neither the Participant nor any person to whom the rights of the Participant shall have passed by will or the laws of descent and distribution shall have any of the rights of a shareholder with respect to any shares of Common Stock until the date of the issuance to him of such shares of Common Stock as provided in Section 7 above.

15. Covenant Not to Compete. If the Participant has not already executed a non-competition agreement with the Company, the Participant shall provide the Company with a signed non-competition agreement simultaneously with the execution of the Award Agreement. The Participant's execution and delivery of such a non-competition agreement in a form reasonably satisfactory to the Company shall be a condition to the Company's obligation to issue any shares to the Participant upon exercise of the Stock Options granted under this Agreement. In consideration of the Stock Options, the Participant agrees that if, at any time during the period set forth in non-competition agreement, the Participant should violate the covenants not to compete or the non-solicitation covenants set forth in the non-competition agreement without the express prior consent of the Company, the Participant will forfeit his or her right to receive or retain the shares issued upon the exercise of the Stock Options granted under this Agreement.

16. Miscellaneous.

- (a) This Agreement shall be binding upon the parties hereto and their representatives, successors and assigns.
- (b) The Participant acknowledges and agrees that if he should become an executive officer of the Company, the Stock Options granted under this Agreement may be subject to the Company's policy on recoupment of executive incentive compensation, as it may be amended from time to time.
- (c) This Agreement shall be governed by the laws of the State of Delaware.
- (d) Any requests or notices to be given hereunder shall be deemed given, and any elections or exercises to be made or accomplished shall be deemed made or accomplished, upon actual delivery thereof to the designated recipient, or three days after deposit thereof in the United States mail, registered, return receipt requested and postage prepaid, addressed, if to the Participant, at the most recent mailing address provided to the Company in writing, and, if to the Company, to the executive offices of the Company, or at such other addresses that the parties provide to each other in accordance with the foregoing notice requirements.
- (e) The Participant hereby explicitly and unambiguously consents to the collection, use and transfer, in electronic or other form, of the Participant's personal data as described in this Award Agreement and any other Stock Option grant materials by the Company for the exclusive purpose of implementing, administering and managing the Participant's participation in the Plan. The Participant understands that the Company **may** hold certain personal information about the Participant, including, but not limited to, the Participant's name, home address and telephone number, date of birth, social insurance number or other identification number, salary, nationality, job title, any Shares held in the Company, details of all Stock Options or any other equity Awards under the Plan awarded, cancelled, exercised, vested, unvested or outstanding in the Participant's favor ("Data"), for the exclusive purpose of implementing, administering and managing the Plan. The Participant further understands that such Data may be transferred to any stock plan service provider selected by the Company to assist the Company with the implementation, administration and management of the Plan.
- (f) This Agreement may not be modified except in writing executed by each of the parties to it.
- (g) The Stock Options granted to the Participant under this Agreement are subject to all the provisions of the Plan, the provisions of which are hereby made a part of this Agreement, and are further subject to all interpretations, amendments, rules and regulations, which may from time to time be promulgated and adopted pursuant to the Plan. In the event of any conflict between the provisions of this Agreement and those of the Plan, the provisions of the Plan shall control.
- (h) Neither this Agreement nor the Stock Options confer upon the Participant any right to continue their employment with the Company or otherwise continue to provide their services to the Company.

17. Restriction on Disposition of Shares. Unless the Company otherwise agrees in writing, the shares purchased pursuant to the exercise of an Incentive Stock Option shall not be transferred by the Employee Participant except pursuant to the Employee's will, or the laws of descent and distribution, until such date which is the later of two years after the grant of such Incentive Stock Option or one year after the transfer of the shares to the Participant pursuant to the exercise of such Incentive Stock Option.

**Blue Water Vaccines Inc.
2021 Equity Incentive Plan**

**Notice of Grant of Stock Options and
Stock Option Award Agreement**

Dear _____,

Bluewater Vaccines Inc. hereby grants you stock options to purchase up to _____ shares of our common stock (the "Stock Options"). These Stock Options are subject to the terms and conditions set forth in the Company's 2021 Equity Incentive Plan (the "Plan") and in the Terms and Conditions attached as **Appendix A**.

Covered Shares: _____ shares of common stock, par value [**\$0.00001**] per share.

Exercise Price: The purchase price for these shares will be \$_____ per share.

Date of Grant: The "Date of Grant" for your Stock Options is [_____], 2021.

Vesting Schedule: You may exercise your Stock Options after they become "vested." Vesting is subject to your continued performance of consulting services for with Blue Water Vaccines after the vesting dates in the following schedule.

Vesting Date	Vesting Percentage of Shares	Total Number of Shares

Notwithstanding the foregoing, the Stock Options will become fully vested upon a "change in control" (as this term is defined in the Plan).

[Termination: Subject to the terms of the Plan, the vested portion of your Stock Options will remain exercisable for three months after the date your consulting services terminate.]

Not ISOs: These Stock Options are not intended to be "incentive stock options" under Section 422 of the Internal Revenue Code.

Expiration Date: If not previously exercised or forfeited, the Stock Options expire on [_____], 2031.

Your signature below acknowledges your agreement that the Stock Options granted to you are subject to all of the terms and conditions contained in the Plan and in **Appendix A**. PLEASE BE SURE TO READ **APPENDIX A**, WHICH CONTAINS THE SPECIFIC TERMS AND CONDITIONS OF YOUR STOCK OPTIONS.

Please sign one copy of this Stock Option Agreement (the other copy is for your files) and return the signed copy to me no later than _____, 2021.

BLUE WATER VACCINES INC.

Date

Joseph Hernandez, President & CEO

CONSULTANT

Date

[Signature Page to Option Award Agreement]

APPENDIX A

Blue Water Vaccines Inc.
2021 Equity Incentive Plan

Terms and Conditions of Stock Options

Pursuant to this Stock Option Award Agreement, Blue Water Vaccines Inc. (the “Company”) has granted the consultant of the Company named on the first page of this Award Agreement (the “Participant”) stock options under the Company’s 2021 Equity Incentive Plan (the “Plan”). These stock options will give the Participant a contingent right to purchase the number of shares of the Company’s Common Stock indicated in the Notice of Grant on the first pages of this Award Agreement (the “Notice of Grant”) upon satisfaction of the vesting requirements and other conditions set forth in this Award Agreement.

The terms and conditions of the Stock Options are as follows:

1. Grant. The Company has granted the Participant stock options to purchase the number of shares of the Company’s Common Stock, [\$0.00001] par value per share (“Common Stock”), specified on the first page of the Award Agreement.

All of the terms of the Plan related to Stock Options are incorporated into this Award Agreement by reference. Defined terms not explicitly defined in this Award Agreement but defined in the Plan shall have the same definitions as in the Plan.

The Stock Options granted under this Award Agreement are not intended to be Incentive Stock Options covered by Section 422 of the Code, except as otherwise expressly specified in the Notice of Grant or otherwise stated herein.

2. Purchase Price. The price per share to be paid by the Participant for the shares purchased pursuant to these Stock Options (the “Exercise Price”) is stated on the Notice of Grant. This Exercise Price shall not be less than the Fair Market Value of a share of Common Stock as of the Date of Grant (as described in the Notice of Grant).

3. Vesting. The Stock Options shall become vested and exercisable only if the Participant continues to provide consulting services to the Company through the Vesting Dates set forth in the vesting schedule set forth in the Notice of Grant, and satisfies any other vesting conditions specified on such schedule.

4. Stock Options Non-Transferable. The Stock Options shall not be transferable by the Participant other than by will or the laws of descent and distribution. During the lifetime of the Participant, the Stock Options shall be exercisable only by such Participant (or by the Participant’s guardian or legal representative, should one be appointed).

5. Notice of Exercise of Option. The Stock Options may be exercised by the Participant by delivery of a written notice signed by the Participant to the Company to the attention of the Plan Administrator or such officer of the Company as the President/Chief Executive Officer may designate. Any such notice shall:

- (a) specify the number of shares of Common Stock which the Participant, then elects to purchase by exercising the Stock Options,
- (b) contain such information as may be reasonably required pursuant to Section 13 below, and
- (c) be accompanied by payment in full of the Exercise Price for the Stock Options being exercised, as described in Section 6 below.

The Participant must exercise the Stock Options for at least 100 shares, or, if less the full number of shares shown in the vesting schedule set forth in the Notice of Grant as to which the Stock Options remain unexercised.

Upon receipt of any such notice and accompanying payment of the Exercise Price, and subject to the terms hereof, the Company agrees to issue to the Participant, the number of shares specified in such notice registered in the name of the person exercising the Stock Options.

6. Payment of Exercise Price. Payment of the Exercise Price due upon the exercise of the Stock Options may be made in any one or in any combination of the following forms:

- (a) in cash (by a certified or cashier's check);
- (b) in the form of delivery to the Company (either by actual delivery or attestation) of shares of Common Stock owned by the Participant having a Fair Market Value equal to the total Exercise Price at the time of the exercise;
- (c) in the form of shares of stock issued to the Participant (or issuable to the Participant pursuant to the exercise of the Stock Options) having a Fair Market Value equal to the total Exercise Price at the time of the exercise, provided that (1) such shares used to pay the Exercise Price will not be exercisable thereafter and (2) any remaining balance of the Exercise Price not satisfied by such net exercise is paid by the Participant in cash or other permitted form of payment;
- (d) through simultaneous sale through a broker acceptable to the Committee of shares of Common Stock issuable to the Participant on exercise, as permitted under Regulation T of the Board of Governors of the Federal Reserve System.

7. Issuance of Shares. Any shares of Common Stock issuable to the Participant upon exercise of the Stock Options shall be delivered to the Participant (or to the person to whom the rights of the Participant shall have passed by will or the laws of descent and distribution) as promptly after the date of exercise as is feasible, but not before the Participant has paid the Exercise Price for such shares and made arrangements to satisfy only applicable tax withholding requirements as required by Section 8.

As a condition to accepting this award of Stock Options under the Plan, the Participant agrees (a) to not make any claim against the Company, or any of its officers, directors, employees or affiliates related to tax liabilities arising from such Stock Options or other Company compensation, and (b) further agrees that in the event that the amount of the Company's tax withholding obligation in connection with such Stock Options was greater than the amount actually withheld by the Company, the Participant shall indemnify and hold the Company harmless from any failure by the Company and/or its Affiliates to withhold the proper amount.

8. Expiration of Options. If the Stock Options are not exercised with respect to all or any part of the shares subject to the Stock Options prior to the expiration date specified in the Notice of Grant (which shall be no later than ten (10) years from the date of grant), the Stock Options shall expire, and any shares with respect to which the Stock Options were not previously exercised shall no longer be purchasable by exercising the Stock Options.

9. Termination of Services. In the event of the termination of the Participant's consulting services by the Company, other than a termination that is either (i) for Cause, (ii) voluntarily initiated on the part of the Participant and without written consent of the Company,

- (a) the unvested portion of the Stock Options (if any) shall terminate immediately and shall not thereafter be or become exercisable; and
- (b) the Participant may exercise the vested portion of the Stock Options at any time within three (3) months after such termination to the extent of the number of shares which have already become vested and purchasable shares under the vesting schedule set forth in the Notice of Grant at the date of such termination.

In the event that the termination of the Participant's consulting services with the Company is a result of Disability, the Participant may exercise the vested portion of the Stock Options at any time within the period of twelve (12) months after the date of such termination by reason of Disability.

In the event of a termination of the Participant's consulting services with the Company that is either (i) for Cause or (ii) voluntarily initiated on the part of the Participant and without the written consent of the Company, all of the Stock Options which have not previously been exercised shall terminate immediately and shall not thereafter be or become exercisable.

In the event the Participant's consulting services terminate for any reason other than for Cause and, at any time during the last thirty days of the applicable post-termination exercise period described in the preceding paragraph: (i) the exercise of the Participant's Stock Options would be prohibited solely because the issuance of shares of Common Stock upon such exercise would violate applicable law, or (ii) the immediate sale of any shares of Common Stock issued upon such exercise would violate the Company's Trading Policy, then the applicable post-termination exercise period will be extended to the last day of the calendar month that commences following the date the Stock Options would otherwise expire, with an additional extension of the exercise period to the last day of the next calendar month to apply if any of the foregoing restrictions apply at any time during such extended exercise period, generally without limitation as to the maximum permitted number of extensions); provided, however, that in no event may such Stock Options be exercised after the expiration of its term (as set forth on the first page of the Award Agreement).

10. Death. In the event of the Participant's death while providing consulting services by Company or within eighteen (18) months after termination of such services (if such departure from the Company was not for cause), the Stock Options shall remain in effect and may be exercised by the Participant's executor or administrator, or the Participant's heirs to the extent of the number of shares which had already become vested under the vesting schedule on the first page of this Award Agreement at the date of death. The appropriate persons to whom the right to exercise the Stock Options transferred may exercise that portion of the Stock Options at any time within a period ending on the earlier of (a) the last day of the eighteen (18) month period following the Participant's death or (b) the expiration date of the Stock Options specified in the Notice of Grant.

11. Representations of Participant. The Participant represents, warrants, and agrees as follows, and the parties agree that the Company may rely on the same in consummating the issuance of any shares of the Common Stock to the Participant pursuant to the Stock Options (the "Option Shares"):

- (a) No Representations. The Participant is entering into this Agreement, and will acquire the Option Shares, solely on the basis of his own familiarity with the Company and all relevant factors about the Company's affairs, and neither the Company nor any agent of the Company has made any express or implied representations, covenants, or warranties to the Participant with respect to such matters.
- (b) Investment Purpose. The Participant is acquiring the Option Shares for his own account for investment and not with a view to the resale or distribution of the Option Shares.
- (c) Economic Risk. The Participant is willing and able to bear the economic risk of an investment in the Option Shares (in making this representation, attention has been given to whether the Participant can afford to hold the Option Shares for an indefinite period of time and whether, at this time, the Participant can afford a complete loss of the investment).

12. Compliance with Securities Laws and Other Regulatory Matters. The Participant acknowledges that the issuance of capital stock of the Company is subject to limitations imposed by federal and state law, and the Participant hereby agrees that the Company shall not be obligated to issue any shares of Common Stock upon an attempted exercise of the Stock Options that would cause the Company to violate law or any rule, regulation, order or consent decree of any regulatory authority (including without limitation the SEC) having jurisdiction over the affairs of the Company. The Participant agrees that he or she will provide the Company with the representations in Section 12 above, and with such information as is reasonably requested by the Company or its counsel to determine whether the issuance of Common Stock complies with the provisions described by this Section 13.

13. Rights Prior to Issuance of Shares. Neither the Participant nor any person to whom the rights of the Participant shall have passed by will or the laws of descent and distribution shall have any of the rights of a shareholder with respect to any shares of Common Stock until the date of the issuance to him of such shares of Common Stock as provided in Section 7 above.

14. Covenant Not to Compete. If the Participant has not already executed a non-competition agreement with the Company, the Participant shall provide the Company with a signed non-competition agreement simultaneously with the execution of the Award Agreement. The Participant's execution and delivery of such a non-competition agreement in a form reasonably satisfactory to the Company shall be a condition to the Company's obligation to issue any shares to the Participant upon exercise of the Stock Options granted under this Agreement. In consideration of the Stock Options, the Participant agrees that if, at any time during the period set forth in non-competition agreement, the Participant should violate the covenants not to compete or the non-solicitation covenants set forth in the non-competition agreement without the express prior consent of the Company, the Participant will forfeit his or her right to receive or retain the shares issued upon the exercise of the Stock Options granted under this Agreement.

1. Miscellaneous.

- (a) This Agreement shall be binding upon the parties hereto and their representatives, successors and assigns.
- (b) The Participant acknowledges and agrees that if he should become an executive officer of the Company, the Stock Options granted under this Agreement may be subject to the Company's policy on recoupment of executive incentive compensation, as it may be amended from time to time.
- (c) This Agreement shall be governed by the laws of the State of Delaware.
- (d) Any requests or notices to be given hereunder shall be deemed given, and any elections or exercises to be made or accomplished shall be deemed made or accomplished, upon actual delivery thereof to the designated recipient, or three days after deposit thereof in the United States mail, registered, return receipt requested and postage prepaid, addressed, if to the Participant, at the most recent mailing address provided to the Company in writing, and, if to the Company, to the executive offices of the Company, or at such other addresses that the parties provide to each other in accordance with the foregoing notice requirements.
- (e) The Participant hereby explicitly and unambiguously consents to the collection, use and transfer, in electronic or other form, of the Participant's personal data as described in this Award Agreement and any other Stock Option grant materials by the Company for the exclusive purpose of implementing, administering and managing the Participant's participation in the Plan. The Participant understands that the Company **may** hold certain personal information about the Participant, including, but not limited to, the Participant's name, home address and telephone number, date of birth, social insurance number or other identification number, salary, nationality, job title, any Shares held in the Company, details of all Stock Options or any other equity Awards under the Plan awarded, cancelled, exercised, vested, unvested or outstanding in the Participant's favor ("Data"), for the exclusive purpose of implementing, administering and managing the Plan. The Participant further understands that such Data may be transferred to any stock plan service provider selected by the Company to assist the Company with the implementation, administration and management of the Plan.
- (f) This Agreement may not be modified except in writing executed by each of the parties to it.
- (g) The Stock Options granted to the Participant under this Agreement are subject to all the provisions of the Plan, the provisions of which are hereby made a part of this Agreement, and are further subject to all interpretations, amendments, rules and regulations, which may from time to time be promulgated and adopted pursuant to the Plan. In the event of any conflict between the provisions of this Agreement and those of the Plan, the provisions of the Plan shall control.
- (h) Neither this Agreement nor the Stock Options confer upon the Participant any right to continue their consulting services with the Company or otherwise continue to provide their services to the Company.

**Blue Water Vaccines Inc.
2021 Equity Incentive Plan**

**Notice of Grant of Stock Options and
Stock Option Award Agreement**

Dear _____,

Blue Water Vaccines Inc. hereby grants you stock options to purchase up to _____ shares of our common stock (the "Stock Options"). These Stock Options are subject to the terms and conditions set forth in the Company's 2021 Equity Incentive Plan (the "Plan") and in the Terms and Conditions attached as **Appendix A**.

Covered Shares: _____ shares of common stock, par value **[\$0.00001]** per share.

Exercise Price: The purchase price for these shares will be \$_____ per share.

Date of Grant: The "Date of Grant" for your Stock Options is [____], 2021.

Vesting Schedule: You may exercise your Stock Options after they become "vested." Vesting is subject to your continued performance of services on the Board of Directors through the following vesting dates.

Vesting Date	Vesting Percentage of Shares	Total Number of Shares

Termination: Subject to the terms of the Plan, the vested portion of your Stock Options will remain exercisable for three months after the date your service on the Board of Directors terminates.

Not ISOs: These Stock Options are not intended to be "incentive stock options" under Section 422 of the Internal Revenue Code.

Expiration Date: If not previously exercised or forfeited, the Stock Options expire on [____], 2031.

Your signature below acknowledges your agreement that the Stock Options granted to you are subject to all of the terms and conditions contained in the Plan and in **Appendix A**. PLEASE BE SURE TO READ **APPENDIX A**, WHICH CONTAINS THE SPECIFIC TERMS AND CONDITIONS OF YOUR STOCK OPTIONS.

Please sign one copy of this Stock Option Agreement (the other copy is for your files) and return the signed copy to me no later than _____, 2021.

BLUE WATER VACCINES INC.

Date

Joseph Hernandez, President & CEO

DIRECTOR

Date

Print name:

[Signature Page to Option Award Agreement]

APPENDIX A

Blue Water Vaccines Inc. 2021 Equity Incentive Plan

Terms and Conditions of Stock Options

1. Grant. Blue Water Vaccines Inc. (the “Company”) has granted the Director of the Company named on the first page of this Award Agreement (the “Director”) stock options to purchase the number of shares of the Company’s Common Stock, [**\$0.00001**] par value per share (“Common Stock”), specified on the first page of the Award Agreement. These stock options will give the Director a contingent right to purchase the number of shares of the Company’s Common Stock indicated on the first page of this Award Agreement (the “Notice of Grant”) upon satisfaction of the vesting requirements and other conditions set forth in this Award Agreement.

The Stock Options granted under this Award Agreement are not intended to be Incentive Stock Options covered by Section 422 of the Code, except as otherwise expressly specified in the Notice of Grant or otherwise stated herein.

All of the terms of the Company’s 2021 Equity Incentive Plan (the “Plan”) related to Stock Options are incorporated into this Award Agreement by reference. Defined terms not explicitly defined in this Award Agreement but defined in the Plan shall have the same definitions as in the Plan.

2. Purchase Price. The price per share to be paid by the Director for the shares purchased pursuant to these Stock Options (the “Exercise Price”) is stated on the Notice of Grant. This Exercise Price shall not be less than the Fair Market Value of a share of Common Stock as of the Date of Grant (as defined in the Plan and specified in the Notice of Grant).

3. Vesting. The Stock Options shall become vested and exercisable only if the Director continues to serve as a member of the Company’s Board of Directors through the Vesting Dates set forth in the vesting schedule set forth in the Notice of Grant, and satisfies any other vesting conditions specified on such schedule.

4. Stock Options Non-Transferable. The Stock Options shall not be transferable by the Director other than by will or the laws of descent and distribution. During the lifetime of the Director, the Stock Options shall be exercisable only by such Director (or by the Director’s guardian or legal representative, should one be appointed).

5. Notice of Exercise of Option. The Stock Options may be exercised by the Director by delivery of a written notice signed by the Director to the Company to the attention of the Plan Administrator or such officer of the Company as the President/Chief Executive Officer may designate. Any such notice shall:

- (a) specify the number of shares of Common Stock which the Director, then elects to purchase by exercising the Stock Options,
- (b) contain such information as may be reasonably required pursuant to Section 13 below, and
- (c) be accompanied by payment in full of the Exercise Price for the Stock Options being exercised, as described in Section 6 below.

The Director must exercise the Stock Options for at least 100 shares, or, if less the full number of shares shown in the vesting schedule set forth in the Notice of Grant as to which the Stock Options remain unexercised.

Upon receipt of any such notice and accompanying payment of the Exercise Price, and subject to the terms hereof, the Company agrees to issue to the Director, the number of shares specified in such notice registered in the name of the person exercising the Stock Options.

6. Payment of Exercise Price. Payment of the Exercise Price due upon the exercise of the Stock Options may be made in any one or in any combination of the following forms:

- (a) in cash (by a certified or cashier's check);
- (b) in the form of delivery to the Company (either by actual delivery or attestation) of shares of Common Stock owned by the Director having a Fair Market Value equal to the total Exercise Price at the time of the exercise;
- (c) in the form of shares of stock issued to the Director (or issuable to the Director pursuant to the exercise of the Stock Options) having a Fair Market Value equal to the total Exercise Price at the time of the exercise, provided that (1) such shares used to pay the Exercise Price will not be exercisable thereafter and (2) any remaining balance of the Exercise Price not satisfied by such net exercise is paid by the Director in cash or other permitted form of payment;
- (d) through simultaneous sale through a broker acceptable to the Committee of shares of Common Stock issuable to the Director on exercise, as permitted under Regulation T of the Board of Governors of the Federal Reserve System.

7. Issuance of Shares. Any shares of Common Stock issuable to the Director upon exercise of the Stock Options shall be delivered to the Director (or to the person to whom the rights of the Director shall have passed by will or the laws of descent and distribution) as promptly after the date of exercise as is feasible, but not before the Director has paid the Exercise Price for such shares.

8. Expiration of Options. If the Stock Options are not exercised with respect to all or any part of the shares subject to the Stock Options prior to the expiration date specified in the Notice of Grant (which shall be no later than ten (10) years from the date of grant), the Stock Options shall expire, and any shares with respect to which the Stock Options were not previously exercised shall no longer be purchasable by exercising the Stock Options.

9. Termination of Services on Board. In the event of the Director ceases to serve as a member of the Board of Directors of the Company before the Stock Options are exercised or expire, the Director may exercise the vested portion of the Stock Options at any time within three (3) months after such termination of service on the Board, to the extent of the number of shares which have already become vested and purchasable shares under the vesting schedule set forth in the Notice of Grant at the date of such termination. In the event that the termination of the Director's service on the Board is a result of Disability, the Director may exercise the vested portion of the Stock Options at any time within the period of twelve (12) months after the date of such termination by reason of Disability.

In the event of a termination of the Director's service on the Board of Directors that is either (i) for Cause or (ii) voluntarily initiated on the part of the Director and without the written consent of the Company, all of the Stock Options which have not previously been exercised shall terminate immediately and shall not thereafter be or become exercisable.

In the event the Director's service on the Board of Directors terminates for any reason other than for Cause and, at any time during the last thirty days of the applicable post-termination exercise period described in the preceding paragraph: (i) the exercise of the Director's Stock Options would be prohibited solely because the issuance of shares of Common Stock upon such exercise would violate applicable law, or (ii) the immediate sale of any shares of Common Stock issued upon such exercise would violate the Company's Trading Policy, then the applicable post-termination exercise period will be extended to the last day of the calendar month that commences following the date the Stock Options would otherwise expire, with an additional extension of the exercise period to the last day of the next calendar month to apply if any of the foregoing restrictions apply at any time during such extended exercise period, generally without limitation as to the maximum permitted number of extensions); provided, however, that in no event may such Stock Options be exercised after the expiration of its term (as set forth on the first page of the Award Agreement).

10. Death. In the event of the Director's death while serving on the Company's Board of Directors or within eighteen (18) months after termination of such service on the Board of Directors (if such departure from the Board was not for cause), the Stock Options shall remain in effect and may be exercised by the Director's executor or administrator, or the Director's heirs to the extent of the number of shares which had already become vested under the vesting schedule set forth in the Notice of Grant at the date of death. The appropriate persons to whom the right to exercise the Stock Options transferred may exercise that portion of the Stock Options at any time within a period ending on the earlier of (a) the last day of the eighteen (18) month period following the Director's death or (b) the expiration date of the Stock Options specified in the Notice of Grant.

11. Representations of Director. The Director represents, warrants, and agrees as follows, and the parties agree that the Company may rely on the same in consummating the issuance of any shares of the Common Stock to the Director pursuant to the Stock Options (the "Option Shares"):

- (a) No Representations. The Director is entering into this Agreement, and will acquire the Option Shares, solely on the basis of his own familiarity with the Company and all relevant factors about the Company's affairs, and neither the Company nor any agent of the Company has made any express or implied representations, covenants, or warranties to the Director with respect to such matters.
- (b) Investment Purpose. The Director is acquiring the Option Shares for his own account for investment and not with a view to the resale or distribution of the Option Shares.
- (c) Economic Risk. The Director is willing and able to bear the economic risk of an investment in the Option Shares (in making this representation, attention has been given to whether the Director can afford to hold the Option Shares for an indefinite period of time and whether, at this time, the Director can afford a complete loss of the investment).

12. Compliance with Securities Laws and Other Regulatory Matters. The Director acknowledges that the issuance of capital stock of the Company is subject to limitations imposed by federal and state law, and the Director hereby agrees that the Company shall not be obligated to issue any shares of Common Stock upon an attempted exercise of the Stock Options that would cause the Company to violate law or any rule, regulation, order or consent decree of any regulatory authority (including without limitation the SEC) having jurisdiction over the affairs of the Company. The Director agrees that he or she will provide the Company with the representations in Section 12 above, and with such information as is reasonably requested by the Company or its counsel to determine whether the issuance of Common Stock complies with the provisions described by this Section 13.

13. Rights Prior to Issuance of Shares. Neither the Director nor any person to whom the rights of the Director shall have passed by will or the laws of descent and distribution shall have any of the rights of a shareholder with respect to any shares of Common Stock until the date of the issuance to him of such shares of Common Stock as provided in Section 7 above.

14. Miscellaneous.

- (a) This Agreement shall be binding upon the parties hereto and their representatives, successors and assigns.
- (b) The Director acknowledges and agrees that if he should become an executive officer of the Company, the Stock Options granted under this Agreement may be subject to the Company's policy on recoupment of executive incentive compensation, as it may be amended from time to time.
- (c) This Agreement shall be governed by the laws of the State of Delaware.
- (d) Any requests or notices to be given hereunder shall be deemed given, and any elections or exercises to be made or accomplished shall be deemed made or accomplished, upon actual delivery thereof to the designated recipient, or three days after deposit thereof in the United States mail, registered, return receipt requested and postage prepaid, addressed, if to the Director, at the most recent mailing address provided to the Company in writing, and, if to the Company, to the executive offices of the Company, or at such other addresses that the parties provide to each other in accordance with the foregoing notice requirements.
- (e) The Director hereby explicitly and unambiguously consents to the collection, use and transfer, in electronic or other form, of the Director's personal data as described in this Award Agreement and any other Stock Option grant materials by the Company for the exclusive purpose of implementing, administering and managing the Director's participation in the Plan. The Director understands that the Company **may** hold certain personal information about the Director, including, but not limited to, the Director's name, home address and telephone number, date of birth, social insurance number or other identification number, salary, nationality, job title, any Shares held in the Company, details of all Stock Options or any other equity Awards under the Plan awarded, cancelled, exercised, vested, unvested or outstanding in the Director's favor ("Data"), for the exclusive purpose of implementing, administering and managing the Plan. The Director further understands that such Data may be transferred to any stock plan service provider selected by the Company to assist the Company with the implementation, administration and management of the Plan.
- (f) This Agreement may not be modified except in writing executed by each of the parties to it.
- (g) The Stock Options granted to the Director under this Agreement are subject to all the provisions of the Plan, the provisions of which are hereby made a part of this Agreement, and are further subject to all interpretations, amendments, rules and regulations, which may from time to time be promulgated and adopted pursuant to the Plan. In the event of any conflict between the provisions of this Agreement and those of the Plan, the provisions of the Plan shall control.
- (h) Neither this Agreement nor the Stock Options confer upon the Director any right to continue his services on the Board of Directors of the Company or otherwise continue to provide their services to the Company.

<p>Blue Water Vaccines Inc. 2021 Equity Incentive Plan Notice of Grant of Stock Options and Stock Option Award Agreement</p>

Dear _____,

Bluewater Vaccines Inc. hereby grants you stock options to purchase up to _____ shares of our common stock (the "Stock Options"). These Stock Options are subject to the terms and conditions set forth in the Company's 2021 Equity Incentive Plan (the "Plan") and in the Terms and Conditions attached as **Appendix A**.

Covered Shares: _____ shares of common stock, par value [**\$0.00001**] per share.

Exercise Price: The purchase price for these shares will be \$_____ per share.

Date of Grant: The "Date of Grant" for your Stock Options is [_____], 2021.

Vesting Schedule: You may exercise your Stock Options after they become "vested." Vesting is subject to your continued employment with Blue Water Vaccines after the vesting dates in the following schedule.

Vesting Date	Vesting Percentage of Shares	Total Number of Shares

Notwithstanding the foregoing, the Stock Options will become fully vested upon a "change in control" (as this term is defined in the Plan).

Termination: Subject to the terms of the Plan, the vested portion of your Stock Options will remain exercisable for three months after the date your employment terminates.

Not ISOs: These Stock Options are not intended to be "incentive stock options" under Section 422 of the Internal Revenue Code.

Expiration Date: If not previously exercised or forfeited, the Stock Options expire on [_____], 2031.

Your signature below acknowledges your agreement that the Stock Options granted to you are subject to all of the terms and conditions contained in the Plan and in **Appendix A**. PLEASE BE SURE TO READ **APPENDIX A**, WHICH CONTAINS THE SPECIFIC TERMS AND CONDITIONS OF YOUR STOCK OPTIONS.

Please sign one copy of this Stock Option Agreement (the other copy is for your files) and return the signed copy to me no later than _____, 2021.

BLUE WATER VACCINES INC.

Date

Joseph Hernandez, President & CEO

Employee

Date

[Signature Page to Option Award Agreement]

APPENDIX A

Blue Water Vaccines Inc. 2021 Equity Incentive Plan

Terms and Conditions of Stock Options

Pursuant to this Stock Option Award Agreement, Blue Water Vaccines Inc. (the “Company”) has granted the key employee of the Company named on the first page of this Award Agreement (the “Participant”) stock options under the Company’s 2021 Equity Incentive Plan (the “Plan”). These stock options will give the Participant a contingent right to purchase the number of shares of the Company’s Common Stock indicated in the Notice of Grant on the first pages of this Award Agreement (the “Notice of Grant”) upon satisfaction of the vesting requirements and other conditions set forth in this Award Agreement.

The terms and conditions of the Stock Options are as follows:

1. Grant. The Company has granted the Participant stock options to purchase the number of shares of the Company’s Common Stock, [**\$0.00001**] par value per share (“Common Stock”), specified on the first page of the Award Agreement.

All of the terms of the Plan related to Stock Options are incorporated into this Award Agreement by reference. Defined terms not explicitly defined in this Award Agreement but defined in the Plan shall have the same definitions as in the Plan.

The Stock Options granted under this Award Agreement are not intended to be Incentive Stock Options covered by Section 422 of the Code, except as otherwise expressly specified in the Notice of Grant or otherwise stated herein.

2. Purchase Price. The price per share to be paid by the Participant for the shares purchased pursuant to these Stock Options (the “Exercise Price”) is stated on the Notice of Grant. This Exercise Price shall not be less than the Fair Market Value of a share of Common Stock as of the Date of Grant (as described in the Notice of Grant).

3. Vesting. The Stock Options shall become vested and exercisable only if the Participant continues to be employed by the Company through the Vesting Dates set forth in the vesting schedule set forth in the Notice of Grant, and satisfies any other vesting conditions specified on such schedule.

4. Stock Options Non-Transferable. The Stock Options shall not be transferable by the Participant other than by will or the laws of descent and distribution. During the lifetime of the Participant, the Stock Options shall be exercisable only by such Participant (or by the Participant’s guardian or legal representative, should one be appointed).

5. Notice of Exercise of Option. The Stock Options may be exercised by the Participant by delivery of a written notice signed by the Participant to the Company to the attention of the Plan Administrator or such officer of the Company as the President/Chief Executive Officer may designate. Any such notice shall:

- (a) specify the number of shares of Common Stock which the Participant, then elects to purchase by exercising the Stock Options,
- (b) contain such information as may be reasonably required pursuant to Section 13 below, and
- (c) be accompanied by payment in full of the Exercise Price for the Stock Options being exercised, as described in Section 6 below.

The Participant must exercise the Stock Options for at least 100 shares, or, if less the full number of shares shown in the vesting schedule set forth in the Notice of Grant as to which the Stock Options remain unexercised.

Upon receipt of any such notice and accompanying payment of the Exercise Price, and subject to the terms hereof, the Company agrees to issue to the Participant, the number of shares specified in such notice registered in the name of the person exercising the Stock Options.

6. Payment of Exercise Price. Payment of the Exercise Price due upon the exercise of the Stock Options may be made in any one or in any combination of the following forms:

- (a) in cash (by a certified or cashier's check);
- (b) in the form of delivery to the Company (either by actual delivery or attestation) of shares of Common Stock owned by the Participant having a Fair Market Value equal to the total Exercise Price at the time of the exercise;
- (c) in the form of shares of stock issued to the Participant (or issuable to the Participant pursuant to the exercise of the Stock Options) having a Fair Market Value equal to the total Exercise Price at the time of the exercise, provided that (1) such shares used to pay the Exercise Price will not be exercisable thereafter and (2) any remaining balance of the Exercise Price not satisfied by such net exercise is paid by the Participant in cash or other permitted form of payment;
- (d) through simultaneous sale through a broker acceptable to the Committee of shares of Common Stock issuable to the Participant on exercise, as permitted under Regulation T of the Board of Governors of the Federal Reserve System.

7. Issuance of Shares. Any shares of Common Stock issuable to the Participant upon exercise of the Stock Options shall be delivered to the Participant (or to the person to whom the rights of the Participant shall have passed by will or the laws of descent and distribution) as promptly after the date of exercise as is feasible, but not before the Participant has paid the Exercise Price for such shares and made arrangements to satisfy only applicable tax withholding requirements as required by Section 8.

8. Withholding Taxes. In connection with the exercise of the Stock Options, the Company shall notify the Participant of the amount of tax (if any) that must be withheld by the Company under all applicable federal, state and local tax laws. In such event, the Participant agrees to make arrangements satisfactory to the Company to (a) remit the required amount to the Company in cash, (b) authorize the Company to withhold a portion of the shares of Common Stock otherwise issuable upon exercise of the Stock Options with a value equal to the required amount of tax, (c) deliver to the Company shares of Common Stock the Participant already owns with a value equal to the required amount, (d) authorize the deduction of the required amount of tax from the Participant's regular cash compensation from the Company, (e) by allowing the Participant to effectuate a "cashless exercise" pursuant to a program developed under Regulation T as promulgated by the Federal Reserve Board, or (f) otherwise provide for payment of the required amount in any other manner satisfactory to the Company.

As a condition to accepting this award of Stock Options under the Plan, the Participant agrees (a) to not make any claim against the Company, or any of its officers, directors, employees or affiliates related to tax liabilities arising from such Stock Options or other Company compensation, and (b) further agrees that in the event that the amount of the Company's tax withholding obligation in connection with such Stock Options was greater than the amount actually withheld by the Company, the Participant shall indemnify and hold the Company harmless from any failure by the Company and/or its Affiliates to withhold the proper amount.

9. Expiration of Options. If the Stock Options are not exercised with respect to all or any part of the shares subject to the Stock Options prior to the expiration date specified in the Notice of Grant (which shall be no later than ten (10) years from the date of grant), the Stock Options shall expire, and any shares with respect to which the Stock Options were not previously exercised shall no longer be purchasable by exercising the Stock Options.

10. Termination of Services. In the event of the termination of the Participant's employment by the Company, other than a termination that is either (i) for Cause, (ii) voluntarily initiated on the part of the Participant and without written consent of the Company,

- (a) the unvested portion of the Stock Options (if any) shall terminate immediately and shall not thereafter be or become exercisable; and
- (b) the Participant may exercise the vested portion of the Stock Options at any time within three (3) months after such termination to the extent of the number of shares which have already become vested and purchasable shares under the vesting schedule set forth in the Notice of Grant at the date of such termination.

In the event that the termination of the Participant's employment with the Company is a result of Disability, the Participant may exercise the vested portion of the Stock Options at any time within the period of twelve (12) months after the date of such termination by reason of Disability.

In the event of a termination of the Participant's employment with the Company that is either (i) for Cause or (ii) voluntarily initiated on the part of the Participant and without the written consent of the Company, all of the Stock Options which have not previously been exercised shall terminate immediately and shall not thereafter be or become exercisable.

In the event the Participant's employment terminates for any reason other than for Cause and, at any time during the last thirty days of the applicable post-termination exercise period described in the preceding paragraph: (i) the exercise of the Participant's Stock Options would be prohibited solely because the issuance of shares of Common Stock upon such exercise would violate applicable law, or (ii) the immediate sale of any shares of Common Stock issued upon such exercise would violate the Company's Trading Policy, then the applicable post-termination exercise period will be extended to the last day of the calendar month that commences following the date the Stock Options would otherwise expire, with an additional extension of the exercise period to the last day of the next calendar month to apply if any of the foregoing restrictions apply at any time during such extended exercise period, generally without limitation as to the maximum permitted number of extensions); provided, however, that in no event may such Stock Options be exercised after the expiration of its term (as set forth on the first page of the Award Agreement).

11. Death. In the event of the Participant's death while employed by Company or within eighteen (18) months after termination of such employment (if such departure from the Company was not for cause), the Stock Options shall remain in effect and may be exercised by the Participant's executor or administrator, or the Participant's heirs to the extent of the number of shares which had already become vested under the vesting schedule on the first page of this Award Agreement at the date of death. The appropriate persons to whom the right to exercise the Stock Options transferred may exercise that portion of the Stock Options at any time within a period ending on the earlier of (a) the last day of the eighteen (18) month period following the Participant's death or (b) the expiration date of the Stock Options specified in the Notice of Grant.

12. Representations of Participant. The Participant represents, warrants, and agrees as follows, and the parties agree that the Company may rely on the same in consummating the issuance of any shares of the Common Stock to the Participant pursuant to the Stock Options (the "Option Shares"):

- (a) No Representations. The Participant is entering into this Agreement, and will acquire the Option Shares, solely on the basis of his own familiarity with the Company and all relevant factors about the Company's affairs, and neither the Company nor any agent of the Company has made any express or implied representations, covenants, or warranties to the Participant with respect to such matters.

- (b) Investment Purpose. The Participant is acquiring the Option Shares for his own account for investment and not with a view to the resale or distribution of the Option Shares.
- (c) Economic Risk. The Participant is willing and able to bear the economic risk of an investment in the Option Shares (in making this representation, attention has been given to whether the Participant can afford to hold the Option Shares for an indefinite period of time and whether, at this time, the Participant can afford a complete loss of the investment).

13. Compliance with Securities Laws and Other Regulatory Matters. The Participant acknowledges that the issuance of capital stock of the Company is subject to limitations imposed by federal and state law, and the Participant hereby agrees that the Company shall not be obligated to issue any shares of Common Stock upon an attempted exercise of the Stock Options that would cause the Company to violate law or any rule, regulation, order or consent decree of any regulatory authority (including without limitation the SEC) having jurisdiction over the affairs of the Company. The Participant agrees that he or she will provide the Company with the representations in Section 12 above, and with such information as is reasonably requested by the Company or its counsel to determine whether the issuance of Common Stock complies with the provisions described by this Section 13.

14. Rights Prior to Issuance of Shares. Neither the Participant nor any person to whom the rights of the Participant shall have passed by will or the laws of descent and distribution shall have any of the rights of a shareholder with respect to any shares of Common Stock until the date of the issuance to him of such shares of Common Stock as provided in Section 7 above.

15. Covenant Not to Compete. If the Participant has not already executed a non-competition agreement with the Company, the Participant shall provide the Company with a signed non-competition agreement simultaneously with the execution of the Award Agreement. The Participant's execution and delivery of such a non-competition agreement in a form reasonably satisfactory to the Company shall be a condition to the Company's obligation to issue any shares to the Participant upon exercise of the Stock Options granted under this Agreement. In consideration of the Stock Options, the Participant agrees that if, at any time during the period set forth in non-competition agreement, the Participant should violate the covenants not to compete or the non-solicitation covenants set forth in the non-competition agreement without the express prior consent of the Company, the Participant will forfeit his or her right to receive or retain the shares issued upon the exercise of the Stock Options granted under this Agreement.

16. Miscellaneous.

- (a) This Agreement shall be binding upon the parties hereto and their representatives, successors and assigns.
- (b) The Participant acknowledges and agrees that if he should become an executive officer of the Company, the Stock Options granted under this Agreement may be subject to the Company's policy on recoupment of executive incentive compensation, as it may be amended from time to time.
- (c) This Agreement shall be governed by the laws of the State of Delaware.

- (d) Any requests or notices to be given hereunder shall be deemed given, and any elections or exercises to be made or accomplished shall be deemed made or accomplished, upon actual delivery thereof to the designated recipient, or three days after deposit thereof in the United States mail, registered, return receipt requested and postage prepaid, addressed, if to the Participant, at the most recent mailing address provided to the Company in writing, and, if to the Company, to the executive offices of the Company, or at such other addresses that the parties provide to each other in accordance with the foregoing notice requirements.
- (e) The Participant hereby explicitly and unambiguously consents to the collection, use and transfer, in electronic or other form, of the Participant's personal data as described in this Award Agreement and any other Stock Option grant materials by the Company for the exclusive purpose of implementing, administering and managing the Participant's participation in the Plan. The Participant understands that the Company **may** hold certain personal information about the Participant, including, but not limited to, the Participant's name, home address and telephone number, date of birth, social insurance number or other identification number, salary, nationality, job title, any Shares held in the Company, details of all Stock Options or any other equity Awards under the Plan awarded, cancelled, exercised, vested, unvested or outstanding in the Participant's favor ("Data"), for the exclusive purpose of implementing, administering and managing the Plan. The Participant further understands that such Data may be transferred to any stock plan service provider selected by the Company to assist the Company with the implementation, administration and management of the Plan.
- (f) This Agreement may not be modified except in writing executed by each of the parties to it.
- (g) The Stock Options granted to the Participant under this Agreement are subject to all the provisions of the Plan, the provisions of which are hereby made a part of this Agreement, and are further subject to all interpretations, amendments, rules and regulations, which may from time to time be promulgated and adopted pursuant to the Plan. In the event of any conflict between the provisions of this Agreement and those of the Plan, the provisions of the Plan shall control.
- (h) Neither this Agreement nor the Stock Options confer upon the Participant any right to continue their employment with the Company or otherwise continue to provide their services to the Company.

These General Terms and Conditions apply to Office/Co-Working, Virtual Office and Membership agreements for services We supply to You.

1. General Agreement

- 1.1. Nature of an agreement: At all times, each Center remains in Our possession and control. YOU ACCEPT THAT AN AGREEMENT CREATES NO TENANCY INTEREST, LEASEHOLD ESTATE OR OTHER REAL PROPERTY INTEREST IN YOUR FAVOR WITH RESPECT TO THE ACCOMMODATION. Occupation by You is the commercial equivalent of an agreement for accommodation in a hotel. We are giving You the right to share the use of the Center with Us and other clients.
- 1.2. House Rules: The House Rules, which are incorporated into these terms and conditions, are primarily in place and enforced to ensure that all clients have a professional environment to work in.
- 1.3. Availability at the start of an agreement: If for any unfortunate reason We cannot provide the services or accommodation in the Center stated in an agreement by the start date, We will have no liability to You for any loss or damage but You may either move to one of Our other Centers (subject to availability), delay the start of the agreement or cancel it.
- 1.4. **AUTOMATIC RENEWAL:** SO THAT WE CAN MANAGE YOUR SERVICES EFFECTIVELY AND TO ENSURE SEAMLESS CONTINUITY OF THOSE SERVICES, ALL AGREEMENTS WILL RENEW AUTOMATICALLY FOR SUCCESSIVE PERIODS EQUAL TO THE CURRENT TERM UNTIL BROUGHT TO AN END BY YOU OR US. ALL PERIODS SHALL RUN TO THE LAST DAY OF THE MONTH IN WHICH THEY WOULD OTHERWISE EXPIRE. THE FEES ON ANY RENEWAL WILL BE AT THE THEN PREVAILING MARKET RATE (PRICES ARE SET ANNUALLY SO DEPENDING ON WHEN YOUR AGREEMENT IS DUE TO RENEW, THERE MAY BE A CHANGE IN PRICE). IF YOU DO NOT WISH FOR AN AGREEMENT TO RENEW THEN YOU CAN CANCEL IT EASILY WITH EFFECT FROM THE END DATE STATED IN THE AGREEMENT, OR AT THE END OF ANY EXTENSION OR RENEWAL PERIOD, BY GIVING US PRIOR NOTICE. NOTICE MUST BE GIVEN THROUGH YOUR ONLINE ACCOUNT OR THROUGH THE APP. THE NOTICE PERIODS REQUIRED ARE AS FOLLOWS:

Term	Notice Period
Month-to-Month	no less than 1 month's notice from the 1 st day of any calendar month
3 months	no less than 2 month's notice prior to the end of the term
More than 3 months	no less than 3 month's notice prior to the end of the term

- 1.5. We may elect not to renew an agreement. If so, We will inform You by email, through the App or Your online account, according to the same notice periods specified above.
- 1.6. If the Center is no longer available: In the event that We are permanently unable to provide the services and accommodation at the Center stated in an agreement, We will offer You accommodation in one of Our other centers. In the unlikely event We are unable to find a nearby alternative accommodation, Your agreement will end and You will only have to pay monthly fees up to that date and for any additional services You have used.
- 1.7. Ending an agreement immediately: We may put an end to an agreement immediately by giving You notice if (a) You become insolvent or bankrupt; or (b) You breach one of your obligations which cannot be remedied, or which We have given You notice to remedy and which You have failed to remedy within 14 days of that notice; or (c) Your conduct, or that of someone at the Center with Your permission or invitation, is incompatible with ordinary office use and, (i) that conduct continues despite You having been given notice, or (ii) that conduct is material enough (in Our reasonable opinion) to warrant immediate termination; or (d) You are in breach of the "Compliance With Law" clause below. If We put an end to an agreement for any of the reasons referred to in this clause, it does not put an end to any of Your financial obligations, including, without limitation, for the remainder of the period for which Your agreement would have lasted if We had not terminated it.
- 1.8. When an Office agreement ends: When an agreement ends You must vacate Your accommodation immediately, leaving it in the same state and condition as it was when You took it. If You leave any property in the Center, We may dispose of it at Your cost in any way We choose without owing You any responsibility for it or any proceeds of sale. If You continue to use the accommodation when an agreement has ended, You are responsible for any loss, claim or liability We may incur as a result of Your failure to vacate on time.
- 1.9. Transferability: Subject to availability (which shall be determined in Our sole discretion) You may transfer Your agreement to alternative accommodation in the IWG network of Centers provided that Your financial commitment remains the same (or increases) and such transfer is not used to extend or renew an existing agreement. Such a transfer may require entry into a new agreement.

2. Use of the Centers:

2.1. Business Operations: You may not carry on a business that competes with Our business of providing serviced offices and flexible working. You may not use Our name (or that of Our affiliates) in any way in connection with Your business. You are only permitted to use the address of a Center as Your registered office address if it is permitted by both law and if We have given You prior written consent (given the administration there is an additional fee chargeable for this service). You must only use the accommodation for office business purposes. If We decide that a request for any particular service is excessive, We reserve the right to charge an additional fee. In order to ensure that the Center provides a great working environment for all, We kindly ask you to limit any excessive visits by members of the public.

2.2. Accommodation

2.2.1. Alterations or Damage: You are liable for any damage caused by You or those in the Center with Your permission, whether express or implied, including but not limited to all employees, contractors and/or agents.

2.2.2. IT Installations: We take great pride in Our IT infrastructure and its upkeep and, therefore, You must not install any cabling, IT or telecom connections without Our consent, which We may refuse at our absolute discretion. As a condition to Our consent, You must permit Us to oversee any installations (for example, IT or electrical systems) and to verify that such installations do not interfere with the use of the accommodation by other clients or Us or any landlord of the building. Fees for installation and de-installation will be at Your cost.

2.2.3. Use of the Accommodation: An agreement will list the accommodation We initially allocate for Your use. You will have a non-exclusive right to the rooms allocated to You. Where the accommodation is a Coworking desk, this can only be used by one individual, it cannot be shared amongst multiple individuals. Occasionally to ensure the efficient running of the Center, We may need to allocate different accommodation to You, but it will be of reasonably equivalent size and We will notify You with respect to such different accommodation in advance.

2.2.4. Access to the Accommodation: To maintain a high level of service, We may need to enter Your accommodation and may do so at any time, including and without limitation, in an emergency, for cleaning and inspection or in order to resell the space if You have given notice to terminate. We will always endeavor to respect any of Your reasonable security procedures to protect the confidentiality of Your business.

2.3. Membership:

2.3.1. If You have subscribed to a Membership Agreement, You will have access to all participating centers worldwide during standard business working hours and subject to availability.

2.3.2. Membership Usage: Usage is measured in whole days and unused days cannot be carried over to the following month. A membership is not intended to be a replacement for a full-time workspace and all workspaces must be cleared at the end of each day. You are solely responsible for Your belongings at the center at all times. We are not responsible for any property that is left unattended. Should You use more than Your membership entitlement, We will charge You an additional usage fee. You may bring in 1 guest free of charge (subject to fair usage). Any additional guests will be required to purchase a day pass.

2.3.3. As a Member, You may not use any Center as Your business address without an accompanying office or virtual office agreement in place. Any use of the Center address in such a way will result in an automatic enrollment in the Virtual Office product for the same term as Your membership and You will be invoiced accordingly.

2.4. Compliance with Law: You must comply with all relevant laws and regulations in the conduct of Your business. You must not do anything that may interfere with the use of the Center by Us or by others (including but not limited to political campaigning or immoral activity), cause any nuisance or annoyance, or cause loss or damage to Us (including damage to reputation) or to the owner of any interest in the building. If We have been advised by any government authority or other legislative body that it has reasonable suspicion that You are conducting criminal activities from the Center, or You are or will become subject to any government sanctions, then We shall be entitled to terminate any and all of Your agreements with immediate effect. You acknowledge that any breach by You of this clause shall constitute a material default, entitling Us to terminate Your agreement without further notice.

2.5. Ethical Trading: Both We and You shall comply at all times with all relevant anti-slavery, anti-bribery and anti-corruption laws.

2.6. Data Protection:

2.6.1. Each party shall comply with all applicable data protection legislation. The basis on which we will process Your personal data is set out in our privacy policies (available on our website at www.iwgplc.com/clientprivacypolicy.)

2.6.2. You acknowledge and accept that we may collect and process personal data concerning You and/or your personnel in the course of our agreement for services with you. Such personal data will be processed in accordance with our privacy policy. Where you provide this data to us, you will ensure that you have the necessary consents and notices in place to allow for this.

2.7. Employees: We will both have invested a great deal in training Our staff, therefore, neither of us may knowingly solicit or offer employment to the other's staff employed in the Center (or for 3 months after they have left their employment). To recompense the other for staff training and investment costs, if either of us breaches this clause the breaching party will pay upon demand to the other the equivalent of 6 months' salary of any employee concerned.

2.8. Confidentiality: The terms of an agreement are confidential. Neither of us may disclose them without the other's consent unless required to do so by law or an official authority. This obligation continues for a period of 3 years after an agreement ends.

2.9. Assignment: An agreement is personal to You and cannot be transferred to anyone else without prior consent from Us unless such transfer is required by law. However, We will not unreasonably withhold our consent to assignment to an affiliate provided that You execute our standard form of assignment. We may transfer any agreement and any and all amounts payable by You under an agreement to any other member of Our group.

2.10. Applicable law: An agreement is interpreted and enforced in accordance with the law of the place where the Center is located other than in a few specific jurisdictions which are detailed in the House Rules. We and You both accept the exclusive jurisdiction of the courts of that jurisdiction. If any provision of these terms and conditions is held void or unenforceable under the applicable law, the other provisions shall remain in force.

3. Our liability to You and Insurance

3.1. The extent of Our liability: To the maximum extent permitted by applicable law, We are not liable to You in respect of any loss or damage You suffer in connection with an agreement, including without limitation any loss or damage arising as a result of our failure to provide a service as a result of mechanical breakdown, strike or other event outside of Our reasonable control otherwise unless We have acted deliberately or have been negligent. In no event shall We be liable for any loss or damage until You provide written notice and give Us a reasonable time to remedy it. If We are liable for failing to provide You with any service under an agreement then, subject to the exclusions and limits set out immediately below, We will pay any actual and the reasonable additional expense You have incurred in obtaining the same or similar service from elsewhere.

3.2. Your Insurance: It is Your responsibility to arrange insurance for property which You bring in to the Center, for any mail You send or receive and for Your own liability to your employees and to third parties. We strongly recommend that You put such insurance in place.

3.3. IT Services and Obligations: Whilst We have security internet protocols in place and strive to provide seamless internet connectivity, WE DO NOT MAKE ANY REPRESENTATION AND CANNOT GUARANTEE ANY MAINTAINED LEVEL OF CONNECTIVITY TO OUR NETWORK OR TO THE INTERNET, NOR THE LEVEL OF SECURITY OF IT INFORMATION AND DATA THAT YOU PLACE ON IT. You should adopt whatever security measures (such as encryption) You believe are appropriate to Your business. Your sole and exclusive remedy in relation to issues of reduced connectivity which are within Our reasonable control shall be for Us to rectify the issue within a reasonable time following notice from You to Us.

3.4. EXCLUSION OF CONSEQUENTIAL LOSSES: WE WILL NOT IN ANY CIRCUMSTANCES HAVE ANY LIABILITY TO YOU FOR LOSS OF BUSINESS, LOSS OF PROFITS, LOSS OF ANTICIPATED SAVINGS, LOSS OF OR DAMAGE TO DATA, THIRD PARTY CLAIMS OR ANY CONSEQUENTIAL LOSS. WE STRONGLY RECOMMEND THAT YOU INSURE AGAINST ALL SUCH POTENTIAL LOSS, DAMAGE, EXPENSE OR LIABILITY.

3.5. Financial limits to our liability: In all cases, our liability to You is subject to the following limits:

3.5.1. without limit for personal injury or death;

3.5.2. up to a maximum of GBP 1 million (or USD 1.5 million or EUR 1 million or other local equivalent) for any one event or series of connected events for damage to Your personal property; and

3.5.3. in respect of any other loss or damage, up to a maximum equal to 125% of the total fees paid between the date services under an agreement commenced and the date on which the claim in question arises; or if higher, for office agreements only, GBP 50,000 / USD 100,000 / EUR 66,000 (or local equivalent).

4. Fees

- 4.1. Service Retainer/Deposit: Your service retainer / deposit will be held by Us without generating interest as security for performance of all Your obligations under an agreement. All requests for the return must be made through Your online account or App after which the service retainer/deposit or any balance will be returned within 30 days to You once your agreement has ended and when You have settled Your account. We will deduct any outstanding fees and other costs due to Us before returning the balance to You. We will require You to pay an increased retainer if the monthly office or virtual office fee increases upon renewal, outstanding fees exceed the service retainer/deposit held, and/or You frequently fail to pay invoices when due.
- 4.2. Taxes and duty charges: You agree to pay promptly (i) all sales, use, excise, consumption and any other taxes and license fees which You are required to pay to any governmental authority (and, at Our request, You will provide to Us evidence of such payment) and (ii) any taxes paid by Us to any governmental authority that are attributable to Your accommodation, where applicable, including, without limitation, any gross receipts, rent and occupancy taxes, tangible personal property taxes, duties or other documentary taxes and fees.
- 4.3. Payment: We are continually striving to reduce our environmental impact and support You in doing the same. Therefore, We will send all invoices electronically and You will make payments via an automated method such as Direct Debit or Credit Card, wherever local banking systems permit.
- 4.4. Late payment: If You do not pay fees when due, a fee will be charged on all overdue balances. This fee will differ by country and is listed in the House Rules. If You dispute any part of an invoice, You must pay the amount not in dispute by the due date or be subject to late fees. We also reserve the right to withhold services (including for the avoidance of doubt, denying You access to the Center where applicable) while there are any outstanding fees and/or interest, or You are in breach of an agreement.
- 4.5. Insufficient Funds: Due to the additional administration We incur, You will pay a fee for any returned or declined payments due to insufficient funds. This fee will differ by country and is listed in the House Rules.
- 4.6. Activation: An activation fee is payable in respect of each agreement You have with Us (including any new agreements entered into under clause 1.9 above). This fee covers the administrative cost of the client onboarding process and account setup. This fee is set out in each Local Services Agreement and is charged on a per occupant basis for Serviced Office and Coworking (dedicated desk), on a per location basis for Virtual Office and on a per person basis for Membership. Further information is set out in the House Rules.
- 4.7. Indexation: If an agreement is for a term of more than 12 months, or a month to month agreement is not terminated within 12 months, We will increase the monthly fee on each anniversary of the start date in line with the relevant inflation index detailed in the House Rules.
- 4.8. Office Restoration: Upon Your departure or if You choose to relocate to a different room within a Center, We will charge a fixed office restoration service fee to cover normal cleaning and any costs incurred to return the accommodation to its original condition and state. This fee will differ by country and is listed in the House Rules. We reserve the right to charge additional reasonable fees for any repairs needed above and beyond normal wear and tear.
- 4.9. Standard services: Monthly fees, plus applicable taxes, and any recurring services requested by You are payable monthly in advance. Where a daily rate applies, the charge for any such month will be 30 times the daily fee. For a period of less than one month, the fee will be applied on a daily basis.
- 4.10. Pay-as-you-use and Additional Variable Services: Fees for pay-as-you-use services, plus applicable taxes, are payable monthly in arrears at our standard rates which may change from time to time and are available on request.
- 4.11. Discounts, Promotions and Offers: If You benefited from a special discount, promotion or offer, We will discontinue that discount, promotion or offer without notice if You materially breach Your agreement.

This agreement provides the key information you need to move ahead with your office. You can accept the agreement by clicking the blue button at the bottom of the page, or alternatively if you have any questions or need any assistance then please call our helpline on +1-855-400-3575

AGREEMENT DATE : APRIL 29, 2021 CONFIRMATION NO : OPP-2462204

BUSINESS CENTER DETAILS	CLIENT DETAILS
<p>Ohio, Cincinnati - Downtown - PNC Center</p> <p>Address 201 E. Fifth Street Suite 1900 Cincinnati Ohio 45202 United States of America</p>	<p>Company Name Blue Water Woodies, Inc.</p> <p>Contact Name Edn Henderson</p> <p>Address * 1030 SW 25th Way </p> <p>City * Gainesville</p> <p>County/ State/ Provincial Municipality * Florida</p> <p>Post Code * 32608</p> <p>Country * United States of America</p>

OFFICE PAYMENT DETAILS (incl. tax and excl. services)			
Office Number	Price per Person per Day	# People	Price per Office per Day
1929	\$ 15.57	1	\$ 15.57
TOTAL AVERAGE MONTHLY PRICE PER PERSON PER MONTH			\$ 467.00
TOTAL MONTHLY PRICE			\$ 467.00

SERVICE PROVISION : Start Date

- An Activation fee of \$ 49.00 per occupant will be payable.
- Invoices/Fees are charged on a monthly basis which is calculated based on a 30-day month.
- All agreements end on the last calendar day of the month.
- A refundable service retainer equivalent to 2 x the monthly office fee will be payable in two instalments, the first payment will be invoiced immediately and the second payment will be invoiced on the 3rd invoice, unless the agreement has been terminated prior.

Comments:

* Month-to-Month Agreement

TERMS AND CONDITIONS

We are Regus Managers and Group, LLC, referred to in the terms and conditions as "We", "Us", "Our". The Company Name listed above will be referred to in the terms and conditions as "You", "Your". This Agreement incorporates Our terms of business set out in attached Terms and Conditions, attached House Rules and Service Price Guide (where available), which You confirm You have read and understood. We both agree to comply with those terms and our obligations as set out in them. This agreement is binding from the agreement date and may not be terminated once it is made, except in accordance with its terms. Note that the Agreement does not come to an end automatically See "Automatic Renewal" section of Your terms and conditions for the notice terms if You wish to end your agreement.

AGREEMENT TO ARBITRATE; CLASS ACTION WAIVER: Any dispute or claim relating in any way to this agreement shall be resolved by binding arbitration administered by the American Arbitration Association in accord with its Commercial Arbitration Rules (available at www.adr.org), except that You or We may assert claims in small claims court and You and We may pursue counterclaims to remove You, or prevent Your removal, from the Center if You do not leave when this agreement terminates. The arbitrator shall have exclusive authority to resolve any dispute relating to the interpretation, applicability, enforceability or formation of this agreement. The arbitrator shall not conduct arbitration as a class or representative action. You and We acknowledge that this agreement is a transaction in interstate commerce governed by the Federal Arbitration Act. You and We agree to waive any right to pursue any dispute relating to this agreement in any state, private attorney general, or other representative action.

I accept the terms and conditions

[Download the terms and conditions](#)

[Download the house rules](#)

CONFIRM BY TYPING YOUR NAME IN THE BOX BELOW

Name: on behalf of Blue Water Woodies, Inc.

Signed on April 29, 2021

I confirm these details are correct to the best of my knowledge

This website is secure. Your personal details are protected at all times. [Print Agreement](#)

IF YOU NEED ASSISTANCE CALL OUR HELPLINE ON +1-855-400-3575

Master Service Agreement

between
Blue Water Vaccines, Inc. & Ology Bioservices, Inc.

This Master Service Agreement (this “**Agreement**”) is made effective as of the 19th day of July, 2019 (the “Effective Date”) by and between Blue Water Vaccines, Inc., a Delaware Company with offices at 15 East Putnam Avenue, Suite 363, Greenwich, CT 06830 (“**Client**”), and Ology Bioservices, Inc., a Delaware corporation having a principal place of business at 13200 N.W. Nano Court, Alachua, Florida 32615 (“**Ology Bio**”). Client and Ology Bio are sometimes referred to herein individually as a “**Party**” and collectively as the “**Parties**.”

WHEREAS, Ology Bio offers a wide range of services including, but not limited to, technology transfer, process development, analytical method optimization, cGMP manufacture, regulatory affairs, and stability studies of biologic products.

WHEREAS, Client hereby engages Ology Bio and Ology Bio accepts the engagement to provide the offered services from time to time pursuant to the terms hereof and each separate mutually accepted project agreement in the form attached hereto as Exhibit A (each a “**Project Addendum**”). Client and Ology Bio shall enter into a Project Addendum for each project they wish to be governed by the terms and conditions of this Agreement.

Article 1, DEFINITIONS

1.1 As used in this Agreement, the following words and phrases shall have the following meanings:

“**Affiliate**” means any corporation or other business entity directly or indirectly controlled by, controlling, or under common control with a Party or its parent corporation. The term “control” (including, with correlative meaning, the terms “controlled by,” “controlling” and “under common control with”) means the possession, directly or indirectly, of the power to direct or cause the direction of the management and policies of such Party, whether through the ownership of voting securities, by contract or otherwise, or such other relationship as, in fact, constitutes actual control.

“**Applicable Law**” means all international, national, federal, state, provincial and local laws, statutes, codes, rules, regulations, ordinances, orders, decrees or other pronouncements of any governmental, administrative or judicial authority having the effect of law that govern the Parties’ respective obligations hereunder, including cGMP.

“**Background IP**” means with respect to a Party, Intellectual Property of that Party existing before or at the Effective Date of this Agreement or developed independently of the activities under this Agreement that is under the control of either Party and that is reasonably necessary, relevant or otherwise useful for performing the activities under this Agreement and/or for the exercise of rights under any license granted hereunder as applicable. For the purposes of this definition “control” means ownership and/or the right to grant licenses to Third Parties.

“**Batch**” means a specific quantity of Product comprising a number of Units mutually agreed upon between Client and Ology Bio, and that (a) is intended to have uniform character and quality within specified limits, and (b) is Produced according to a single manufacturing order during the same cycle of manufacture.

“**Batch Related Documents**” means manufacturing documentation including analytical data, certificates of analysis, batch records, and such other documents as reasonably requested by Client to enable the release of Product in conformance with the applicable Quality Agreement.

“**Bill of Materials**” or “**BOM**” means the listing of Materials, part numbers, and relative quantities to be used in the Production of Product.

“**Bulk Drug Substance**” or “**BDS**” means the active pharmaceutical ingredient, as set forth in each applicable Project Addendum.

“**Client Background IP**” shall mean the Background IP owned or Controlled by Client as of the Effective Date.

“**Client Improvements**” shall mean any designs, inventions, discoveries, innovations, methods, improvements, processes, know-how, or techniques, whether patentable or copyrightable or not, to the Client Background IP arising out of the performance of services under this Agreement by Ology Bio and/or any use of either Client Intellectual Property and/or the BDS and in any case directly (i) pertaining to the chemical structure of Product, the BDS or (ii) require the use of Product and/or the BDS. For the avoidance of doubt, Client Improvements shall not include Ology Bio Background IP or Process Inventions or Ology Bio Improvements, as defined below.

“**Components**” shall mean the primary packaging components (e.g. vial, stopper, seal and syringe) used by Ology Bio in the filling of a Drug Product under this Agreement. Components are listed in the Bill of Materials.

“**Confidential Information**” is defined as set forth in Article 18.

“**Control**” or “**Controlled**” means, with respect to any material, information or Intellectual Property that a Party (a) owns or (b) has a license (other than a license granted to such Party under this Agreement) to such material, information or Intellectual Property and, in each case, has the ability to grant to the other Party access, a license, or a sublicense (as applicable) to the foregoing on the terms and conditions set forth in this Agreement without violating the terms of any then-existing agreement or other arrangement with any Third Party.

“**Current Good Manufacturing Practices**” or “**cGMP**” means the following to the extent having jurisdiction over the Production of Product: (a) the good manufacturing practices required by the FDA and set forth in the FD&C Act or FDA regulations (including without limitation 21 CFR 210 and 211); (b) the practices and principles promulgated by the EMA (European Medicines Agency), including ED Directives 2001/83/ED and 2003/94/EC; and (c) the PICS guidelines to good manufacturing practices in effect at any time during the Term of this Agreement.

“**Drug Product**” or “**DP**” shall mean final filled product.

“**Effective Date**” shall mean the date set forth above.

“**Executed Batch Record**” shall mean the completed batch record (disposed by Ology Bio as released, rejected or aborted) and associated exception reports, and if applicable, a Lot QC Data Packet for each Batch of Product.

“**FD&C Act**” shall mean the United States Federal Food, Drug and Cosmetic Act, as may be amended from time to time.

“**FDA**” shall mean the United States Food and Drug Administration or any successor entity thereto.

“**Intellectual Property**” shall mean ideas, concepts, discoveries, inventions, developments, know-how, trade secrets, techniques, methodologies, modifications, innovations, improvements, writings, documentation, data and rights (whether or not protectable under state, federal or foreign patent, trademark, copyright or similar laws) or the like, whether or not written or otherwise fixed in any form or medium, regardless of the media on which contained and whether or not patentable or copyrightable.

“**Joint Intellectual Property**” means any intellectual property invented or discovered during the performance of Services by both Parties jointly that does not constitute either Client Improvements or Ology Bio Improvements.

“**Lot QC Data Packet**” shall mean a listing of the analytical testing and Specifications performed on the Product and the results of such tests. In some instances, a QCMD may be provided in lieu of a Lot QC Data Packet.

“**Master Batch Record**” or “**MBR**” shall mean, with respect to each Presentation of Product to be Produced hereunder, a formal set of instructions for the Production of each Presentation of such Product. The Client MBR shall be developed and maintained in Ology Bio’s standard format by Ology Bio, using Client’s master formulation and technical support.

“**Materials**” as used in this Agreement shall collectively mean all materials required for Production of Product, including the BDS, Components, Secondary Packaging Materials and Raw Materials.

“**Material Specifications**” shall mean the specifications and testing to be performed on the Materials, as specified in the Quality Agreement.

“**Monetary Cap**” shall mean Ology Bio’s aggregate liability under this Agreement, including but not limited to third party claims, not to exceed the aggregate amount paid to Ology Bio by Client under this Agreement in the first three calendar years of the Agreement

“**Ology Bio Background IP**” means the Background IP owned or Controlled as of the Effective Date by Ology Bio.

“Ology Bio Improvements” means any designs, inventions, discoveries, innovations, methods, improvements, processes, know-how, techniques or other valuable developments, whether patentable or copyrightable or not made by Ology Bio, to the Ology Bio Background IP or the Process Inventions. arising out of the performance of services under this Agreement.

“Presentation” shall mean the specific formulation and Components for the Product as specified in the applicable Batch Record.

“Process Inventions” shall mean any Inventions that are new manufacturing technologies, methods, processes or techniques, or are improvements to existing manufacturing technologies, methods, processes or techniques, and that are generally applicable to pharmaceutical products.

“Process Services” or **“Services”** shall mean those development, manufacturing, optimizing, and/or testing processes performed by Ology Bio. Process Services activities shall be identified in each applicable Project Addendum.

“Produce” or **“Production”** shall mean the development, analysis, synthesis, formulation, filling, packaging, inspecting, labeling, and/or testing of Product by Ology Bio as specified in the applicable Master Batch Record or finishing specification sheet.

“Product” shall mean product as specified in each applicable Project Addendum.

“Product Requirements” shall mean cGMPs, the Product Specifications and the master batch record.

“Product Specifications” shall mean, with respect to Product, the specifications and testing to be performed for the Product and/or the stability program that are set forth in the Ology Bio SOPs and the relate Batch Records. The Product Specifications include all tests that Ology Bio is required to conduct or cause to be conducted as specified in the QCMD. The Product Specifications may be modified from time to time only by a written agreement of Client and Ology Bio.

“Production Price” shall be defined in Section 5.1.

“Project Addendum” shall mean an addendum to this Agreement for each project and/or Presentation of Product Produced hereunder, an example of which is attached hereto as Exhibit A. The Project Addendum shall include a statement of work, Project Plan, a related Quality Agreement, and other documents as reasonably determined by the Parties.

“Project Addendum Effective Date” shall mean the effective date of the Project Addendum as set forth in such Addendum.

“Project Addendum Term” shall be defined as set forth in Article 8.

“Quality Agreement” shall mean an addendum to this Agreement under which the Parties allocate the pharmaceutical responsibilities, as further set forth in Section 2.3.

“**Quality Control Master Document**” or “**QCMD**” shall mean a listing of the analytical testing and corresponding Specifications, to be performed on the Bulk Drug Substance, Raw Materials and in some instances, Product.

“**Raw Materials**” shall mean all excipients, inactive ingredients and other substances used by Ology Bio in the Production of Product under this Agreement with the exception of BDS, Components and Secondary Packaging Materials. All Raw Materials are listed in the Bill of Materials.

“**Regulatory Approval**” shall mean all authorizations by the appropriate Regulatory Authority necessary for use in clinical trials or sale in a jurisdiction, including without limitation, approval of labeling and Production.

“**Regulatory Authority**” means those agencies or authorities responsible for regulation of the Product in the country where the Product is used in clinical trials or will be sold, provided such Regulatory Authority is expressly agreed to by the Parties in the Quality Agreement. Ology Bio will have no obligation to Produce in compliance with the requirements of a Regulatory Authority not specified in the Quality Agreement.

“**Released Executed Batch Record**” shall mean the completed batch record and associated exception reports, and a Lot QC Data Packet created for each Batch of Product.

“**Secondary Packaging Materials**” as used in this Agreement shall mean any material employed in the secondary packaging of the Product (e.g. leaflet, label and folded box) but excluding any outer packaging used for transportation or shipment. All Secondary Packaging Materials are listed in the Bill of Materials.

“**Unit**” shall mean an individually packaged dose of Product, including by way of example only, a vial or prefilled syringe, as specified in the Project Plan.

Article 2, PROJECT ADDENDUM/PLANS/QUALITY AGREEMENT

2.1 Project Addendum. For each Project and/or Presentation of Product to be Produced by Ology Bio hereunder, the Parties shall agree in writing upon a Project Addendum. The Project Addendum shall be prepared by Ology Bio. In no event shall Ology Bio be required to schedule or commence Services until a Project Addendum for such Services has been approved in writing by both Ology Bio and Client.

2.2 Project Plan. For Services and Product to be Produced hereunder, the Parties shall agree in writing upon a Project Plan, which shall be included in the Project Addendum. Ology Bio shall not be required to schedule or commence any Production until a Project Plan for such Product has been approved in writing by both Ology Bio and Client.

2.3 Quality Agreement. The Parties will agree in writing on a Quality Agreement. Ology Bio shall not be required to schedule any Production until a Quality Agreement has mutually agreed and been duly signed by both Ology Bio and Client.

2.4 Amendment. This Agreement, Project Addendum, and Quality Agreement may be amended from time to time, only upon mutual written agreement of the Parties. Upon execution of any Project Addendum, or Quality Agreement, such executed document shall be deemed to be incorporated herein by reference and made a part of this Agreement.

2.5 Effect of Failure to Execute Plans. Failure to execute a Project Addendum and Quality Agreement with respect to a Product will not relieve either Party of any obligation accruing with respect to such Product prior to such failure to execute; provided, however, that Ology Bio will not, without the prior written consent of Client (the "Client Approval"), commence any work or incur any obligations with to such Product unless a Project Plan, including any Project Addendum has been executed by the Parties.

Article 3, PURCHASE AND SUPPLY OF MATERIALS

3.1 Client Supplied Materials. Client, at its expense (including without limitation shipping costs), shall supply to Ology Bio, in a timely manner, all Client supplied Materials. On receipt of the Client supplied Materials, Ology Bio's sole obligation with respect to evaluation of the Client supplied Materials shall be to review the accompanying certificate of analysis to confirm that the Client supplied Materials conform with the specifications. The responsibility for vendor/supplier qualification is set forth in the Quality Agreement.

3.2 Material Delivery Delays. Timely delivery of Client supplied Materials shall mean that the respective Materials and the required cGMP-related documents reach Ology Bio prior to the scheduled manufacturing date of such Product per the timing set forth in the Project Plan. Any delay in delivery of the Materials by Client may lead to a delay by Ology Bio in its performance hereunder, which delay shall not be considered a breach of Ology Bio's obligations hereunder. Material Delivery Delays shall impact production space availability and timing. If because of a Material Delivery Delay Ology Bio incurs additional costs, Ology Bio, in its sole discretion, may require Client to reimburse for any such additional costs. If the cause of the delay is due to Ology Bio's failure to timely order Materials to support development and production activities, Ology Bio shall be responsible for any additional costs due to such delays. Ology Bio shall promptly notify Client of any Material Delivery Delays.

3.3 Ology Bio Supplied Materials. Ology Bio will purchase all Materials listed in the Bill of Materials as Ology Bio Supplied Materials. The cost of Ology Bio Supplied Materials shall be invoiced to Client as the Materials are received by Ology Bio and shall include an additional 15% fee for procurement and handling of any Ology Bio Supplied Materials. Ology Bio shall control packaging materials listed in the Bill of Materials and shall assist Client with evaluation and purchase of modified materials in the event that Client requests a change in Presentation. Ology Bio shall not initiate any changes to Materials without written approval from Client.

3.4 Importer of Record. In the event any material or equipment to be supplied by Client, including without limitation Client supplied Materials, is imported into the United States for delivery to Ology Bio ("**Imported Goods**"), such Imported Goods shall be imported (Incoterms 2010) with Client being the "Importer of Record". As the Importer of Record, Client shall be responsible for all aspects of the Imported Goods including, without limitation (a) customs and other regulatory clearance of Imported Goods, (b) payment of all tariffs, duties, customs, fees, expenses and charges payable in connection with the importation and delivery of the Imported Goods, and (c) keeping all records, documents, correspondence and tracking information required by Applicable Law arising out of or in connection with the importation or delivery of the Imported Goods.

Article 4, MODIFICATION OR CANCELLATION

4.1 Modification or Cancellation. In the event that Client modifies the activities or schedule of activities under a applicable Project Addendum, Client shall pay to Ology Bio those non-cancellable costs for equipment, material, labor, Production, manufacturing, and research and development space already incurred and applicable to the modified activities and schedule to the extent Ology Bio is unable to reschedule or repurpose the abovementioned for another project, despite Ology Bio's commercially reasonable efforts to do so.

Article 5, PRICE

5.1 Product Production Price. The price to be paid by Client for the Production of Product (the "**Production Price**") is set forth in the Project Addendum.

5.2 Process Services Price. The price to be paid by Client for Process Services shall be set forth in the Project Plan contained in the Project Addendum.

Article 6, SHIPMENT, STORAGE AND INVOICING

6.1 Delivery Terms. Product shall be delivered to Client ExWorks (Incoterms 2010) at Ology Bio's facility in Alachua, Florida, freight collect, by a common carrier designated by Client; provided, however, Ology Bio shall be responsible for the loading of the Product on departure and shall bear all costs of such loading.

6.2 Storage.

6.2.1 Product Storage. Ology Bio will store Product as required and Client shall pay, the storage fees at Ology Bio's standard rates as stated in the applicable Project Addendum.

6.2.2 BDS and Material Storage. Ology Bio will not be required to store quantities of Materials and/or BDS more than required to Produce one (1) Batch(es) of Product without the prior written consent of Ology Bio and Client's agreement to reimburse Ology Bio for all costs incurred in connection with such storage at Ology Bio's standard rates. Ology Bio will store Materials and/or BDS up to the Storage Period stated in Section 6.2.1 after Ology Bio's release of the Product or termination of the Agreement and/or the Project Addendum. After the Storage Period, if Ology Bio agrees to store the Materials and/or BDS longer, then Ology Bio shall charge, and Client shall pay, the storage fees at Ology Bio's standard rates.

6.2.3 Third Party Storage. Ology Bio shall be permitted to store Product and Materials in third party storage facilities which shall be previously audited by Ology Bio and reasonably approved in advance by Client.

6.3 Subsequent Export. Client agrees and represents that Client is the owner of the goods that are consigned to Ology Bio for contract manufacturing services and warrants that Client is responsible for any subsequent export or re-export and will comply with all Applicable Law relating to the export or re-export, including the prohibition against unlawful transshipments. Further, where such goods are destined for export or re-export, Client agrees and accepts that it is the Foreign Principal Party in Interest (“**FPPI**”) and warrants that as the FPPI, it will duly authorize and retain a U.S. agent who will act on its behalf, assuming all attendant responsibilities associated with the export or re-export, including obtaining any necessary export licenses, pursuant to 15 C.F.R. §758.3. Client’s responsibilities as FPPI include, but are not limited to, cooperating with its U.S. agent in providing the U.S. government with a detailed description and accurate valuation and classification of the goods, bills of lading, and all other required documentation. Client further agrees to defend Ology Bio against any action, civil or criminal, private or public, in connection with the subsequent export or re-export by Client of the goods.

6.4 Invoicing and Payment Terms. Ology Bioservices shall invoice for Services not more frequent than monthly, based on in-progress work and any Initiation Fees. Unless otherwise set forth in the applicable Project Addendum, payments of undisputed invoices are due on or before thirty (30) days after receipt by Client of the applicable undisputed invoice and shall be made in U.S. dollars by check delivered to Ology Bio or by wire transfer to the address provided by Ology Bio. Each undisputed invoice shall be payable by Client in accordance with the terms noted above. Any undisputed payment due under this Agreement not received within the times noted above shall incur finance charges at the lesser of (a) the maximum rate permitted by law, or (b) one and one-half percent (1.5%) per month on the outstanding balance. All days specified therein are calendar days.

6.5 Default in Payment Obligations. In addition to all other remedies available to Ology Bio in the event of a Client default, if Client does not make payments as required hereunder, Ology Bio may refuse to Produce any Product until Client’s account is paid in full, suspend deliveries of Product until Client provides assurance of performance reasonably satisfactory to Ology Bio, and/or take other reasonable means as Ology Bio may determine.

Article 7, ACCEPTANCE OF PRODUCT

7.1 Product Conformity. Within thirty (30) calendar days from the date of shipment of samples of Product or the Released Executed Batch Record, whichever is later (the “**Inspection Period**”), Client shall determine whether the Batch of Product was Produced according to the Product Requirements and dispute such Batch if such Batch was not Produced in accordance with the Product Requirements (“**Non-Conforming**”) or accept such Batch if such Batch was Produced in accordance with the Product Requirements. If Client believes a Batch is Non-Conforming, it shall notify Ology Bio as set forth in Section 7.1.2.

7.1.1 If Client does not notify Ology Bio in writing within the Inspection Period that the Batch of Product is Non-Conforming, then such Batch shall be deemed to have been accepted and Client will have waived its right to revoke acceptance.

7.1.2 If Ology Bio releases a Batch of Product and Client believes such Batch is Non-Conforming, Client shall provide to Ology Bio a detailed explanation of the non-conformity within the Inspection Period. Such notice of non-conformity shall be confirmed in writing via overnight delivery to Ology Bio. Upon receipt of such notice, Ology Bio shall investigate such alleged non-conformity and, (a) if Ology Bio agrees such Batch is Non-Conforming, deliver to Client a corrective action plan within thirty (30) calendar days after receipt of Client's written notice of non-conformity, or such additional time as is reasonably required if such investigation or plan requires data from sources other than Client or Ology Bio (the "Response Period"), or (b) if Ology Bio disagrees that the Batch of Product is Non-Conforming, Ology Bio will provide to Client a detailed explanation Client in writing within the Response Period.

7.1.3 If the Parties dispute whether the Batch of Product is Conforming or Non-Conforming, the Batch will be submitted to a mutually acceptable laboratory or consultant for resolution, whose determination of conformity or non-conformity, and the cause thereof if Non-Conforming, shall be binding upon the Parties for purposes of determining financial liability. Notwithstanding the foregoing, Client shall not release a Batch of Product that Ology Bio has deemed non-conforming. The costs of such laboratory or consultant are to be borne by the Party whose determination was incorrect.

7.2 Remedies for Non-Conforming Product. In the event Ology Bio determines or agrees, or the laboratory or consultant appointed under Section 7.1.3 determines, that a Batch of Product is Non-Conforming due solely to an error of Ology Bio, replace the Non-Conforming Batch, at Ology Bio's expense. If the reason for the Non-Conforming Batch is Materials provided by Client, then Client shall take any and all necessary actions to resolve such nonconformity, including, but not limited to, payment of the invoice for the Non-Conforming Batch.

Article 8, TERM AND TERMINATION

8.1 Term. This Agreement shall commence on the Effective Date of this Agreement and shall continue, unless sooner terminated as set forth herein, until the later of: (a) the fifth anniversary of the Effective of this Agreement, or (b) the last day of the last Project Addendum to terminate or expire, unless earlier terminated in accordance with Sections 8.2 or 8.3 of this Agreement (the "**Term**").

8.1.1 Project Addendum Term and Renewal Term. Each executed Project Addendum shall commence on the Project Addendum Effective Date and continue for the period of time set forth in the Project Addendum ("**Project Addendum Term**"), unless the Project Addendum and/or this Agreement are earlier terminated in accordance with section 8.2.

8.2 Termination.

8.2.1 Subject to Section 8.5, Client may terminate this Agreement or the associated Project Addendum for any or no reason upon sixty (60) days' prior written notice to Ology Bio.

8.2.2 Either Party may terminate a Project Addendum and/or this Agreement upon the material breach of any provision of this Agreement by the other Party if such breach is not cured by the breaching Party within thirty (30) calendar days for monetary or non-monetary defaults (or such additional time as is reasonably necessary to cure such non-monetary default) after receipt by the breaching Party of written notice of such default. At the option of the non-breaching Party, such termination may be with respect to the entire Agreement, or only with respect to the Project Addendum which is subject to the breach.

8.3 Termination for Financial Matters. Either Party may terminate this Agreement immediately by giving the other Party written notice thereof in the event such other Party shall become insolvent or unable to pay its debts when due, or in the event that proceedings are commenced against, or voluntarily by, such Party relating to its bankruptcy or insolvency.

8.4 Additional Rights and Remedies. Subject to Section 13.1, termination under this Article 8 shall be in addition to the other rights and remedies of the terminating Party as specified herein.

8.5 Non-cancelable Costs and Expenses; Facility Use Fee. In the event of the termination of a Project Addendum and/or this Agreement, except by Client as a result of a breach by Ology Bio under Section 8.2.2, Client shall (a) reimburse Ology Bio for all Materials and equipment ordered prior to the notice of termination and are not cancelable at no cost to Ology Bio; (b) pay Ology Bio for all non-cancelable costs incurred by Ology Bio with respect to any outstanding and approved Project Addendums; and (c) if necessary, pay the applicable Batch Cancellation Fee related to the cancellation of any Production at the time of termination as described in the Project Addendum. In addition, in the event of termination or expiration for any reason, Client will pay the prices described in Article 5 for (i) any work-in-process commenced by Ology Bio or (ii) any finished Product Produced prior to expiration or termination. Ology Bio will ship such Materials, work-in-process or finished Product Produced to Client pursuant to Section 6.1 at Client's cost and per Client's instructions. Client shall make payments for all expenses described in this Section 8.5 no later than thirty (30) calendar days from the invoice date. Client agrees to reimburse Ology Bio for all non-cancelable costs incurred by Ology Bio for work performed and Materials ordered with respect to such Product.

8.6 Survival. Termination, expiration, cancellation or abandonment of this Agreement through any means or for any reason shall be without prejudice to the rights and remedies of either Party with respect to any antecedent breach of any of the provisions of this Agreement, subject to Article 13. The provisions of Articles 8, 9.8, 12, 13, 14, 15, 16, 17 and 18 hereof shall survive expiration or termination of this Agreement. Termination of this Agreement for any reason shall not relieve any Party of any obligations accruing prior to such termination.

Article 9, DEVELOPMENT AND MANUFACTURING OF PRODUCT

9.1 Reprocessing, Rework or Reproduction. If reprocessing, rework or reproduction is allowed pursuant to Client's regulatory submissions or approved by Client, it shall be performed in accordance with the Quality Agreement and Client shall be responsible for and promptly reimburse Ology Bio for all costs and expenses incurred in connection with such reprocessing, rework or reproduction.

9.2 Audits.

9.2.1 Quality Audits. Client shall have the right to audit Ology Bio's facilities to determine compliance with Applicable Law. Such audits shall be scheduled at mutually agreeable times upon reasonable advance written notice to Ology Bio. Audits shall be at Client's expense, as detailed in the Project Plan, if an audit occurs more than one (1) time every calendar year unless required by Ology Bio's compliance status or a 'for cause' quality reason has been identified that requires Client to audit Ology Bio more frequently. If Client requests additional audits which are not for cause or due to Ology Bio's compliance status and Ology Bio agrees to such audits, Client will incur fees as set forth in the Project Plan. Such fees shall be paid promptly upon completion of such audits. In connection with performing such audits, Client shall comply with all reasonable rules and regulations promulgated by Ology Bio. All information disclosed or reviewed in such inspections shall be deemed to be the property of Ology Bio and Ology Bio Confidential Information.

9.2.2 Other Audits. Except as provided in Section 9.2.1, any audit, except a for cause audit, shall be at the expense of Client and the prior written consent of Ology Bio.

9.3 Stability Testing. At Client's expense, Ology Bio or a mutually selected party shall perform all stability testing required to be performed on Product. Such stability protocol shall contain a listing of the analytical testing and corresponding Product Specifications, to be performed on the Product in connection with the stability testing program under Applicable Law.

9.4 Permits and Licenses. Client will be responsible, at its expense, for obtaining, maintaining, updating and remaining in compliance with all permits, licenses and other authorizations during the Term of this Agreement, which are necessary or required under federal, state, and local laws, rules and regulations which are applicable to the use and sale of Product Produced by Ology Bio hereunder, in addition to any permits, licenses and other authorizations that are specific to the Production of Product, if any. Ology Bio will be responsible, at its expense, to obtain and maintain all generally required permits and licenses applicable to production of pharmaceutical products generally which are required for Ology Bio to carry out its regulatory and Production obligations hereunder. Ology Bio will have no obligation to obtain permits relating to the sale, marketing, distribution or use of BDS or Product or with respect to the content of any Product labeling.

9.5 Regulatory Requirements. Each Party promptly shall notify the other of new regulatory requirements of which it becomes aware which are relevant to the Production of Product under this Agreement and which are required by an applicable Regulatory Authority or other Applicable Law, and shall confer with each other with respect to the best means to comply with such requirements. Ology Bio shall have no obligation to Produce Product in compliance with the requirements of a Regulatory Authority not explicitly specified in the Quality Agreement. Client shall supply to Ology Bio a copy of its license submission prior to Ology Bio's Production of Product. Client will assume full responsibility for final release of each Batch of Product.

9.6 Changes in Manufacturing.

9.6.1 Product-Specific Changes. If facility, equipment, process or system changes are required of Ology Bio as a result of requirements set forth by a Regulatory Authority, and such regulatory changes apply primarily to the Production and supply of one or more Client Products, then Client and Ology Bio will review such requirements and agree in writing to such regulatory changes, and Client shall bear one hundred percent (100%) of the reasonable costs thereof.

9.6.2 General Changes. If such regulatory changes apply generally to one or more Products as well as to other products produced by Ology Bio for itself or for third parties, then Client shall pay a pro rata amount of the reasonable cost of such regulatory changes based upon the proportion of time that such facility is dedicated to the Production of Products relative to the production of such other products.

9.7 Equipment Expenses. If Ology Bio is required to obtain specialized equipment in order to exclusively to Produce Product for Client, the price of such equipment shall be paid by Client at the time delivery to Ology Bio. Client shall bear cost of installation, commissioning, preventive maintenance, and calibration of such specialized equipment. Ology Bio shall advise Client of any specialized equipment required and the estimated price associated with the purchase and installation of such equipment. Client shall be invoiced for all approved costs as specified in the Project Addendum.

9.8 Ownership of Equipment. Upon termination or expiration of this Agreement, Ology Bio, at its option, shall either (i) transfer possession of the specialized equipment paid for by Client to Client at Client's expense, or (ii) purchase such equipment by paying Client the then current fair market value of such equipment. The fair market value of the equipment shall be mutually determined by the Parties; provided, however, that if the Parties are not able to agree on the fair market value of such equipment within 30 days after commencing such valuation process, each party shall select a nationally known appraisal firm and such appraisal firms shall mutually designate a national appraisal firm to value the equipment.

Article 10, REGULATORY

10.1 Regulatory Approvals. Client shall maintain all necessary Regulatory Approvals of marketing licenses for Product Produced by Ology Bio hereunder. Client shall advise Ology Bio of document requirements in support of filings and similar applications required of foreign governments and agencies including amendments, license applications, supplements and maintenance of such. As agreed upon by Client and Ology Bio in a Regulatory Plan, Ology Bio will provide documents and assist Client in preparation of submissions to Regulatory Authorities designated by Client in support of Client's applications. All regulatory submission preparation and maintenance performed by Ology Bio for Client shall be specified in the Regulatory Plan. Prior to submission to the Regulatory Authority, Client will provide Ology Bio with a copy of the CMC section for review and comment. A final copy of the CMC section will be provided by Client to Ology Bio upon submission to the Regulatory Authority. Upon Regulatory Approval, Client will notify Ology Bio within two (2) calendar days of such approval and the anticipated date of Product launch to the market.

Article 11, TRADEMARKS

11.1 Client grants to Ology Bio a non-exclusive, royalty-free license to use trademarks of Client for the sole purpose of allowing Ology Bio solely to fulfill its responsibilities under this Agreement. Such license shall not be transferable in whole or in part.

11.2 Client shall be solely responsible for selecting, registering and enforcing trademarks of Client used to identify the Product and, except as set forth in Section 11.1, shall have sole and exclusive rights in such trademarks of Client.

Article 12, REPRESENTATIONS AND WARRANTIES

12.1 Mutual Representations. Each Party hereby represents and warrants to the other Party that (a) the person executing this Agreement is authorized to execute this Agreement; (b) this Agreement is legal and valid and the obligations binding upon such Party are enforceable by their terms; and (c) the execution, delivery and performance of this Agreement does not conflict with any agreement, instrument or understanding, oral or written, to which such Party may be bound, nor violate any law or regulation of any court, governmental body or administrative or other agency having jurisdiction over it.

12.2 Ology Bio Warranty.

Ology Bio represents, warrants and covenants to Client that:

- (a) all Product shall be Produced in accordance with the applicable Product Requirements;
- (b) Ology Bio shall perform all Services in accordance with Applicable Laws, and in a competent and professional manner and in compliance with the terms of this Agreement, including each Project Addendum and each Quality Agreement;
- (c) Ology Bio's engagement by Client pursuant to this Agreement does not and will not breach any agreement with any third party and Ology Bio has not entered into and will not enter into any agreement, either written or oral, in conflict with Ology Bio's obligations under this Agreement;
- (d) Ology Bio will not in the performance of its obligations under this Agreement use the services of any person debarred or suspended under 21 U.S.C. §335(a) or (b), or any foreign equivalent;
- (f) at the time of delivery by Ology Bio, all Product produced pursuant to this Agreement and delivered to Client_ by Ology shall not be adulterated, misbranded or mislabeled within the meaning of Applicable Laws, provided, that Ology Bio shall not be liable for defects attributable solely to Client-supplied Materials (including artwork, advertising and labeling);

- (g) no transactions or dealings under this Agreement shall be conducted with or for an individual or entity that is designated as the target of any sanctions, restrictions or embargoes administered by the the United States of America or other countries or entities listed in the applicable Project Addendum;
- (h) to Ology Bio's knowledge, the Services and Production of Product to be performed by Ology Bio under this Agreement will not violate or infringe upon any trademark, tradename, copyright, patent, trade secret, or other Intellectual Property or other right held by any person or entity; and
- (i) Ology Bio will use reasonable care in providing information solely as it relates to Process Services studies, synthesis, formulation, primary packaging and manufacturing process analysis and such information will be accurate and complete in all material respects.

12.3 Disclaimer of Warranties. Except for those warranties set forth in Sections 12.1 and 12.2 of this Agreement, Ology Bio makes no warranties, written, oral, express or implied, with respect to Product or the Process Services and Production of Product. ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT HEREBY ARE DISCLAIMED BY OLOGY BIO. NO WARRANTIES OF OLOGY BIO MAY BE CHANGED EXCEPT IN WRITING AND SIGNED BY A DULY AUTHORIZED REPRESENTATIVE OF OLOGY BIO.

12.4 Client Warranties. Client warrants that (a) it has the right to give Ology Bio any information and materials provided by Client hereunder, and that Ology Bio has the right to use such information and materials for the Production of Product, and (b) Client has no knowledge of any (i) patents or other intellectual property rights that would be infringed by Ology Bio's Production of Product under this Agreement, or (ii) proprietary rights of third parties which would be violated by Ology Bio's performance hereunder. Client warrants that if the Client provides the BDS, the BDS provided to Ology Bio will (1) conform to the BDS specifications and (2) not be adulterated or misbranded within the meaning of the FD&C Act. Client will use and promote the Product in accordance with its regulatory filings and approvals.

12.5 Execution, Delivery and Performance of the Agreement. Client has taken all necessary corporate action on its part to authorize the execution and delivery of this Agreement and the performance of its obligations under this Agreement. This Agreement has been duly executed and delivered on behalf of Client, and constitutes a legal, valid, binding obligation, enforceable against Client and its successors and assigns in accordance with its terms, except as enforceability may be limited by bankruptcy, fraudulent conveyance, insolvency, eorganization, moratorium, and other laws relating to or affecting creditors' rights generally and by general equitable principles. The execution, delivery and performance of this Agreement does not breach, violate, contravene, or constitute a default under any contracts, arrangements or commitments to which Client is a party or by which it is bound nor does the execution, delivery, and performance of this Agreement by Client violate any order, law, or regulation of any court, governmental body, or administrative or other agency having authority over it.

Article 13, EXCLUSIVE REMEDIES, LIMITATION OF LIABILITY AND RISK OF LOSS

13.1 Exclusive Remedies. Client's right to recover damages, losses or expenses from Ology Bio, and Ology Bio's liability under this Agreement, is limited to the amounts and remedies set forth in the applicable sections of this Agreement. All claims by Client under this Agreement (except claims seeking indemnity) shall be brought no later than two (2) years after the occurrence of the event giving rise to such claim; otherwise, such claim shall be deemed waived.

13.2 Limitation of Liability. Except to the extent recoverable under Section 14.2, under no circumstances shall Ology Bio be liable for incidental, special, consequential, punitive, exemplary, or other indirect damages, including but not limited to, lost profits, or except as specifically set forth in this Agreement, loss, damage or destruction of the Client supplied Materials, the cost of cover or recall costs, whether such claims are founded in tort or contract, and even if Client asserts or establishes a failure of the essential purpose of any limited remedy provided in this Agreement. To the extent permitted under Applicable Law, under no circumstances shall Ology Bio's aggregate liability under this Agreement, including but not limited to third party claims, exceed the aggregate amount paid to Ology Bio by Client under this Agreement in the first three calendar years of the Agreement (the "**Monetary Cap**").

13.3 Risk of Loss. All Ology Bio supplied equipment and Ology Bio supplied Materials used by Ology Bio in the Production of Product (collectively, the "**Ology Bio Property**") shall at all times remain the property of Ology Bio and Ology Bio assumes risk of loss for the Ology Bio Property until delivery of Product to a common carrier as specified under Section 6.1. Client assumes all risk of loss for Client supplied Materials, equipment owned by Client and all Product (collectively, the "**Client Property**"), unless such loss is caused solely by Ology Bio's gross negligence or willful misconduct, in which case, Ology Bio shall reimburse Client for the loss; provided however, that such reimbursement for any Client supplied Materials will not exceed the Production Price of the Batch of Product that would have been Produced from such Client supplied Materials; or, for Product, will not exceed the Production Price paid to Ology Bio for the Batch of Product that was lost or damaged. Ology Bio will have no liability for, and Client releases all claims against Ology Bio arising from, any damage or loss to Client Property stored in a third party facility.

13.4 Waiver of Claims. In connection with providing Process Services, Ology Bio represents only that it will use reasonable care in providing such information solely as it relates to Process Services studies, synthesis, formulation, primary packaging and manufacturing process analysis. Ology Bio makes no representation or warranty, relating to the stability, efficacy, safety, or toxicity of Product formulated, packaged or manufactured in accordance with the Process Services provided by Ology Bio.

Article 14, INDEMNIFICATION

14.1 Client Indemnification. Client shall indemnify, defend and hold harmless Ology Bio and its Affiliates and any of their respective directors, officers, employees, subcontractors and agents (collectively, the "**Ology Bio Indemnified Parties**") from and against any and all liabilities, obligations, penalties, claims, judgments, demands, actions, disbursements of any kind and nature, suits, losses, damages, costs and expenses (including, without limitation, reasonable attorney's fees) ("**Losses**") to, and claims, demands, actions, suits, including claims of property damage, death or personal injury for which the Indemnified Parties otherwise would be strictly liable (collectively, "**Claims**") by a third party, in connection with pending or threatened litigation or other proceedings, which arise out of or relate to any one of the following:

- (a) transport, storage, promotion, labeling, marketing, distribution, use or sale of Product;
- (b) Ology Bio's use of the BDS;
- (c) Client's gross negligence or willful misconduct;
- (d) Materials provided by Client;
- (e) Client's material breach of any covenant, representation or warranty contained in this Agreement; or
- (f) or distribution of BDS or Product by Ology Bio or Client or if such violates the patent, trademark, copyright or other proprietary rights of any third party,

except to the extent the foregoing (a), (b), (d) or (f) is caused solely by the gross negligence or willful misconduct of Ology Bio.

14.2 Ology Bio Indemnification. Ology Bio shall indemnify, defend, and hold harmless Client and its Affiliates and any of their respective directors, officers, employees, subcontractors, and agents (collectively, the "**Client Indemnified Parties**") from and against any and all Losses to, and Claims by, a third party, in connection with pending or threatened litigation or other proceedings, which arise out of or relate to any one of the following: (a) solely to the extent attributable to Ology Bio's gross negligence or willful misconduct; or (b) Ology Bio's material breach of any covenant, representation or warranty contained in this Agreement, except to the extent the foregoing (a) and (b) is caused solely by the gross negligence or willful misconduct of Ology Bio.

14.3 Indemnitee Obligations. Any Party seeking indemnification hereunder (a) shall give prompt written notice to the other Party (the "**Indemnifying Party**") of any Claim for which indemnification is sought, (b) shall permit the Indemnifying Party to assume full responsibility to investigate, prepare for and defend against the Claim, (c) shall reasonably assist the Indemnifying Party, at the Indemnifying Party's reasonable expense, in the investigation of and preparation for the defense of such Claim, and (d) shall not compromise or settle such Claim without the Indemnifying Party's prior written consent.

Article 15, INSURANCE

15.1 Client Insurance. Client shall procure and maintain, during the Term of this Agreement and for a period one (1) year beyond the expiration date of Product, Commercial General Liability Insurance, including without limitation, Product Liability and Contractual Liability coverage (the “**Client Insurance**”). Client Insurance shall cover amounts not less than \$5,000,000 (five million dollars) combined single limit and shall be with an insurance carrier with an A.M. Best rating of A-VII or better. Any deductible and/or self-insurance retention shall be the sole responsibility of Client.

15.2 Ology Bio Insurance. Ology Bio shall procure and maintain, during the Term of this Agreement and for a period one (1) year beyond the expiration date of Product, Commercial General Liability Insurance, including without limitation, Product Liability and Contractual Liability coverage (the “**Ology Bio Insurance**”). Ology Bio Insurance shall cover amounts not less than \$10,000,000 (ten million dollars) combined single limit and shall be with an insurance carrier with an A.M. Best rating of A-VII or better. Any deductible and/or self-insurance retention shall be the sole responsibility of Ology Bio.

15.3 No Limitation. Neither Party’s liability will be limited to that which is recoverable by insurance.

Article 16, PRODUCT RECALLS

16.1 Recalls. In the event Client is required to recall any Product, or elects to institute a voluntary recall, Client will be responsible for coordinating such recall. Client will promptly notify Ology Bio of such recall and provide Ology Bio with a copy of all documents relating to such recall. Ology Bio will cooperate with Client in connection with any recall, at Client’s expense. Client will be responsible for all of the costs and expenses of such recall (including but not limited to costs associated with receiving and administering the recalled Product and notification of the recall to those persons whom Client deems appropriate).

Article 17, INTELLECTUAL PROPERTY

17.1 Existing Intellectual Property. Except as the Parties may otherwise expressly agree in writing, each Party shall continue to own its existing Intellectual Property and other intellectual property, without conferring any interests therein on the other Party. Neither Ology Bio nor any third party shall acquire any right, title, or interest in Client’s Intellectual Property by virtue of this Agreement or otherwise, except to the extent expressly provided herein. Neither party shall file a patent thereon unless mutually agreed by the Parties.

17.2 Client Improvements. The Parties agree that all rights, title and interest in and to any Client Improvements shall be owned by Client.

17.3 Ology Bio Improvements. The Parties agree that all rights, title and interest in and to any Ology Bio Improvements shall be owned by Ology Bio.

17.4 Joint Intellectual Property. Joint Intellectual Property shall be co-owned equally by the Parties. Each Party shall have a right of first refusal to any assignment of its interest into a Joint Patent by a Party to any Third Party.

17.5 Disclaimer. Except as otherwise expressly provided herein, nothing contained in this Agreement shall be construed or interpreted, either expressly, by implication, or otherwise, as: (i) a grant, transfer or other conveyance by either Party to the other of any right, title, license or other interest of any kind in any of its Inventions or other intellectual property, (ii) creating an obligation on the part of either Party to make any such grant, transfer or other conveyance, or (iii) requiring either Party to participate with the other Party in any cooperative development program or project of any kind or to continue with any such program or project.

17.6 Rights in Intellectual Property. The Party owning any Intellectual Property shall have the worldwide right to control the drafting, filing, prosecution and maintenance of patents covering the Inventions relating to such Intellectual Property, including decisions about the countries in which to file patent applications. Patent costs associated with the patent activities described in this Section shall be borne by the sole owner. Each Party will cooperate with the other Party in the filing and prosecution of patent applications. Such cooperation will include, but not be limited to, furnishing supporting data and affidavits for the prosecution of patent applications and completing and signing forms needed for the prosecution, assignment and maintenance of patent applications.

17.7 Confidentiality of Intellectual Property. Intellectual Property (including, without limitation, Client Improvements, Ology Bio's Proprietary Cell Technology, and Ology Bio Improvements) shall be deemed to be the Confidential Information of the Party owning such Intellectual Property. The protection of each Party's Confidential Information is described in Article 18. Any disclosure of information by one Party to the other under the provisions of this Article 17 shall be treated as the disclosing Party's Confidential Information under this Agreement. It shall be the responsibility of the Party preparing a patent application to obtain the written permission of the other Party to use or disclose the other Party's Confidential Information in the patent application before the application is filed and for other disclosures made during the prosecution of the patent application.

Article 18, CONFIDENTIAL INFORMATION, NONDISCLOSURE AND PUBLICITY

18.1 Confidentiality. It is contemplated that in the course of the performance of this Agreement each Party may, from time to time, disclose Confidential Information to the other. Each Party agrees to take all reasonable steps to prevent disclosure of Confidential Information to third parties. No provision of this Agreement shall be construed so as to preclude disclosure of Confidential Information as may be reasonably necessary to secure from any governmental agency necessary approvals or licenses or to obtain patents with respect to the Product.

18.2 Prior Confidentiality Agreement.

18.2.1 This Agreement, by reference, incorporates the applicable Confidentiality Agreement, as set forth in EXHIBIT B, signed by Client and Ology Bio, to govern any disclosure made under this Agreement, including but not limited to, the Project Addendum, the Project Plan and any discussions in connection with them (the "**Confidentiality Agreement**"), and is made a part hereof as though fully set forth herein and all terms and conditions set forth in the Confidentiality Agreement shall continue to govern any disclosure made under the Confidentiality Agreement and shall govern any disclosure made as of the Effective Date of this Agreement. "Confidential Information", as used in this Agreement, shall have the meaning defined in the Confidentiality Agreement.

18.2.2 All obligations of confidentiality and non-use imposed upon the Parties under this Agreement, including without limitation the period of confidentiality and non-use as set forth in the Confidentiality Agreement which is hereby amended by this Section 18.2.2, shall expire five (5) years after the expiration or earlier termination of this Agreement and/or the applicable Project Addendum.

18.3 Third Party Disclosure. Ology Bio will be permitted to disclose Product information to third party developmental and analytical services providers in connection with performance of its obligations hereunder provided such providers shall be subject to confidentiality agreements at least as stringent as those included in this Agreement.

18.4 Limitation of Disclosure. The Parties agree that, except as otherwise may be required by Applicable Law, including without limitation the rules and regulations promulgated by the United States Securities and Exchange Commission (the "SEC"), and except as may be authorized in the Confidentiality Agreement and unless otherwise agreed in this Agreement, no information concerning this Agreement and the transactions contemplated herein shall be made public by either Party without the prior written consent of the other.

18.5 Publicity and SEC Filings. The Parties agree that the public announcement of the execution of this Agreement shall only be by one or more press releases mutually agreed to by the Parties. The failure of a Party to return a draft of a press release with its proposed amendments or modifications to such press release to the other Party within five (5) business days of the Party's receipt of the press release shall be deemed as approval of such press release. Each Party agrees that it shall cooperate fully and in a timely manner with the other with respect to all disclosures to the SEC or any other governmental or regulatory agencies, including providing written notice to Ology Bio and sufficient time to review and request confidential treatment of Confidential Information of either Party included in any such disclosure. Ology Bio may communicate information to its investors to the extent made public by Client.

18.6 Reference List. A Party shall be entitled to put the other Party's name on a reference list upon request and/or notification.

Article 19, FORCE MAJEURE

19.1 Any delay in the performance of any of the duties or obligations of either Party hereto (except the payment of money) caused by an event outside the affected Party's reasonable control shall not be considered a breach of this Agreement, and unless provided to the contrary herein, the time required for performance shall be extended for a period equal to the period of such delay. Such events shall include without limitation, acts of God; acts of public enemies; insurrections; riots; terrorist actions; injunctions; embargoes; fires; explosions; floods; shortages of Materials or energy; delays in the delivery of Materials or energy; acts or orders of any government or agency thereof (including, without limitation, any delays due to action under Defense and Priorities Allocation System (DPAS)) or other unforeseeable causes beyond the reasonable control and without the fault or negligence of the Party so affected. The Party so affected shall give prompt notice to the other Party of such cause and a good faith estimate of the continuing effect of the force majeure condition and duration of the affected Party's nonperformance, and shall take whatever reasonable steps are appropriate to relieve the effect of such causes as rapidly as possible. If the period of nonperformance by Ology Bio because of Ology Bio force majeure conditions exceeds thirty (30) calendar days, Client may terminate this Agreement by written notice to Ology Bio. If the period of nonperformance by Client because of Client force majeure conditions exceeds thirty (30) calendar days, Ology Bio may terminate this Agreement by written notice to Client.

Article 20, DPAS DISCLOSURE

20.1 Ology Bio and the ADM Facility are subject to the Defense and Priorities Allocation System (DPAS), due to its ongoing agreement with the Department of Defense, Natick Contracting Division, US Army Contracting Command-APG for the development and manufacturing of medical counter measures in the ADM Facility located in Alachua, FL (the "ADM Contract"). All development and manufacturing activities under the ADM Contract are issued under a Task Order system.

Defense Priorities and Allocations System (DPAS) is a regulation administered by the Department of Commerce (DoC) that implements the priorities and allocations authority contained in Title 1 of the Defense Production Act (DPA) of 1950 with respect to industrial resources. The purpose of DPAS is to ensure the timely availability of industrial resources to meet national defense and emergency preparedness requirements. Certain national defense, energy, and homeland security programs are approved for priorities and allocations support. The DoC has delegated authority to the Department of Defense (DoD) to place priority ratings on its contracts in accordance with DPAS, and DoD issues approximately 300,000 rated orders annually. DoD uses two priority ratings: DX and DO. DX rated programs and their orders are of the highest national defense urgency and are approved by the Secretary of Defense (SECDEF) or Deputy Secretary of Defense (DEPSECDEF). DO rated orders are of lower priority than DX-rated orders but take precedence over unrated orders. DPAS cannot be used to prioritize food, energy, health, water, or civil transportation resources.

The ADM Contract carries a DPAS rating of DO-B9, however, Ology Bio does not currently have any such Task Orders in effect that would require prioritization. In the event that a Task Order is assigned, Ology Bio will evaluate its impact on schedule and availability to reasonably eliminate and/or minimize any delay; however, Client hereby acknowledges that the actions required to meet the requirements of the DPAS are a priority and shall not be deemed to cause or result in a breach hereunder.

Article 21, NOTICES

21.1 All notices hereunder shall be delivered by facsimile (confirmed by overnight delivery), or by overnight delivery with a reputable overnight delivery service, to the following address of the respective Parties:

If to Ology Bio: Ology Bioservices, Inc.
 13200 N.W. Nano Court
 Alachua, FL 32615
 Attn: Sabine Abramson
 Sr. Corporate Paralegal
 Fax No.: (833) 512-4936
 Phone No.: (386) 418-8425

If to Client: Blue Water Vaccines, Inc.
2041 Courtland Avenue
Cincinnati, Ohio 45212
Attn: Joseph Hernandez
Chief Executive Officer
Phone No.: (646) 303-0737

With copy to:
Blue Water Vaccines, Inc.
15 East Putnam Avenue, Suite 363
Greenwich, CT 06830
Attn: Joseph Hernandez
Chief Executive Officer

Notices shall be effective on the day following the date of transmission if sent by facsimile, and on the second business day following the date of delivery to the overnight delivery service if sent by overnight delivery. A Party may change its address listed above by notice to the other Party given in accordance with this Section.

Article 22, GOVERNING LAW; EXCLUSIVE JURISDICTION

22.1 In any action brought regarding the validity, construction and enforcement of this Agreement, it shall be governed in all respects by the laws of the State of Delaware, without regard to the principles of conflicts of laws. The Parties hereby agree that any dispute hereunder or relating hereto shall be determined exclusively by the state and federal courts located in the State of Delaware and any court to which an appeal therefrom may be taken.

22.2 Commercial Dispute Resolution. If a dispute arises between the Parties in connection with this Agreement, or a disagreement arises regarding the interpretation of any provision hereof (a “**Commercial Dispute**”), the Parties shall use the following procedure in good faith prior to either Party filing a lawsuit, commencing arbitration or pursuing other available judicial or nonjudicial remedies:

(i) A meeting of the Parties, which may be either in-person or via teleconference, shall be held within fourteen (14) days after either Party gives written notice of a Commercial Dispute to the other Party. The meeting shall be attended by authorized individual(s) for each Party, who has decision-making authority regarding the Commercial Dispute. The authorized individual(s), shall negotiate in good faith, be discreet, and use reasonable efforts to resolve the Commercial Dispute.

(ii) If the Parties do not succeed in resolving the Commercial Dispute within thirty (30) days after notice of the Commercial Dispute from the other Party, either Party may file a lawsuit, commence arbitration or pursue other available judicial or nonjudicial remedies.

22.3 Technical Dispute Resolution. If a dispute arises between the Parties that is exclusively related to technical aspects of the Services (a “**Technical Dispute**”), the Parties will make all reasonable efforts to resolve the dispute by good faith negotiations with the authorized representatives of the technical or quality teams for each Party (the “**Technical Representatives**”). The Parties shall use the following procedure in good faith prior to either Party filing a lawsuit, commencing arbitration or pursuing other available judicial or nonjudicial remedies:

(i) A meeting of the Parties, which may be either in-person or via teleconference, shall be held within fourteen (14) days after either Party gives written notice of a Technical Dispute to the other Party. The meeting shall be attended by the Technical Representatives for each Party, who shall negotiate in good faith, be discreet, and use reasonable efforts to resolve the Dispute.

(ii) If despite this meeting, the Parties are unable to resolve the Technical Dispute within thirty (30) of the written request, the Technical Dispute will, at the request of either Party, be referred for determination to a mutually acceptable independent expert with experience and expertise in the subject matter of the dispute. If the Parties cannot agree to a mutually acceptable third-party expert (person or laboratory) then an expert may be appointed by an experienced arbitrator on the roster of the American Arbitration Association. The determination of the expert will, except for fraud or manifest error, be final and binding upon the Parties. The costs and expenses of the independent expert will be shared equally by the Parties.

(iii) The resolution of a Product Conformity disputes are controlled by Section 7.

Article 23, ASSIGNMENT

23.1 Neither Party shall assign this Agreement or any part hereof or any interest herein to any third party (or use any subcontractor) without the prior written approval of the other Party. The Parties shall be entitled to assign this Agreement to one of its Affiliates without the other Party’s prior approval provided such Affiliate remains an Affiliate of such Party. No consent shall be required in the case of a transfer to a wholly-owned subsidiary or transaction involving the merger, consolidation, corporate reorganization, or sale of all or substantially all of the assets of the Party seeking such assignment or transfer and such transaction relates to the business covered by this Agreement and the resulting entity assumes all of the obligations under this Agreement. No assignment shall be valid unless the permitted assignee(s) assumes all obligations of its assignor under this Agreement. No assignment shall relieve any Party of responsibility for the performance of its obligations hereunder.

Article 24, TAXES

24.1 Client shall pay all national, state, municipal or other sales, use, excise, import, property, value added, or other similar taxes, assessments, or tariffs assessed upon or levied against the sale of Product to Client pursuant to this Agreement, or the sale or distribution of Product by Client (or at Client’s sole expense, defend against the imposition of such taxes and expenses). Ology Bio shall notify Client of any such taxes that any governmental authority is seeking to collect from Ology Bio, and Client may assume the defense thereof in Ology Bio’s name, if necessary, and Ology Bio agrees to fully cooperate in such defense to the extent of the capacity of Ology Bio, at Client’s expense. Ology Bio shall pay all national, state, municipal, or other taxes on the income resulting from the sale by Ology Bio of the services provided to Client under this Agreement, including but not limited to, gross income, adjusted gross income, supplemental net income, gross receipts, excess profit taxes, or other similar taxes.

Article 25, SUCCESSORS AND ASSIGNS

25.1 This Agreement shall be binding upon and shall inure to the benefit of the Parties hereto, their successors and permitted assigns.

Article 26, ENTIRE AGREEMENT

26.1 This Agreement, including all agreements specifically incorporated by reference, constitutes the entire agreement between the Parties concerning the subject matter hereof and supersedes all written or oral prior agreements or understandings with respect thereto.

Article 27, SEVERABILITY

27.1 If any term or provision of this Agreement shall for any reason be held invalid, illegal, or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect any other term or provision hereof, and this Agreement shall be interpreted and construed as if such term or provision, to the extent the same shall have been held to be invalid, illegal or unenforceable, had never been contained herein.

Article 28, WAIVER AND MODIFICATION OF AGREEMENT

28.1 No waiver or modification of any of the terms of this Agreement shall be valid unless in writing and signed by authorized representatives of both Parties hereto. Failure by either Party to enforce any rights under this Agreement shall not be construed as a waiver of such rights nor shall a waiver by either Party in one or more instances be construed as constituting a continuing waiver or as a waiver in other instances.

Article 29, INDEPENDENT CONTRACTOR

29.1 Both Parties shall act as an independent contractor for the other Party in providing the services required hereunder and shall not be considered an agent of, or joint venturer with, the other Party.

Article 30, COUNTERPARTS

30.1 For convenience, this Agreement may be executed in counterparts with the same force and effect as if each of the signatories had executed the same Agreement.

ARTICLE 31, INTERPRETATION AND CONSTRUCTION

31.1 The Parties confirm that this Agreement shall govern the relationship between the Parties.

31.2 In the event that the terms of any Project Addendum are inconsistent with the terms of this Agreement, this Agreement shall control, unless otherwise explicitly agreed to in writing by the Parties. No Project Addendum shall be deemed to amend this Agreement.

31.3 In the event of a conflict between this Agreement and the Quality Agreement, the Quality Agreement will prevail for matters of quality and this Agreement will prevail for all business, legal, and financial issues.

IN WITNESS WHEREOF, the parties have caused this Agreement to be signed by their duly authorized representative as of the Effective Date.

OLOGY BIOSERVICES, INC.

By: /s/ Timothy Cooke
Name: Timothy Cooke
Title: SVP Commercial Business

BLUE WATER VACCINES, INC.

By: /s/ Joseph Hernandez
Name: Joseph Hernandez
Title: Chief Executive Officer



PROJECT ADDENDUM 1 TO MASTER SERVICES AGREEMENT

This Project Addendum is effectively dated as of October 9, 2019 (the “Effective Date”) by and between Blue Water Vaccines, Inc. a Delaware corporation located at 15 East Putnam Avenue, Suite 363, Greenwich, CT 06830 (“Blue Water”) and Ology Bioservices, Inc., a Delaware corporation having a principal place of business at 13200 N.W. Nano Court, Alachua, Florida 32615 (“Ology Bio”). Blue Water and Ology Bio are sometimes referred to herein individually as a “Party” and collectively as the “Parties.”

WHEREAS, Blue Water and Ology Bio entered into a Master Services Agreement effectively dated as of July 19, 2019, (the “MSA”) whereby Ology Bio agreed to provide from time to time services and deliverables associated therewith (“Services”) to Blue Water pursuant to the terms and conditions set forth in the MSA and any Project Addendum;

WHEREAS, Blue Water and Ology Bio desire to enter into this Project Addendum for Services as set forth herein, subject to and in accordance with the MSA.

WHEREAS, Ology Bio submitted a Proposal dated May 22, 2019 to Blue Water.

NOW, THEREFORE, in consideration of the foregoing and the mutual promises, covenants and agreements set forth below, and for other good and valuable consideration, the receipt and sufficiency of which the parties hereby acknowledge, the parties agree as follows:

1.0 SCOPE OF WORK

Ology Bio will perform Process Development and CGMP Manufacturing of Recombinant Influenza Conserved Regions for Vaccine Production for Blue Water Vaccines, Inc. (Blue Water). Blue Water is currently developing a novel influenza vaccine based on conserved regions of the influenza virus. Each of these conserved regions encodes a unique 15-20 amino acid peptide sequence. Blue Water has demonstrated the each of these peptides is highly immunogenic and conserved over many different strains of influenza. Currently there are six (6) different conserved regions that are being developed. These peptides are currently being combined into two separate expression vectors in *E.coli*. Each of the two different combinations represent a single drug product. One will be used as the prime vaccine dose and the second will be used as the boost dose. The present scope of work includes the timely process development and manufacture of the two novel influenza vaccine drug substance candidates and production of the two different drug product candidates suitable for pre-clinical animal studies and Phase 1 clinical studies.

This project consists of eight Tasks required to manufacture and release a CGMP lot of Drug Substance (DS) and Drug Product (DP) suitable for Clinical Development and conduct preclinical IND-enabling studies and prepare the IND. Specific details of each task are provided in Section 2.0.

- Task 1:** Technology Transfer and Process Establishment
- Task 2:** Analytical Assay Development
- Task 3:** CGMP Master and Working Cell Banking
- Task 4:** Process Development and Scale-up
- Task 5:** Engineering Run and Stability Testing
- Task 6:** CGMP Run and Stability Testing
- Task 7:** Engineering Drug Product and Stability Testing
- Task 8:** CGMP Drug Product and Stability Testing
- Task 9:** Regulatory Support for Preclinical IND-Enabling Studies and IND Preparation

2.0 TECHNICAL APPROACH AND PLAN

Task 1: Technology Transfer and Process Establishment

Table 1. Task 1 Technical Assumptions

Technical Assumption(s)
Product-specific information (e.g., Bill of Materials, previous run data, intermediate stability data, any regulatory documentation, test methods) will be transferred within 5 business days of contract signing.
The kick-off meeting will be scheduled within 10 business days of contract signing.
Two Process Establishment runs will be performed at this stage using the established methodology provided by Blue Water.
The upstream and downstream processing is similar between the different peptide constructs
Blue Water will provide Research Cell Bank vials, reagents and standards and associated Certificates of Analysis, as required, to Ology Bio within 5 days of contract signing

Information Transfer and Gap Assessment:

The Information Transfer stage is critical for the success and timeliness of the project. Ology Bio requests that all pertinent documents from Blue Water will be supplied within 5 days of contract signing to allow enough time for critical review by the Ology Bio team. A kick-off meeting will be scheduled with review of the plans and timelines. After the project gap analysis is complete, a final schedule and Gantt chart will be completed.

Receiving Blue Water Documentation:

To initiate the Technology Transfer, we will conduct a thorough review of all process and analytical documents provided by Blue Water. At this time, it will be agreed upon by Blue Water and Ology Bio that the manufacturing processes are similar enough between the different peptides that process development for only one will be sufficient and can be transferred to the other drug substance candidate. In collaboration with Blue Water, we will create a Development Plan for each of the drug substances and governance process to meet the objectives of the project. Blue Water will provide Ology Bio with all applicable standard operating procedures (SOPs), process procedures, process transfer protocols, analytical plans, specifications and other knowledge to transfer analytical methods and the manufacturing process. Technology Transfer will include the following preparation activities:

- Preparation of a Development Plan
- Preparation of documentation
- Equipment Identification
- Flow diagrams as appropriate
- Process step descriptions
- Risk Analysis and Mitigation Strategy

Transfer of Product-Specific Materials from Blue Water and Procurement of Materials and Components:

Blue Water will provide Research Cell Bank (RCB) vials, reagents and standards, and associated Certificates of Analysis (COAs), as required, to Ology Bio within 5 days of contract signing in order to stay within the aggressive timeline for this program.

A full list of raw materials will be developed and sent to Blue Water for approval. All consumables, expendables and raw materials will be purchased using QA-approved vendors, properly inventoried and stored in the proper conditions. We may elect to purchase pre-prepared media and certain buffers from agreed-upon suppliers to avoid any variability in these critical reagents in the process. We will identify and qualify suppliers of production materials and any required excipients. The nature of this project will require that additional materials identified in the Process Development Task to be communicated to Blue Water at a later date.

Development Plan and Reports:

Weekly or biweekly presentations will be provided to Blue Water that summarizes the performance of the process per plan. At the end of Task 1, a draft Development Plan will be written and reviewed/approved by both Ology Bio and Blue Water. The Development Reports will be written after execution of Establishment Runs to contain details on each unit operation; trending of the data compared with any available historical data (i.e., provided in Blue Water documents); analytical testing results; process deviations and impact assessment; our proposed process changes, including assessment of impact and justifications for changes; and updated risk and gap assessment.

Process Establishment:

Ology Bio will perform two Process Establishment Runs (one for each of the two candidates) to demonstrate the process for the Blue Water influenza vaccine candidates at 3 L fermenter scale and prepare a process transfer final report for approval by Blue Water. Ology Bio will use the existing RCBs from Blue Water to perform these runs. Upstream and Downstream Process Flow Diagrams for the production of the Blue Water influenza vaccine candidate are shown in **Figure 1** and **Figure 2**.

Limited testing will be performed on these Establishment runs. These will include SDS- PAGE, protein concentration and HPLC analysis for purity. We will also present a preliminary Bill of Materials (BOM) at the end of this task.

A list of deliverables for Task 1 is shown in **Table 2**.

Figure 1. Upstream Fermentation

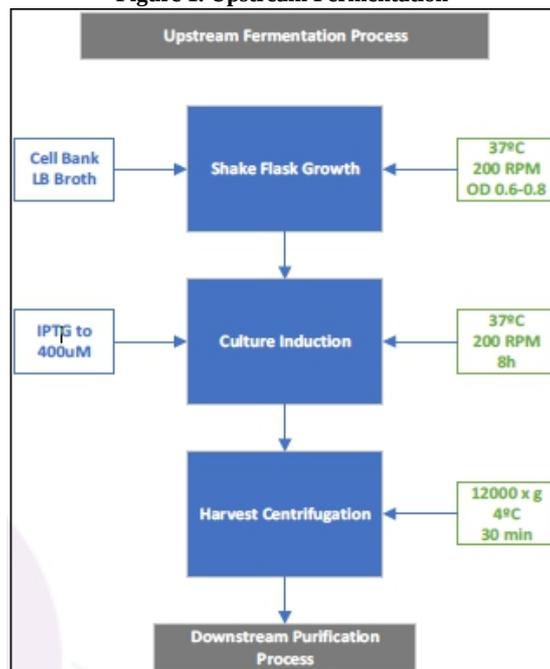


Figure 2. Downstream Process Flow Diagram

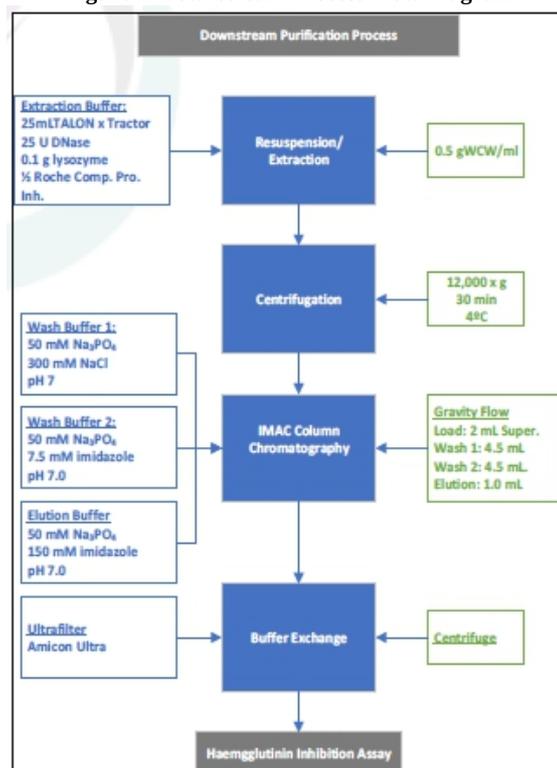


Table 2. Task 1 Deliverables

Task	Deliverable
Task 1: Technology Transfer and Process Establishment	Final Schedule Agreement with Blue Water and Ology Bio at completion of this stage
	Project Management Plan including Project Charter
	Meeting agenda and minutes
	Process development plan
	Process establishment plan and report
	Preliminary Bill of Materials

Task 2: Analytical Assay Development

Table 3. Task 2 Technical Assumptions

Technical Assumption(s)
Blue Water will provide analytical Reference Standards, product-specific reagents (antibodies) and initial samples of DS and DP for use in method transfer and validation
All required analytical methods are summarized in Table 4
Assay qualification will be phase appropriate
Forced degradation studies will not be required on DS

A complete list of analytical assays will be provided by Blue Water or agreed upon with Ology Bio. Specifications for each of the assays will also be provided by Blue Water or agreed upon with Ology Bio. We propose to perform Technology Transfer feasibility assessments on the QC assays outlined in Error! Reference source not found. for in-process (IP) testing and DS testing. Each of these assays will need to be established for each of the two different drug substance candidates. Stability and DP testing are described in Tasks 6 and 7, respectively. Following the Technology Transfer feasibility assessment, QC scientists will revise method SOPs (as required) and verify methods for testing. Upon completion of the verification studies, a comprehensive report, reviewed and approved by QA, will be provided documenting the results of the verification, the suitability of the intended method, a description of test samples, a description of experiments and a summary of data for each parameter tested, as well as relevant raw data obtained from these studies. These assays will also be qualified as suitable for CGMP release and use in Phase 1 clinical trials. Testing will not be outsourced without the prior written consent of Blue Water.

Table 4. In-Process and Drug Substance Release Testing

Assay	Method	Location	Specification	Process Step
Physiochemical Properties				
Appearance	Visual Observation	Ology Bio	Clear, colorless liquid; no particles	DS
pH	USP<791>	Ology Bio	TBD	IP, DS
Conductivity	TBD	Ology Bio	TBD	IP
Viability	Cell count	Ology Bio	TBD	IP
Safety				
Endotoxin	USP<85>	Ology Bio	< 10 EU/dose; dose = 100 µg	IP, DS
Bioburden	Membrane Filtration	Ology Bio	< 10 CFU/mL	IP, DS
General Safety	21 CFR 610.11	Ology Bio	Pass	DS
Content				
Protein Concentration	BCA	Ology Bio	Report	IP, DS

Assay	Method	Location	Specification	Process Step
Identity				
Presence of Blue Water Vaccine Candidate ¹	Western	Ology Bio	Identity Confirmed	IP, DS
Purity				
Purity	SDS-PAGE	Ology Bio	TBD	IP, DS
Host Cell DNA	<i>E. coli</i> qPCR assay	Ology Bio	TBD	DS
Host Cell Protein	Kit	Ology Bio	TBD	DS
Potency				
<i>In vitro</i> immunopotency	ELISA	Blue Water	TBD	DS

¹Assay will be Tech Transferred to Ology Bio

A list of deliverables for Task 2 is shown in **Table 5**.

Table 5. Task 2 Deliverables

Task	Deliverable
Task 2: Analytical Assay Development	Analytical assay Qualification Plan for each analytical method for each of the two different drug substance candidates
	QA-reviewed and approved Qualification Report for each analytical method
	In-process and release assay specifications

Task 3: CGMP Master and Working Cell Banking

Table 6. Task 3 Technical Assumptions

Deliverable
A minimum of 300 CGMP MCB vials will be prepared for each of the two different drug substance candidates in support of this project
A minimum of 300 CGMP WCB vials will be prepared for each of the two different drug substance candidates in support of this project
RCB required for MCB production will be generated at Ology Bio in Task 4

In compliance with CGMP Regulations, Ology Bio will produce a minimum of 300 vials of a Master Cell Bank (MCB) for each of the two different drug substance candidates per QA-approved batch production records using the RCBs generated by Ology Bio as part of Task 4. The new Blue Horizon vaccine candidates will not contain a His-tag. These RCBs will be utilized for the production of the CGMP MCBs. The new MCBs will undergo characterization and release testing based on an analytical control strategy outlined in Table 7. Ology Bio proposes to generate CGMP Working Cell Banks (WCBs) from the MCBs of each of the two different drug substance candidates and characterize them.

Table 7. Cell Bank Release Assays

Cell Bank Release Assay
Strain ID/Purity-Differential Media
Product ID-Dot or Western or SDS-PAGE
Viability
Growth Stability
Plasmid Sequencing
Plasmid Size
Genetic Stability-Copy Number
Genetic Stability-Plasmid Restriction Analysis
Plasmid Retention/Antibiotic Resistance
Bacteriophage

An annual stability program will also be initiated and will be continued for up to three years for both MCB and WCB. For budgeting purposes, testing will only be conducted for 12 months, but cells will remain on stability for future testing. The stability testing is provided in Table 8.

Table 8. Cell Bank Stability Assays

Cell Bank Stability Assays
Growth Stability
Viability
Genetic Stability-Plasmid Restriction Analysis
Plasmid Retention/Antibiotic Resistance

Table 9. Task 3 Deliverables

Task	Deliverable
Task 3: CGMP Master and Working Cell Banking	Summary Report on cell banking and release for both MCB and WCB for each of the two drug substance candidates including COAs and copies of Master Batch Records
	Cell bank stability plan for each of the two candidate MCB and WCB for review and approval by Blue Water
	A minimum of 300 CGMP MCB vials for each of the two drug substance candidates
	A minimum of 300 CGMP WCB vials for each of the two drug substance candidates

Task 4: Process Scale-up and Optimization

Table 10. Task 4 Technical Assumptions

Technical Assumption(s)
The Process Development Plan outlining the experimental plan will be approved by Blue Water
Successful Process Establishment Runs were completed in Task 1
Process Development will include development of non-His-tagged influenza vaccine candidates
Process Development will include generation of new RCBs for each of the two drug substance candidates
Process Development will be performed on both drug substance candidates
Six process development runs (three for each candidate) at the 3 L scale will be performed
Two scale-up runs at the 120 L scale will be performed

The new plasmids provided by Blue Water will be evaluated using two different E. coli expression systems: one based on IPTG induction, the other based on phosphate depletion (PhoA). The expression system that yields the highest soluble titer will be selected for further development. We will initially generate RCBs. We will identify three individual colonies from each of the two different drug substance candidates, and each of the colonies will be analyzed for protein production at the 1-3 mL scale. Two colonies will be scaled up and used to generate 50 vials of RCB for each candidate. These RCBs will then be utilized for production of the CGMP MCBs and WCBs as described in Task 3. Each RCB will be characterized as per Table 11.

Table 11. RCB Release Assays

Release Assays
Viability
Growth Stability
Plasmid Size
Genetic Stability-Plasmid Restriction Analysis

These RCBs will be used for the initial process development studies. The process development will include both candidates and on both the upstream and downstream processing of the vaccine candidates. Small-scale upstream production runs (1 L scale) will be used to generate materials for the downstream processing. Ology Bio proposes to use their rapid chromatography screening protocols to identify and optimize the chromatographic procedures required for the purification of the Blue Water vaccine candidate. Ology Bio proposes to scale-up the manufacturing process to the 120 L scale. This will include six 3 L production runs (three for each candidate) to identify the optimum upstream parameters for maximum production of the vaccine candidate. In parallel, the downstream processing will be optimized as described above and then scaled to the 3 L scale. Ology Bio then proposes to perform two scale-up runs at the 120 L scale using the 150 L stainless steel fermenter, the proposed manufacturing production scale. These runs will be analyzed using the in-process and release tests as described in Task 2. Success criteria for these runs will be agreed upon by Blue Water and Ology Bio prior to initiation of these runs. The sampling plan for these runs will also be agreed upon prior to initiation of the runs. Draft batch records and a final sampling plan will be prepared for use in the Engineering runs (Task 5).

Equipment required to support all the required tasks for the program are in-place and have been previously qualified at the ADM Facility, as listed in **Table 12**. Should additional equipment be required, qualification will be performed per standard operating procedures prior to CGMP manufacturing.

Table 12. Equipment list for DS Manufacturing at the ADM Facility

Item	ADM Equipment Identification
Analytical Scale	Fisher XS2002S
Autoclave	Fedegari Autoclave Model NA2420AW
Centrifuge	Sorvall LYNX 6000
Freezer	Revco High Performance -20° C Freezer
Mixing Vessels	GE XDM-Quad Mixing Systems (50-500 L)
Depth Filtration Systems	Millipore POD, 3M and Sartorius Holders available
Chromatography System	GE Akta Ready
TFF System	Sartorius Sartoflow Alpha Plus and Flex Act
Fermenter	Eppendorf BioFlo Pro 120 L and 60 L
Incubator Shaker	Eppendorf I42R
Mini Fermenter System	Eppendorf
Microscope	Fisher LMI-6001B
Pump(s)	W/M Peristaltic Pump, 520SN/R2;

Item	ADM Equipment Identification
	W/M Peristaltic Pump, 520 Um AN/R2; W/M Peristaltic Pump, 323S/RL2
Refrigerator	REL4504A Revco High Performance Refrigerator
Scale	ABSCO SIWSDCS-1-35H-E7
Water Bath(s)	Fisher Scientific Model 265/2866
Vapor Phase Liquid Nitrogen (LN2) Freezer	Forma 7402 CryoPlus
Stir Plate	Corning PC-240
pH meter	Orion Versa Star Meter, pH/Conductivity
Balance	ABSCO SIWSDCS-1-35H-E7
Conductivity Meter	Orion Versa Star Meter, pH/Conductivity
Class B Laminar Flow	NuAire BSC NU-430-600
Pipette Aid	Numerous
Micropipettor (200µL)	Numerous
Micropipettor (1000µL)	Numerous
Freezer ≤ -70° C	Thermo UFX600
Autoclave for Decontamination	Fedegari NA2421AW
Multipipette	Numerous
Balance	ABSCO SIWSDCS-1-35H-E7

Deliverables for this task are provided in **Table 13**.

Table 13. Task 4 Deliverables

Task	Deliverable
Task 4: Process Development and Scale-Up	Process Development Report for Blue Water review and approval
	Material from the Process Development Runs
	Process scale-up final report for review and approval by Blue Water
	Materials from the Scale-up runs
	Process parameters for the Engineering run
	Technology Transfer Protocol
	Draft batch records and sampling plan for use in the Engineering run
Confirmation Run report and materials	

Task 5: Engineering Run and Stability Testing

Table 14. Task 5 Technical Assumptions

Technical Assumption(s)
Ology Bio proposes to perform one Engineering run for each of the two drug substance candidates (total of 2 runs) at the 120 L scale
In-process and release testing will be performed as described in Task 3
Materials will be placed on 12-month stability
DS Reference Standard materials will be generated (1,000 vials) for each of the six drug substance candidates

We will perform one Engineering run for each of the two drug substance candidates at full scale of 120 L (total of two engineering runs). The in-process and release testing plan for this run will be agreed upon by Blue Water and Ology Bio. The Engineering run will be executed at the 120 L production scale by manufacturing staff in the CGMP manufacturing core at the Facility. The Engineering run will be performed using draft Master Batch Records and QA-released raw materials and components. The batch records will be redlined during the Engineering run, and any changes will be incorporated into the Master Batch Records prior to approval for CGMP manufacturing. The in-process and release assays are described in Task 3, **Table 4**.



The material generated from this lot will be indicative of the CGMP-manufactured material. The materials from this lot will be made available to Blue Water for additional studies. In addition, materials from this lot will be used to generate Reference Standard materials. A COA and Material Safety Data Sheet (MSDS) will be prepared at this stage. A completed BOM will be submitted as part of this Stage. The non-CGMP DS material will be placed on stability studies.

Stability Testing:

Stability testing of non-CGMP Engineering DS will be conducted in accordance with current U.S. FDA Code of Federal Regulations (CFR) and International Conference on Harmonization (ICH) guidelines, including:

- 21 CFR Parts 210 and 211 (CGMPs)
- 21 CFR Part 312 (IND Application)
- ICH Q1A (R2) Guideline: “Stability Testing of New Drug Substances and Products,” February 2003
- ICH Q1C Guideline: “Stability Testing of New Dosage Forms,” November 1996
- ICH Q5C Guideline: “Stability Testing of Biotechnological/Biological Products,” November 1995

The stability evaluation will support the following:

- Use of the investigational product throughout nonclinical studies and clinical trials
- Mitigation of shipping and storage temperature excursion impact on the investigational product
- Stability of the product during handling (clinical sites, emergency-use scenarios)
- Selection of lot release and stability-indicating analytical test methods
- Expiration or retest dates for DS
- Product conformity to stability specifications throughout the clinical trial

The proposed stability study for non-CGMP (as well as CGMP) DS lots is provided in **Table 15**. Stability testing will be conducted per approved protocols and reported annually.

Table 15. Drug Substance Stability

Test	Location	Acceptance Criteria	0m	1m	3m	6m	9m	12m
pH	Ology Bio	TBD	X	X	X	X	X	X
BCA	Ology Bio	TBD	X	X	X	X	X	X
SDS-PAGE/Western blot/ densitometry to monitor protein degradation	Ology Bio	TBD	X	X	X	X	X	X
Sterility	Ology Bio	No fungal or bacterial growth observed	X					X

Reference Standard:

Providing high-quality, documented and qualified Reference Standards is critical to every batch released, and characterization can be an arduous process. In accordance with our QS, Reference Standards are produced and qualified prior to use in lot release, characterization or stability testing. The objective of this program is to provide complete documentation of the establishment and trending of product Reference Standards. Another goal of the program is to assess the suitability and availability of Reference Standards and critical reagents to meet ICH and FDA guidelines appropriate for the product lifecycle stage for which the materials will be used. This program results in complete documentation of these Reference Standards by providing:

- Manufacture according to approved batch record or protocol
- Qualification according to approved qualification protocol
- Lot release testing according to approved technical specification
- Generation of a COA detailing the lot release testing results
- Controlled storage conditions and inventory
- Stability testing
- Continual data trending and evaluation of suitability in new/revised analytical methods and/or with changes to manufacturing process operations

For the Blue Water program, interim DS Reference Standards will be established in accordance with an approved protocol from the DS Engineering lot(s). To reiterate the approach to DS Reference Standard, a minimum of 1,000 vials of Engineering DS will be aliquoted and qualified as the DS Reference Standard. The filled Engineering DP generated in Task 7 will be labelled and qualified as the DP Reference Standard. A QA-reviewed and approved Qualification Report will be provided that documents suitability of the DS and DP Reference Standards in the intended methods. These interim DS and DP Reference Standards are to be used for Phase 1/2 product lot release and stability testing.

A list of deliverables for Task 5 is shown in **Table 16**.

Table 16. Task 5 Deliverables

Task	Deliverable
Task 5: Engineering Run and Stability Testing	DS Engineering Report
	DS Engineering Stability Protocol/Report
	Finalized BOM
	Finalized CGMP batch record templates
	Finalized CGMP DS Specifications
	Engineering non-CGMP DS COA and MSDS
	Updated Tech Transfer Protocol (if needed)
	Engineering non-CGMP DS Products (two total)

Task 6: OPTIONAL – CGMP Run and Stability Testing

Table 17. Task 6 Technical Assumptions

Technical Assumption(s)
Ology Bio will use the CGMP WCB
Ology Bio will perform one CGMP DS lot for each of the two drug substance candidates (total of two runs) at the 120 L scale

Blue Water and Ology Bio will agree on the analytical and IP testing plan for the routine production of the Blue Water vaccine candidate, which we will implement. The manufacturing processes that were developed and generated in Task 5 will be used for both drug substance candidates. Following completion of the scalability studies, a Technology Transfer Protocol will be generated. This report will describe the process development and define the critical process parameters and established ranges. The report will summarize lot testing and establish a sampling and testing plan to be used during CGMP manufacturing. A BOM listing all required raw materials and components will be included. From this BOM, specifications will be created for each material, as well as for IP intermediates where required. Batch records will be finalized and approved by QA for use in the CGMP manufacturing campaign. Any changes identified during the execution of the DP Engineering run (Task 7) will be incorporated into the final CGMP batch records prior to execution.

We will perform one CGMP manufacturing campaign in accordance with:

- 21 CFR Parts 210 and 211 (CGMP)
- 21 CFR Part 312 (IND Application)
- 21 CFR Parts 600 and 610 (Biological Products)
- 21 CFR Part 11 (Electronic Records and Signatures)

To lead to a successful campaign, we will use manufacturing readiness reviews to ensure that all activities are completed prior to the start of manufacturing. We perform Area Clearance and Product Changeover according to internal SOP-09-00054. Trained Operations personnel will clear manufacturing areas after manufacturing campaigns following work instruction WI-09-00004. Areas are cleaned according to SOP-09-00006, including chlorine dioxide decontamination when appropriate. Activities are documented on forms and manufacturing areas are released for use after QA review of these activities.

Our QA takes responsibility for assuring the quality and integrity of products and all data generated in compliance with the FDA GLPs and CGMPs. QA provides review of manufacturing and testing operations as well as approval of specifications, Master Batch Records, procedures, contract manufacturers, system and equipment changes, and intermediate and final product release. Deviations and investigations are integrated in a corrective action system. QA review and approval activities will be carried out in support of CGMP production campaigns on all the following activities:

■ **Documentation:**

- Raw Material Specifications
- Manufacturing Master and Executed Batch Records
- Equipment Operation and Maintenance SOPs
- Analytical Method SOPs
- Cleaning and Disinfection SOPs
- Harvest and Final Product Specification

■ **Manufacturing Cleanroom Preparation:**

- Cleaning of Laboratory during Manufacturing
- Area Clearance and Product Changeover
- QA Audits
- Cleaning Validation Risk Assessment/Protocol, if applicable

■ **Reference Standard:**

- Certification of Reference Standard

■ **Raw Materials:**

- Vendor Qualification
- Ordering of Raw Materials and Supplies
- Sampling of Raw Materials
- QC Testing of Raw Materials and Data Review
- QA Audit of Testing Data and Raw Material COAs
- QA Release of Raw Materials and Inventory Tracking

■ **CGMP Manufacturing:**

- Manufacturing of DS

■ **Product Testing:**

- QC Review of Testing Data
- QA Review of Testing Data and Preparation of COAs
- QA Release of DS Lot(s)

■ **Packaging and Shipping:**

- Packaging and Shipping of DS

■ **Project Audit and Final Report**

Documentation:

We have a validated electronic Quality Management System, MasterControl, to automate and integrate processes for meeting quality standards and complying with regulatory requirements. Master Control manages documents, training and risk; processes and audits; and facility and equipment calibration and maintenance program. Documentation in MasterControl includes, but is not limited to, raw material specifications, product specifications, MPR, equipment operation SOPs, and analytical method SOPs and protocols.

CGMP manufacturing will be performed in compliance with CGMP regulations, including approved Master Batch Records, CGMP cell banks, active environmental monitoring and QA release of all raw materials and consumables. Raw materials will be purchased using QA-approved material specifications from QA-approved suppliers in accordance with our Supplier Selection, Assessment and Approval procedures (SOP-20-00018). CGMP runs will be performed in the manufacturing core using the same equipment, facilities and personnel as utilized for the Engineering Run.

Production:

Trained manufacturing personnel will execute one CGMP production lot in accordance with QA-approved production records and SOPs. The CGMP runs will be performed in the manufacturing core using the same equipment, facilities and personnel as utilized for the Engineering run. The manufacturing core features ISO 8 in-operation (Grade C) processing rooms for all closed system operations. All open manipulations will occur within the ISO 5 area (Grade A BSC) located within an ISO 7 in-operation (Grade B) suite adjacent to the main processing room. Samples will be taken throughout the manufacturing process according to the batch record and product specifications. The process will be executed aseptically from start to finish, as demonstrated in the process simulation as part of Task 7. Bulk DS will be stored at $\leq -70^{\circ}\text{C}$ fill/finish at Ology Bio.

The CGMP material will be tested according to the DS specifications and tests previously defined. QC conducts in-process and lot release testing per SOPs and sampling plans. QA will provide the final review of batch records, environmental monitoring and analytical results. QA will also provide release of CGMP DS via a COA, ensuring that the DS product lot meets all technical specifications and is acceptable for use in GLP, nonclinical studies and Phase 1 clinical studies.

Ology Bio will perform limited stability testing as outlined in Task 5 and will provide samples as defined.

A list of deliverables for Task 6 is shown in Error! Reference source not found..

Table 18. Task 6 Deliverables

Task	Deliverable
Task 6: CGMP Run and Stability Testing	QA-Approved Batch Production Records for each of the two drug substance candidates
	QA-Approved COA(s) (per lot, total of two)
	Stability testing samples, data and reports
	Campaign summary reports
	DS materials for DP formulation

Task 7: Drug Product Engineering Run

Table 19. Task 7 Technical Assumptions

Technical Assumption(s)
Two different drug products are required for this project
Maximum DP lot size is 2,000 single-dose vials per lot
Intended DP storage temperature is < -20°C
DP will include an adjuvant provided by Blue Water with the final formulations
DP process qualification runs will be required

After completing the DS Engineering run, Ology Bio will execute an Engineering run of the DP filling process using the final container and closure method agreed upon with Blue Water (anticipated to be a 2 mL vial) for each of the two Drug Products. The final formulation will include an adjuvant provided by Blue Water. DP vials will be tested according to developed release criteria (**Table 20**) and placed on limited stability studies (**Table 21**).

Table 20. Drug Product Release Assay

Assay	Method	Location	Specification
Physiochemical Properties			
Appearance	Visual Observation	Ology Bio	Clear, colorless liquid; no particles
pH	USP<791>	Ology Bio	7.4 ±0.3
Osmolality	USP<785>	Ology Bio	250 – 350 mOsmol/kg
Safety			
Endotoxin	USP<85>	Ology Bio	< 10 EU/dose; dose = 100 µg
Sterility	21CFT610.2	Ology Bio	No growth ≥14 days
Bioburden	Membrane Filtration	Ology Bio	< 10 CFU/mL
General Safety	21CFR610.11	Ology Bio	Pass
Content			
Protein Concentration	BCA	Ology Bio	Report
Identity			
Presence pf Blue Water Vaccine Candidate	Western	Ology Bio	Identity Confirmed
Purity			
Purity	SDS-PAGE	Ology Bio	>95% monomer
Potency			
<i>In vitro</i> immunopotency	ELISA	Blue Water	TBD

Table 21. Drug Product Stability

Test	Location	Acceptance Criteria	0d	1m	3m	6m	9m	12m	18m	24m
Visual Inspection	Ology Bio	No alum – no particles observed	X	X	X	X	X	X	X	X
Visual Inspection	Ology Bio	With alum – white substance with no colored particles	X	X	X	X	X	X	X	X
pH	Ology Bio	6.5 – 7.5	X	X	X	X	X	X	X	X
BCA	Ology Bio	TBD	X	X	X	X	X	X	X	X
<i>In vitro</i> immunopotency	Blue Water	TBD	X	X	X	X	X	X	X	X
SDS/PAGE/Western blot/densitometry to monitor protein degradation	Ology Bio	TBD	X	X	X	X	X	X	X	X
Sterility	Ology Bio	No fungal or bacterial growth observed	X					X		X

A list of deliverables for Task 7 is shown in Error! Reference source not found..

Table 22. Task 7 Deliverables

Task	Deliverable
Task 7: DP Engineering Lots	DP Development Plan
	DP Development Report
	Non-CGMP Engineering Run DP vials suitable for use in preclinical studies
	DP Engineering Summary Report consisting of release testing results
	Media Fill Qualification Report
	Up to 2,000 vials of Engineering DP per lot (two lots)
	Stability study protocol
	Stability study report

Task 8: OPTIONAL – CGMP Drug Product

Table 23. Task 8 Technical Assumptions

Technical Assumption(s)
Two different drug products are required for this project
Maximum DP lot size is 2,000 single-dose vials per lot
Intended DP storage temperature is < -20°C
DP will include an adjuvant provided by Blue Water with the final formulations
DP process qualification runs will be required

In accordance with FDA Guidance for Industry, “Sterile Drug Products Produced by Aseptic Processing – Current Good Manufacturing Practice,” Sept 2004, aseptic formulation and fill validation (media fill validation) will be conducted using a maximum of 2,000 vials per lot in a mutually approved container/closure system (vial, stopper, seal). Three consecutive successful media fill Validation Runs will be performed using TBS to simulate the formulated DP according to an approved media fill validation batch record. In addition, appropriate interventions (extended processing times, simulation of spillage and clean-up of spillage, changing out of the fill needle) will be incorporated into the validation activities.

Phase 1 DP formulation and liquid product fill operations will be conducted at Ology Bio. Using QA-approved production documentation, the DS lot will be formulated to achieve the final concentration of the to-be-determined titer in the selected final formulation (determined by Blue Water). Formulated product will be filled into the mutually approved container/closures within an aseptic area. A maximum of 2,000 vials per DP lot will be targeted for filling. QC will conduct lot release testing as summarized in Error! Reference source not found. per batch records and sampling plans. QA will provide the final review and release, ensuring that the DP lots meet all technical specifications and are acceptable for use in GLP nonclinical studies and clinical studies. Stability testing of CGMP DP lots is described in Error! Reference source not found..

A list of deliverables for Task 7 is shown in **Table 24**.

Table 24. Task 8 Deliverables

Task	Deliverable
Task 7: DP CGMP Lots	Up to 2,000 vials of CGMP DP per lot (two lots)
	COAs for released CGMP DP
	QA-approved batch production records (per lot, two lots)
	QA-approved Campaign Summary Report
	Stability study protocol
	Stability study report

Task 9: Regulatory Support for Preclinical IND-Enabling Studies and IND Preparation

Table 25. Task 9 Technical Assumptions

Technical Assumption(s)
Regulatory support for two different drug substance candidates and two drug product candidates is required
Non-CGMP Engineering lot will be used for the toxicity study
Ology Bio assumes that clinical SMEs will be provided by the Sponsor to support protocol development and review
Electronic Publishing costs are not included in this proposal

Subtask 9.1: Pre-Clinical Tox Study

Ology Bio will support Blue Water in the development of a nonclinical safety plan to support IND filing. Based on Ology Bio Regulatory experience, CBER/FDA expects high-quality of material for the IND-enabling toxicity studies that is either CGMP material or comparable to CGMP material. To reduce risk, the schedule linked this study to the CGMP lot. Blue Water can consider risks as it reviews the nonclinical safety plan.

Ology Bio’s Nonclinical SME will work with the subcontractor, IITRI to develop a protocol for an IND-enabling study based on feedback received from the FDA during the Pre-IND meeting (Subtask 8.2). Ology Bio will oversee the performance and of a GLP-Compliant Repeat Dose Toxicity Study of the Influenza Vaccine Candidate in Rabbits. The objective of the study will be to determine the immunogenicity, target organ toxicity, and reversibility of the influenza vaccine in rabbits following a repeat dosing regimen to support a Phase 1 clinical study.

Subtask 9.2: Pre-IND Meeting Support

Ology Bio will support a Type B Pre-IND Meeting to ensure successful entry into first-in-man studies. Effective communication with the FDA during the pre-IND stage of product development fosters a strong working relationship and is important for clearance of the IND. Ology Bio Regulatory Affairs (RA) team will respond to information requests received prior to the meeting, support meeting participation and prepare meeting minutes.



Our RA team will be engaged in practice sessions to develop responses to potential FDA questions and address concerns to avoid delays in product development. Our RA team tracks risks associated with entry into clinical development and ensures that the meeting reduces risk by proper preparation.

The Pre-IND meeting will include briefing materials describing the Phase 1 Protocol Synopsis; nonclinical toxicity plan; CMC technical information including cell banking and detailed manufacturing process descriptions; release; and stability information. Specific questions will focus on acceptability of the information to be provided in the IND.

Subtask 9.3: Regulatory Technical Writing

To support Blue Water in developing their IND application, our RA experts will prepare CMC sections for Blue Water’s vaccine. Ology Bio will provide Tier 1, Tier 2 and Tier 3 regulatory support, which includes technical review of strategic documents (i.e., specifications, change controls, protocols, risk assessments and technical reports) and CMC technical writing. Ology Bio will author the DS CMC information (Quality Modules 3.2.S, 3.2.P and 3.2.A) in ICH Common Technical Document (CTD) format, delivered as Microsoft Word documents. CMC technical writing will be limited to manufacturing and testing activities managed by Ology Bio, and placeholders will be included for Blue Water-managed activities. In addition, Ology Bio will support development of Modules 4 and 5 with deliverables provided in Word. Electronic Publishing costs are not included in this proposal.

The Ology Bio RA team is responsible for managing, writing, completing or editing all technical writing assignments; obtaining drop-in documents from the SMEs; assembling all documents and forms into a submission package; and uploading the submission for review and approval. Our RA team works with SMEs as needed to complete editing and addressing reviewers’ comments. RA is responsible for working with QA staff to ensure that all information/data has been reviewed for accuracy prior to Client review of documents. For this effort, Ology Bio assumes that clinical SMEs will be provided by the Sponsor to support protocol development and review.

Our RA team uses eCTD Word templates that provide authors with the ability to create documents that adhere to a single standard for consistency to the FDA and to our clients. Scientifically sound and accurate CMC writing to support CTD Module 3 development is critical to the success of the CMC communications with Regulatory authorities. Cost and regulatory operations support for electronic publishing and filing of the IND is not included.

Table 26. Task 9 Deliverables

Task	Deliverables
Task 8: Regulatory Support for Preclinical IND-Enabling Studies and IND Preparation	Preclinical study plan development (PK and toxicity studies)
	Preclinical Protocol Drafts
	Module 3 for CGMP DS and DP
	IND support documentation (MS Word Deliverables)
	Clinical trial documentation to support Phase 1 clinical study (Investigator Brochure and Phase 1 Protocol)

3. PROJECT SCHEDULE

The project schedule is presented in **Table 27**. The proposed start date for this project is September __, 2019; this start date is subject to change based on the date this proposal is accepted and signed and availability of the facility.

Table 27. Project Schedule

Task	Description	Start	End
1	Technology Transfer and Process Establishment	Oct 2019	Jan 2020
2	Analytical Assay Development	Oct 2019	Feb 2020
3	CGMP Master and Working Cell Banking, Stability	Nov 2019	Feb 2021
4	Process Development and Scale-up	Jan 2020	Jun 2020
5	Engineering Run and Stability Testing	Jun 2020	Aug 2021
6	<i>OPTIONAL: CGMP Run and Stability Testing</i>	<i>Aug 2020</i>	<i>Oct 2021</i>
7	DP Engineering Lot	Jun 2020	Sep 2021
8	<i>OPTIONAL: CGMP DP Lot</i>	<i>Sep 2020</i>	<i>Oct 2021</i>
9	Regulatory Support for Preclinical IND-Enabling Studies and IND Preparation	Jul 2020	Jul 2021

4. PROJECT BUDGET

Table 28. Project Budget

Task	Description	Task Price ¹	Pass-Through Costs ²	Total with Estimated Pass-Through
1	Technology Transfer and Process Establishment	\$171,000	\$6,000	\$177,000
2	Analytical Assay Development	\$225,000	\$27,000	\$252,000
3	CGMP Master & Working Cell Banks	\$306,000	\$230,000	\$536,000
4	Process Development and Scale-Up	\$324,000	\$413,000	\$737,000
5	Engineering Runs and Stability Testing	\$444,000	\$347,000	\$791,000
6	<i>OPTIONAL: CGMP Runs and Stability Testing</i>	<i>\$594,000</i>	<i>\$489,000</i>	<i>\$1,083,000</i>
7	DP Engineering Lot and Stability Testing	\$357,000	\$79,000	\$436,000
8	<i>OPTIONAL: CGMP DP Lot and Stability Testing</i>	<i>\$393,000</i>	<i>\$84,000</i>	<i>\$477,000</i>
9.1	Pre-Clinical Tox Study ³ and Protocols	\$166,000	\$325,000	\$491,000
9.2	Pre-IND Meeting Support	\$253,000	\$0	\$253,000
9.3	Regulatory Technical Writing	\$333,000	\$0	\$333,000
TOTAL – with optional tasks		\$3,566,000	\$2,000,000	\$5,566,000
TOTAL – optional tasks (6 & 8)		\$987,000	\$573,000	\$1,560,000
TOTAL – without optional tasks		\$2,579,000	\$1,427,000	\$4,006,000

¹ Task prices are based on estimated time.

² Material costs are estimated for budgeting purposes and include a 15% material handling fee.

³ GLP compliant IND-enabling tox study performed by Ology Bio subcontractor

5. PAYMENT SCHEDULE

Table 29. Payment Schedule

Payment Table				
Milestone	Task	Description	Deliverables	Payment
MS1	1 – 4	Initiation of Tasks 1 – 4 (50%)		\$513,000
MS2	1	Technology Transfer and Process Establishment	<ul style="list-style-type: none"> Final Schedule Agreement Project Management Plan Project Charter Process Development Plan Process Establishment Plan and Report Preliminary Bill of Materials 	\$85,500
MS3	2	Analytical Assay Development	<ul style="list-style-type: none"> Analytical Assay Qualification Plan Approved Qualification Reports In-Process and Release Assay Specifications 	\$112,500
MS4	3	CGMP Master & Working Cell Banks	<ul style="list-style-type: none"> Draft MCB Master Batch Record Executed MCB Master Batch Record Draft WCB Master Batch Record Executed WCB Master Batch Record Approved Stability Study Plan for MCB Approved Stability Study Plan for WCB Minimum of 300 cGMP MCB Vials Minimum of 300 cGMP WCB Vials 	\$153,000
MS5	4	Process Development and Scale-Up	<ul style="list-style-type: none"> Approved Process Development Report Process Development Run Materials Approved Process Scale-Up Final Report Scale-Up Run Materials Engineering Run Process Parameters Technology Transfer Protocol Draft Batch Records Sampling Plans Confirmation Run Report Confirmation Run Materials 	\$162,000
MS6		Initiation of Task 5 (50%)		\$222,000
MS7	5	5a Engineering Run	<ul style="list-style-type: none"> DS Engineering Report DS Engineering Stability Protocol Finalized BOM Finalized CGMP Batch Record Templates Finalized CGMP DS Specifications Engineering Non-CGMP DS COA MSDS Updated Tech Transfer Protocol (if needed) Engineering Non-CGMP DS Product 	\$205,350
MS8		5b Engineering Run Stability Testing	<ul style="list-style-type: none"> DS Engineering Stability Report 	\$16,650

MS9		Initiation of Task 7 (50%)		\$178,500
MS10	7	7a Engineering Drug Product	<ul style="list-style-type: none"> • DP Development Plan • DP Development Report • Non-CGMP Engineering Run DP Vials Suitable Preclinical Studies • DP Engineering Summary Report 	\$89,250
MS11		7b Engineering Drug Product Stability Testing (12 months)	<ul style="list-style-type: none"> • Stability Study Protocol • Interim Stability Study Report 	\$44,625
MS12		7c Engineering Drug Product Stability Testing (24 months)	<ul style="list-style-type: none"> • Final Stability Study Report 	\$44,625
MS13		9.1	Initiation of Pre-Clinical Tox Study and Protocols	
MS14	Completion of Pre-Clinical Tox Study and Protocols		<ul style="list-style-type: none"> • Preclinical Study Plan Development (PK and Toxicity Studies) • Preclinical Protocol Drafts 	\$83,000
MS15	9.2	Initiation of Pre-IND Meeting Support		\$126,500
MS16		Completion of Pre-IND Meeting Support	<ul style="list-style-type: none"> • Module 3 for CGMP DS and DP • IND Support Documentation (MS Word Deliverables) 	\$126,500
MS17	9.3	Initiation of Regulatory Technical Writing		\$166,500
MS18		Completion of Regulatory Technical Writing	<ul style="list-style-type: none"> • Clinical Trial Documentation to Support Phase 1 Clinical Study 	\$166,500
Labor Total				\$2,579,000
Estimated Consumable Pass-Through Costs				\$1,427,000
Estimated Overall Total				\$4,006,000

Table 30. Optional Tasks Payment Schedule

Payment Table (Optional Tasks)				
Milestone	Task	Description	Deliverables	Payment
MS19	6	Initiation of Task 6 (50%)		\$297,000
MS20		6a CGMP Run	<ul style="list-style-type: none"> • QA-Approved Batch Production Records • QA-Approved COA(s) (per lot) • Stability Testing Samples • Campaign Summary Report • DS Materials for DP Formulation 	\$282,150
MS21		6b CGMP Run Stability Testing	<ul style="list-style-type: none"> • Stability Testing Data • Stability Testing Reports 	\$14,850
MS22	8	Initiation of Task 8 (50%)		\$196,500
MS23		8a CGMP Drug Product	<ul style="list-style-type: none"> • Media Fill Qualification Report • Up to 2,000 Vials of CGMP DP • COAs for Released CGMP DP • QA-Approved Batch Production Records • QA-Approved Campaign Summary Report 	\$98,250
MS24		8b CGMP Drug Product Stability Testing (12 months)	<ul style="list-style-type: none"> • Stability Study Protocol • Interim Stability Study Report 	\$49,125
MS25		8c CGMP Drug Product Stability Testing (24 months)	<ul style="list-style-type: none"> • Final Stability Study Report 	\$49,125
Labor Total				\$987,000
Estimated Consumable Pass-Through Costs				\$573,000
Estimated Overall Total				\$1,566,000

6. MATERIALS

Materials will be invoiced to Blue Water as per Section 3.3 of the MSA.

7. PAYMENT TERMS

Payment terms are defined in Section 6.4 of the MSA.

8. STORAGE FEES

\$350 / month / freezer or refrigerator shelf

\$1,200 / month / entire freezer or refrigerator



9. GENERAL ASSUMPTIONS:

The schedules, estimates and costs contained within this Project Addendum are based on the Listing of Technical Assumptions and the following general assumptions.

1. Ology Bio Technical Approach is a suggested pathway based on the information provided in the Blue Water Request for Proposal (RFP). Additional and/or replacement of the techniques as a result of new and/or more (or less) detailed information from Blue Water may affect the content and pricing.
2. Information or issues discovered after contract award through the gap analysis performed on the technical transfer package provided to Ology Bio, or through analytical and/or process development activities, may require changes to proposed scope and costs. If such situations arise, Ology Bio will propose these changes to Blue Water through a formal Change Request which will require Blue Water approval before the changes can proceed.
3. Blue Water will make available the appropriate subject matter experts and stakeholders as needed.
4. Blue Water will provide sufficient materials required to begin assay development.
5. Blue Water assumes that active and responsive participation and availability by Blue Water SMEs, stakeholders, etc., will exist throughout the length of this project in support of project scope, schedule, and team.
6. Access to development/practice/test documents will be available at contract start.
7. Full cooperation and conditions obtained from any/all applicable external third parties (manufacturers, service providers, leasers, etc.) required by the scope of this project will be acceptable to Ology Bio. Unfavorable conditions (terms, costs, etc.) will require that alternative solutions be found.
8. Timelines are bound to the specific period outlined in this Project Addendum. As such, the appropriate space and resources will be allocated to this project during that timeframe. In the event of delays resulting in activity or inactivity of Blue Water, additional charges and an extension of the timeline may become necessary.
9. Ology Bio will work in good faith based on agreed upon terms and in cooperation of the needs of Blue Water. All activities associated with this project remains at the discretion of Ology Bio.
10. A mutually agreed-upon Decision Log will be used to make and record non-substantial changes/modifications to the contract without the need for a complete formal amendment. The Decision Log will be referenced as incorporated into the contract.

10. MSA TERMS:

All of the terms and conditions set forth in the MSA, to the extent not expressly modified herein, are hereby incorporated into this Project Addendum as if set out in full herein. If any terms in this Project Addendum conflict with the terms of the MSA, the terms in the MSA will govern, except as specifically modified herein in accordance with the MSA. All capitalized terms not otherwise defined herein shall have the meanings ascribed to such terms in the MSA.



IN WITNESS WHEREOF, the parties have caused this Project Addendum to be executed by their duly authorized representatives.

Ology Bioservices, Inc.

By: /s/ Timothy Cooke
Name: Timothy Cooke
Title: _____

Blue Water Therapeutics, Inc.

By: /s/ Joe Hernandez
Name: Joe Hernandez
Title: _____



09 January 2020

Joseph Hernandez
Chief Executive Officer
Blue Water Vaccines, Inc.
15 East Putnam Avenue, Suite 363
Greenwich, CT 06830

Dear Mr. Hernandez,

Reference is made to that certain Master Services Agreement (“Agreement”) dated July 19, 2019 by and between Ology Bioservices, Inc. (“Ology Bio”) and Blue Water Vaccines, Inc. (“Blue Water”, together the “Parties”), and to the Agreement Project Addendum (“Project Addendum”) dated October 18, 2019 and attached to the Agreement as Exhibit A.

Per the terms of the Project Addendum, Blue Water was to remit \$513,000 to Ology Bio for the initiation of Tasks 1-4 (the “Initiation Payment”), due on November 21, 2019. As of January 1, 2020, Ology Bio has received \$100,000 of this Initiation Payment and has incurred \$51,400 of costs performing services under the Project Addendum to date.

Due to unforeseen circumstances in which Blue Water is unable to provide lead candidates and constructs required for Ology Bio to begin work on Tasks 1-4 as detailed in the Project Addendum, the Parties agree that Ology Bio will stop work effective immediately.

The Parties further agree that Ology Bio will resume work on Tasks 1-4 in the Project Addendum at Blue Water’s request and upon remittance of the remaining \$413,000 of Initiation Payment to Ology Bio.

Sincerely,

/s/ Andras Cziotka

Andras Cziotka
VP, Legal Affairs

Accepted and Agreed:

/s/ Joseph Hernandez

Joseph Hernandez
Chief Executive Officer
Blue Water Vaccines, Inc.



PROJECT ADDENDUM II TO MASTER SERVICES AGREEMENT

This Project Addendum is effectively dated as of May 21, 2021 (the "Effective Date") by and between Blue Water Vaccines, Inc., a Delaware corporation having a principal place of business at 15 East Putnam Avenue, Suite 363, Greenwich, CT 06830 ("Blue Water" or "Client"), and Ology Bioservices, Inc., a Delaware corporation having a principal place of business at 13200 NW Nano Court, Alachua, Florida 32615 ("Ology Bio"). Blue Water and Ology Bio are sometimes referred to herein individually as a "Party" and collectively as the "Parties."

WHEREAS, Blue Water and Ology Bio entered into a Master Services Agreement effectively dated as of July 19, 2019, (the "MSA") whereby Ology Bio agreed to provide from time to time services and deliverables associated therewith ("Services") to Client pursuant to the terms and conditions set forth in the MSA and any Project Addendum;

WHEREAS, Blue Water and Ology Bio desire to enter into this Project Addendum II for Services as set forth herein, subject to and in accordance with the MSA.

NOW, THEREFORE, in consideration of the foregoing and the mutual promises, covenants and agreements set forth below, and for other good and valuable consideration, the receipt and sufficiency of which the parties hereby acknowledge, the parties agree as follows:

1. SCOPE OF WORK

To achieve the client's goal of process development and CGMP manufacturing of the live attenuated *Streptococcus pneumoniae* vaccine program, Blue Water requires the services of a CDMO. Ology Bio's experienced team of Subject Matter Experts and qualified subcontractors will comply with all applicable regulatory requirements to accomplish the scope of work. This proposal consists of eight tasks required for to complete the project, including:

- Task 1:** Technology Transfer and Process Establishment
 - Task 2:** Analytical Assay Development
 - Task 3:** CGMP Master Cell and Working Cell Banks
 - Task 4:** Process Scale-Up and Optimization
 - Task 5:** Engineering Drug Substance Run and Stability Testing
 - Task 6:** CGMP Drug Substance Run and Stability Testing
 - Task 7:** Engineering and CGMP Drug Product
 - Task 8:** OPTIONAL: Preclinical IND-Enabling Studies
-

2. STATEMENT OF WORK

Task 1: Technology Transfer and Process Establishment

Technical Assumptions:

- Product-specific information (e.g., Bill of Materials (BOM), previous run data, intermediate stability data, any regulatory documentation, test methods) will be transferred within 15 business days of contract signing.
- The kick-off meeting will be scheduled within 15 business days of contract signing.
- Two Process Establishment Runs will be performed in this task using the established methodology provided by Blue Water.
- Blue Water will provide a culture and Ology Bio will generate a Research Cell Bank (RCB), reagents and standards and associated Certificates of Analysis (COAs), as required, to Ology Bio within 15 days of contract signing.

Information Transfer and Gap Assessment:

The Information Transfer stage is critical for the success and timeliness of the project. We request that all pertinent documents from Blue Water will be supplied within 15 days of contract signing to allow enough time for critical review by our team. A kick-off meeting will be scheduled with review of the plans and timelines. After the project gap analysis is complete, a final schedule and Gantt chart will be completed.

Receiving Blue Water Documentation:

To initiate the technology transfer, we will conduct a thorough review of all process and analytical documents provided by Blue Water. In collaboration with Blue Water, we will create a Development Plan for the development of the live attenuated *Streptococcus pneumoniae* vaccine candidate. Blue Water will provide Ology Bio with all applicable standard operating procedures (SOPs), process procedures, process transfer protocols, analytical plans, specifications and other knowledge to transfer analytical methods and the manufacturing process. Technology transfer will include the following preparation activities:

- Preparation of a Development Plan
- Preparation of documentation
- Equipment Identification
- Flow diagrams as appropriate
- Process step descriptions
- Risk Analysis and Mitigation Strategy

Transfer of Product-Specific Materials from Blue Water and Procurement of Materials and Components:

Blue Water will provide cultures, reagents and standards, and associated COAs, as required, to Ology Bio within 15 days of contract signing in order to stay within the aggressive timeline for this program.

A full list of raw materials will be developed and sent to Blue Water for approval. All consumables, expendables and raw materials will be purchased using QA-approved vendors, properly inventoried and stored in the proper conditions. We may elect to purchase pre-prepared media and certain buffers from agreed-upon suppliers to avoid any variability in these critical reagents in the process. We will identify and qualify suppliers of production materials and any required excipients. The nature of this project will require that additional materials identified in the Process Development Task to be communicated to Blue Water at a later date.

Development Plan and Reports:

Weekly or biweekly presentations will be provided to Blue Water that summarizes the performance of the process per plan. At the end of Task 1, a draft Development Plan will be written and reviewed/approved by both Ology Bio and Blue Water. The Development Reports will be written after execution of Establishment Runs to contain details on each unit operation; trending of the data compared with any available historical data (i.e., provided in Blue Water documents); analytical testing results; process deviations and impact assessment; our proposed process changes, including assessment of impact and justifications for changes; and updated risk and gap assessment.

Process Establishment:

We will generate a Research Cell Bank based on the cultures provided by Blue Water (Task 4). We will perform two Process Establishment Runs to demonstrate the process for the Blue Water *Streptococcus pneumoniae* vaccine candidate at laboratory scale (1 L shake flask) and prepare a Process Transfer Final Report for approval by Blue Water. Limited testing will be performed on these Establishment Runs (cell viability and culture purity). We will also present a preliminary BOM at the end of this task.

Task 1 Deliverables:

- Final Schedule Agreement with Blue Water and Ology Bio at completion of this task.
- Project Management Plan including Project Charter
- Meeting agenda and minutes
- Draft Process Development Plan
- Process Establishment Plan and Report
- Preliminary BOM

Task 2: Analytical Assay DevelopmentTechnical Assumptions:

- Blue Water will provide analytical Reference Standards, product-specific reagents, and initial samples of Drug Substance (DS) for use in method transfer and validation.
- All required analytical methods are summarized in **Tables 1 and 2**.
- Assay qualification will be phase appropriate.

A complete list of analytical assays will be provided by Blue Water or agreed upon with Ology Bio. Specifications for each of the assays will also be provided by Blue Water or agreed upon with Ology Bio. We propose to perform Technology Transfer feasibility assessments on the QC assays outlined in **Tables 1 and 2** for DS and DP testing. Following the Technology Transfer feasibility assessment, QC scientists will revise method SOPs (as required) and verify methods for testing. Upon completion of the verification studies, a comprehensive report, reviewed and approved by QA, will be provided documenting the results of the verification, the suitability of the intended method, a description of test samples, a description of experiments and a summary of data for each parameter tested, as well as relevant raw data obtained from these studies. These assays will also be qualified as suitable for CGMP release and use in Phase 1 clinical trials. Testing will not be outsourced without the prior written consent of Blue Water.

Table 1. Analytical Release Testing for *Streptococcus pneumoniae* Drug Substance

Release Tests	Company/Test
Strain ID	CRL GP-V928 Microbial ID by DNA Sequencing Accugenix System
Strain Purity (by differential media)	CRL GP-V715 Determination of Purity Using Different Agars
Viability (CFU/ml)	CRL GP-V732 Titer Determination of Microbial Suspensions
Growth Stability (bacterial doubling time)	Ology Bio
Endotoxin (LAL)	Ology Bio

Table 2. Analytical Release/Characterization Testing for *Streptococcus pneumoniae* DS/DP

Characterization Assay	Company/Test
Strain ID	CRL GP-V928 Microbial ID by DNA Sequencing Accugenix System
Strain Purity (by differential media)	CRL GP-V715 Determination of Purity Using Different Agars
Viability (CFU/ml)	CRL GP-V732 Titer Determination of Microbial Suspensions
Western Blot for CbpA and PspA	Outsourced (company TBD)
Appearance	Ology Bio
Growth Stability	Ology Bio
Endotoxin (LAL)	Ology Bio

Task 2 Deliverables:

- Analytical assay Qualification Plan
- QA-reviewed and approved Qualification Report for each analytical method
- In-process and release assay specifications

Task 3: CGMP Master and Working Cell Banks**Technical Assumptions:**

- A minimum of 300 CGMP MCB vials will be prepared.
- A minimum of 300 CGMP WCB vials will be prepared.
- RCB required for MCB production will be generated at Ology Bio in Task 4.

In compliance with CGMP Regulations, we will produce a minimum of 300 vials of a Master Cell Bank (MCB) for the vaccine candidate per QA-approved batch production records using the materials originally supplied by Blue Water and the RCBs generated by Ology Bio as part of Task 4. These RCBs will be utilized for the production of the CGMP MCBs. The new MCBs will undergo characterization and release testing based on an analytical control strategy outlined in **Table 3**. We propose to generate CGMP Working Cell Banks (WCBs) from the MCBs and characterize them.

Table 3. Cell Bank Release Assays

Cell Bank Release Assay	Company/Test
Strain ID	CRL GP-V928 Microbial ID by DNA Sequencing Accugenix System
Strain Purity (by differential media)	CRL GP-V715 Determination of Purity Using Different Agars
Viability (CFU/ml)	CRL GP-V732 Titer Determination of Microbial Suspensions
Growth Stability	Ology Bio
Bacteriophage	Outsourced (company TBD)
Whole genome sequencing	Outsourced (company TBD)
Western Blot for antigen production	Outsourced (company TBD)
Agglutination assay for capsule production	Outsourced (company TBD)

An annual stability program will also be initiated and will be continued for up to three years for both MCB and WCB. For budgeting purposes, testing will only be conducted for 12 months, but cells will remain on stability for future testing. The stability testing is provided in **Table 4**.

Table 4. Cell Bank Stability Assays

Cell Bank Stability Assays	Company/Test
Growth Stability	Ology Bio
Viability (CFU/ml)	CRL GP-V732 Titer Determination of Microbial Suspensions
Cell culture purity	CRL GP-V715 Determination of Purity Using Different Agars
Western Blot for Antigen Production	Outsourced (company TBD)
Agglutination Assay for Capsule Production	Outsourced (company TBD)

Task 3 Deliverables:

- Summary Report on cell banking and release for both MCB and WCB for the *Streptococcus pneumoniae* candidates including COAs and copies of Master Batch Records
- Cell bank stability plan for the candidate MCB and WCB for review and approval by Blue Water
- A minimum of 300 CGMP MCB vials
- A minimum of 300 CGMP WCB vials

Task 4: Process Scale-Up and Optimization

Technical Assumptions:

- The Process Development Plan outlining the experimental plan will be approved by Blue Water.
- Successful Process Establishment Runs were completed in Task 1.
- Process Development will include generation of RCBs.
- Two process development runs at the 3 L scale will be performed.
- Two scale-up runs at the 120 L scale will be performed.

We will initially generate RCBs from the materials provided by Blue Water. We will identify three individual colonies, and each of the colonies will be grown at the 1-3 mL scale and will be analyzed as described in **Table 1**. Two colonies will be scaled up and used to generate 50 vials of RCB. These RCBs will then be utilized for production of the CGMP MCBs and WCBs as described in Task 3. Each RCB will be characterized as per Table 3.

These RCBs will be used for the initial process development studies. The process development will focus on the upstream and downstream processing of the vaccine candidates. Small-scale upstream production runs (1 L scale) will be used to generate materials for the downstream processing. We propose to scale-up the manufacturing process to the 120 L scale. This will include two 3 L production runs to identify the optimum upstream parameters for maximum production of the vaccine candidate. We then propose to perform two scale-up runs at the 120 L scale using the 150 L fermenter, the proposed manufacturing production scale. These runs will be analyzed using the in-process and release tests as described in Task 2. Success criteria for these runs will be agreed upon by Blue Water and Ology Bio prior to initiation of these runs. The sampling plan for these runs will also be agreed upon prior to initiation of the runs. Draft batch records and a final sampling plan will be prepared for use in the Engineering Runs (Task 5).

Task 4 Deliverables:

- Process Development Report for Blue Water review and approval
- Materials from the Process Development Runs
- Process Scale-up Plan
- Process Scale-up final report for review and approval by Blue Water
- Materials from the Scale-up runs
- Process parameters for the Engineering Run
- Technology Transfer Protocol
- Draft batch records and sampling plan for use in the Engineering Run
- Confirmation Run report and materials

Task 5: Engineering Drug Substance Run and Stability TestingTechnical Assumptions:

- We propose to perform one Engineering Run for the *Streptococcus pneumoniae* DS at the 120 L scale.
- In-process and release testing will be performed as described in Task 3.
- Materials will be placed on 12-month stability.
- DS Reference Standard materials will be generated (1,000 vials).

We will perform one Engineering Run at full scale of 120 L. The in-process and release testing plan for this run will be agreed upon by Blue Water and Ology Bio. The Engineering Run will be executed at the 120 L production scale by manufacturing staff in a GMP-like environment at the Facility. The Engineering Run will be performed using draft Master Batch Records and QA-released raw materials and components. The batch records will be redlined during the Engineering Run, and any changes will be incorporated into the Master Batch Records prior to approval for CGMP manufacturing. The in-process and release assays are described in Task 2, **Table 2**.

The material generated from this lot will be indicative of the CGMP-manufactured material. The materials from this lot will be made available to Blue Water for additional studies. In addition, materials from this lot will be used to generate Reference Standard materials. A COA and Material Safety Data Sheet (MSDS) will be prepared at this stage. A completed BOM will be submitted as part of this Stage. The non-CGMP DS material will be placed on stability studies.

Stability Testing:

Stability testing of non-CGMP Engineering DS will be conducted in accordance with current U.S. FDA Code of Federal Regulations (CFR) and International Conference on Harmonization (ICH) guidelines, including:

- 21 CFR Parts 210 and 211 (CGMPs)
- 21 CFR Part 312 (IND Application)
- ICH Q1A (R2) Guideline: "Stability Testing of New Drug Substances and Products," February 2003
- ICH Q1C Guideline: "Stability Testing of New Dosage Forms," November 1996
- ICH Q5C Guideline: "Stability Testing of Biotechnological/Biological Products," November 1995

The stability evaluation will support the following:

- Use of the investigational product throughout nonclinical studies and clinical trials
- Mitigation of shipping and storage temperature excursion impact on the investigational product
- Stability of the product during handling (clinical sites, emergency-use scenarios)
- Selection of lot release and stability-indicating analytical test methods
- Expiration or retest dates for DS
- Product conformity to stability specifications throughout the clinical trial

The proposed stability study for non-CGMP (as well as CGMP) DS lots is provided in **Table 5**. Stability testing will be conducted per approved protocols and reported annually.

Table 5. Drug Substance and Drug Product Stability

Test	Location	Acceptance Criteria	0m*	1m	3m	6m	9m	12m	18m	24m
Viability	CRL	TBD	X	X	X	X	X	X	X	X
Strain ID	CRL	TBD	X	X	X	X	X	X		
Growth stability	Ology Bio	TBD	X	X	X	X	X	X	X	X
Sterility	Ology Bio	No fungal or undesired bacterial growth observed	X					X		
Genetic stability (PCR and Western)	TBD	Presence of PCR product and antigen	X					X		X

* Release Testing

Reference Standard:

Providing high-quality, documented and qualified Reference Standards is critical to every batch released, and characterization can be an arduous process. In accordance with our QS, Reference Standards are produced and qualified prior to use in lot release, characterization or stability testing. The objective of this program is to provide complete documentation of the establishment and trending of product Reference Standards. Another goal of the program is to assess the suitability and availability of Reference Standards and critical reagents to meet ICH and FDA guidelines appropriate for the product lifecycle stage for which the materials will be used. This program results in complete documentation of these Reference Standards by providing:

- Manufacture according to approved batch record or protocol
- Qualification according to approved qualification protocol
- Lot release testing according to approved technical specification
- Generation of a COA detailing the lot release testing results
- Controlled storage conditions and inventory
- Stability testing
- Continual data trending and evaluation of suitability in new/revised analytical methods and/or with changes to manufacturing process operations

For the Blue Water program, interim DS Reference Standards will be established in accordance with an approved protocol from the DS Engineering lot(s). To reiterate the approach to DS Reference Standard, a minimum of 1,000 vials of Engineering DS will be aliquoted and qualified as the DS Reference Standard. The filled Engineering DP generated in optional Task 7 will be labelled and qualified as the DP Reference Standard. A QA-reviewed and approved Qualification Report will be provided that documents suitability of the DS and DP Reference Standards in the intended methods. These interim DS and DP Reference Standards are to be used for Phase 1/2 product lot release and stability testing.

Task 5 Deliverables:

- DS Engineering Report
- DS Engineering Stability Protocol/Report
- Finalized BOM
- Finalized CGMP batch record templates
- Finalized CGMP DS Specifications
- Engineering non-CGMP DS COA and MSDS
- Updated Technology Transfer Protocol (if needed)
- Engineering non-CGMP DS Product

Task 6: CGMP Drug Substance Run and Stability Testing**Technical Assumptions:**

- Ology Bio CGMP WCB produced will be used.
- Ology Bio will perform one CGMP DS lot for the *Streptococcus pneumoniae* DS candidate at the 120 L scale.

Blue Water and Ology Bio will agree on the analytical and in-process testing plan for the routine production of the Blue Water vaccine candidate, which we will implement. The manufacturing processes that were developed and generated in Task 5 will be used for the DS candidate. Following completion of the scalability studies, a Technology Transfer Protocol will be generated. This report will describe the process development and define the critical process parameters and established ranges. The report will summarize lot testing and establish a sampling and testing plan to be used during CGMP manufacturing. A BOM listing all required raw materials and components will be included. From this BOM, specifications will be created for each material, as well as for in-process intermediates where required. Batch records will be finalized and approved by QA for use in the CGMP manufacturing campaign. Any changes identified during the execution of the DP Engineering Run (Task 5) will be incorporated into the final CGMP batch records prior to execution.

We will perform one CGMP manufacturing campaign in accordance with:

- 21 CFR Parts 210 and 211 (CGMP)
- 21 CFR Part 312 (IND Application)
- 21 CFR Parts 600 and 610 (Biological Products)
- 21 CFR Part 11 (Electronic Records and Signatures)

To lead to a successful campaign, we will use manufacturing readiness reviews to ensure that all activities are completed prior to the start of manufacturing. We perform Area Clearance and Product Changeover according to internal SOP-09-00054. Trained Operations personnel will clear manufacturing areas after manufacturing campaigns following work instruction WI-09-00004. Areas are cleaned according to SOP-09-00006, including chlorine dioxide decontamination when appropriate. Activities are documented on forms and manufacturing areas are released for use after QA review of these activities.

Our QA team takes responsibility for assuring the quality and integrity of products and all data generated in compliance with the FDA GLPs and CGMPs. QA provides review of manufacturing and testing operations as well as approval of specifications, Master Batch Records, procedures, contract manufacturers, system and equipment changes, and intermediate and final product release. Deviations and investigations are integrated in a corrective action system. QA review and approval activities will be carried out in support of CGMP production campaigns.

Documentation:

We have a validated electronic Quality Management System, MasterControl, to automate and integrate processes for meeting quality standards and complying with regulatory requirements. Master Control manages documents, training and risk; processes and audits; and facility and equipment calibration and maintenance program. Documentation in MasterControl includes, but is not limited to, raw material specifications, product specifications, MPR, equipment operation SOPs, and analytical method SOPs and protocols.

CGMP manufacturing will be performed in compliance with CGMP regulations, including approved Master Batch Records, CGMP cell banks, active environmental monitoring and QA release of all raw materials and consumables. Raw materials will be purchased using QA-approved material specifications from QA-approved suppliers in accordance with our Supplier Selection, Assessment and Approval procedures (SOP-20-00018). CGMP Runs will be performed in the manufacturing core using the same equipment, facilities and personnel as utilized for the Engineering Run.

Production:

Trained manufacturing personnel will execute one CGMP Production lot in accordance with QA-approved production records and SOPs. The CGMP Run will be performed in the manufacturing core using the same equipment, facilities and personnel as utilized for the Engineering Run. The manufacturing core features ISO 8 in-operation (Grade C) processing rooms for all closed system operations. All open manipulations will occur within the ISO 5 area (Grade A BSC) located within an ISO 7 in-operation (Grade B) suite adjacent to the main processing room. Samples will be taken throughout the manufacturing process according to the batch record and product specifications. The process will be executed aseptically from start to finish, as demonstrated in the process simulation as part of Task 5. Bulk DS will be stored at $\leq -70^{\circ}\text{C}$ fill/finish at our facility.

The CGMP material will be tested according to the DS specifications and tests previously defined. QC conducts in-process and lot release testing per SOPs and sampling plans. QA will provide the final review of batch records, environmental monitoring and analytical results. QA will also provide release of CGMP DS via a COA, ensuring that the DS product lot meets all technical specifications and is acceptable for use in GLP, nonclinical studies and Phase 1 clinical studies.

We will perform limited stability testing as outlined in Task 5 and will provide samples as defined.

Task 6 Deliverables:

- QA-Approved Batch Production Records for the *Streptococcus pneumoniae* DS candidates
- QA-Approved COA(s)
- Stability testing samples, data and reports
- Campaign Summary Reports
- DS materials for DP formulation

Task 7: Engineering and CGMP Drug Product

Technical Assumptions:

- Maximum DP lot size is 2,000 single-dose vials per lot.
- Intended DP storage temperature is < -20° C.
- A DP Engineering run will be required.
- DP process qualification runs will be required.

In accordance with FDA Guidance for Industry, “Sterile Drug Products Produced by Aseptic Processing – Current Good Manufacturing Practice,” Sept 2004, aseptic formulation and fill validation (media fill validation) will be conducted using a maximum of 2,000 vials per lot in a mutually approved container/closure system (vial, stopper, seal). Three consecutive successful media fill Validation Runs will be performed using TBS to simulate the formulated DP according to an approved media fill validation batch record. In addition, appropriate interventions (extended processing times, simulation of spillage and clean-up of spillage, changing out of the fill needle) will be incorporated into the validation activities.

Phase 1 DP formulation and liquid product fill operations will be conducted at our facility. Using QA-approved production documentation, the DS lot will be formulated to achieve the final concentration of the to-be-determined titer in the selected final formulation (determined by Blue Water). Formulated product will be filled into the mutually approved container/closures within an aseptic area. A maximum of 2,000 vials per DP lot will be targeted for filling. QC will conduct lot release testing as summarized in **Table 2** per batch records and sampling plans. QA will provide the final review and release, ensuring that the DP lots meet all technical specifications and are acceptable for use in GLP nonclinical studies and clinical studies. Stability testing of CGMP DP lots is described in **Table 5**.

Task 7 Deliverables:

- DP Engineering Run Report
- Media Fill Qualification Report
- Up to 2,000 vials of CGMP DP per lot (two lots)
- COAs for released CGMP DP
- QA-approved batch production records (per lot, two lots)
- QA-approved Campaign Summary Report

- Stability study protocol
- Stability study report

Task 8: Preclinical IND-Enabling Studies

Technical Assumptions:

- The non-CGMP Engineering lot will be used for the GLP toxicity study.

Subtask 8.1: Preclinical Tox Study

We will support Blue Water in the development of a nonclinical safety plan to support IND filing. Based on our Regulatory experience, CBER/FDA expects high-quality material for the IND-enabling toxicity studies that is either CGMP material or comparable to CGMP material. To reduce risk, the schedule linked this study to the CGMP lot. Blue Water can consider risks as it reviews the nonclinical safety plan.

Our Nonclinical SME will work with the subcontractor, IITRI, to develop a protocol for an IND-enabling study based on feedback received from the FDA during the Pre-IND Meeting. We will oversee the performance of a GLP-compliant repeat-dose toxicity study of the *Streptococcus pneumoniae* vaccine candidate in rabbits. The objective of the study will be to determine the immunogenicity, target organ toxicity, and reversibility of the *Streptococcus pneumoniae* vaccine in rabbits following a repeat-dose regimen to support a Phase 1 clinical study.

Task 8 Deliverables:

- Preclinical Study Plan development (PK and toxicity studies)
- Module 3 for CGMP DS and DP

3. PROJECT SCHEDULE

The proposed start date is May 2021; this start date is subject to change based on the date this proposal is accepted and signed and availability of the facility.

Task	Description	Start	End
1	Technology Transfer and Process Development	May 2021	July 2021
2	Analytical Assay Development	May 2021	July 2021
3	CGMP Master Cell and Working Cell Banks	June 2021	November 2021
4	Process Scale-Up and Optimization	July 2021	October 2021
5	Engineering Drug Substance Run and Stability Testing	November 2021	January 2023
6	CGMP Drug Substance Run and Stability Testing	December 2021	March 2023
7	Engineering and CGMP Drug Product	December 2021	March 2023
8	Preclinical IND-Enabling Studies	March 2023	August 2023

4. PROJECT BUDGET

Task	Description	Original Price	Discounted for Analytics	Revised Price
1	Technology Transfer and Process Development	\$ 286,000	0%	\$ 286,000
2	Analytical Assay Development	\$ 275,000	50%	\$ 137,500
3	CGMP Master Cell and Working Cell Banks	\$ 253,000	10%	\$ 227,700
4	Process Scale-Up and Optimization	\$ 451,000	10%	\$ 405,900
5	Engineering Drug Substance Run and Stability Testing	\$ 434,500	10%	\$ 391,050
6	CGMP Drug Substance Run and Stability Testing	\$ 605,000	10%	\$ 544,500
7	Engineering and CGMP Drug Product	\$ 616,000	10%	\$ 554,400
8	Preclinical IND-Enabling Studies	\$ 220,000	0%	\$ 220,000
	TOTAL	\$ 3,140,500	\$ 373,450	\$ 2,767,050

Note: Material and outsourced testing costs are not included in the Project Costs and will be billed at cost plus a 15% material handling fee. Estimated materials costs for the entire project are about 20% of total labor costs. Actual materials costs may vary based on information determined during development of the process and potential changes to required scale or number of runs.

5. PAYMENT SCHEDULE

Milestone	Description	Price
1	Tasks 1 and 2: Initiation Payment (50%)	\$ 211,750
2	Task 1: Completion: Technology Transfer & Process Development (50%) <ul style="list-style-type: none"> ■ Final Schedule Agreement with Blue Water and Ology Bio at completion of this task. ■ Project Management Plan including Project Charter ■ Meeting agenda and minutes ■ Draft Process Development Plan ■ Process Establishment Plan and Report ■ Preliminary BOM 	\$ 143,000
3	Task 2: Completion: Analytical Assay Development (50%) <ul style="list-style-type: none"> ■ Analytical assay Qualification Plan ■ QA-reviewed and approved Qualification Report for each analytical method ■ In-process and release assay specifications 	\$ 68,750
4	Task 3: Initiation: CGMP Master Cell & Working Cell Banks (50%)	\$ 113,850
5	Task 3: Completion: CGMP Master Cell & Working Cell Banks (50%) <ul style="list-style-type: none"> ■ Summary Report on cell banking and release for both MCB and WCB for the <i>Streptococcus pneumoniae</i> candidates including COAs and copies of Master Batch Records ■ Cell bank stability plan for the candidate MCB and WCB for review/approval by Blue Water ■ A minimum of 300 CGMP MCB vials ■ A minimum of 300 CGMP WCB vials 	\$ 113,850
6	Task 4: Initiation: Process Scale-Up & Optimization (50%)	\$ 202,950
7	Task 4: Completion: Process Scale-Up & Optimization (50%) <ul style="list-style-type: none"> ■ Process Development Report for Blue Water review and approval ■ Materials from the Process Development Runs ■ Process Scale-up Plan ■ Process Scale-up final report for review and approval by Blue Water ■ Materials from the Scale-up runs ■ Process parameters for the Engineering Run ■ Technology Transfer Protocol ■ Draft batch records and sampling plan for use in the Engineering Run ■ Confirmation Run report and materials 	\$ 202,950
8	Task 5: Initiation: Engineering Drug Substance Run (50%)	\$ 195,525
9	Task 5: Completion: Engineering Drug Substance Run (35%) <ul style="list-style-type: none"> ■ Finalized BOM ■ Finalized CGMP batch record templates ■ Finalized CGMP DS Specifications ■ Engineering non-CGMP DS COA and MSDS ■ Updated Technology Transfer Protocol (if needed) ■ Engineering non-CGMP DS Product 	\$ 136,868
10	Task 5: Completion of 12-month Stability Testing (10%) <ul style="list-style-type: none"> ■ DS Engineering Stability Protocol/Reports 	\$ 39,105
11	Task 5: Completion of 24-month Stability Testing (5%) <ul style="list-style-type: none"> ■ DS Engineering Stability Protocol/Reports 	\$ 19,553

Milestone	Description	Price
12	Task 6: Initiation: CGMP Drug Substance Run & Stability Testing (50%)	\$ 272,250
13	Task 6: CGMP Drug Substance Run (35%) <ul style="list-style-type: none"> ■ QA-Approved Batch Production Records for the <i>Streptococcus pneumoniae</i> DS candidates ■ QA-Approved COA(s) ■ Campaign Summary Reports ■ DS materials for DP formulation 	\$ 190,575
14	Task 6: Completion of 12-month Stability Testing (10%) <ul style="list-style-type: none"> ■ DS Engineering Stability Protocol/Reports 	\$ 54,450
15	Task 6: Completion of 24-month Stability Testing (5%) <ul style="list-style-type: none"> ■ DS Engineering Stability Protocol/Reports 	\$ 27,225
16	Task 7: Initiation: Engineering & GMP Drug Product (50%)	\$ 277,200
17	Task 7: Completion: Engineering Drug Product (15%) <ul style="list-style-type: none"> ■ Media Fill Qualification Report ■ Up to 2,000 vials of Engineering DP ■ COA & DP Engineering Run Report 	\$ 83,160
18	Task 7: Completion: CGMP Drug Product (20%) <ul style="list-style-type: none"> ■ Up to 2,000 vials of CGMP DP ■ COA for released CGMP DP ■ QA-approved Batch Production Records ■ QA-approved Campaign Summary Report 	\$ 110,880
19	Task 7: Completion of 12-month Stability Testing for GMP Drug Product (10%) <ul style="list-style-type: none"> ■ DP Stability Protocol/Reports for Engineering and GMP Drug Product 	\$ 55,440
20	Task 7: Completion of 24-month Stability Testing for GMP Drug Product (5%) <ul style="list-style-type: none"> ■ DP Stability Protocol/Reports for Engineering and GMP Drug Product 	\$ 27,720
21	Task 8: Initiation: Preclinical IND-Enabling Studies (50%)	\$ 110,000
22	Task 8: Completion: Preclinical IND-Enabling Studies (50%) <ul style="list-style-type: none"> ■ Preclinical Study Plan development (PK and toxicity studies) ■ Module 3 for CGMP DS and DP 	\$ 110,000
LABOR TOTAL		\$ <u>2,767,050</u>

Note: Material costs are not included in the Labor Total and will be billed at cost plus a 15% material handling fee.

6. MATERIALS

Materials shall collectively mean all materials required for Production of Product, including the BDS, Components, Secondary Packaging Materials and Raw Materials.

7. PAYMENT TERMS

See schedule above, Section 5

8. STORAGE FEES

\$350 / month / freezer or refrigerator shelf

\$1,200 / month / entire freezer or refrigerator

9. GENERAL ASSUMPTIONS

The schedules, estimates and costs contained within this Project Addendum are based on the Listing of Technical Assumptions and the following General Assumptions.

1. Ology Bio technological proposal is a suggested pathway based on the information provided. Additional and/or replacement of the techniques as a result of new and/or more (or less) detailed information from Blue Water may affect the content and pricing of this proposal.
2. Client acknowledges that process development tasks are experimental in nature and that no favorable or useful result can be assured by Ology Bio. However, in case of unfavorable results, the Parties shall in good faith, agree to a revision to the preliminary specifications that shall then be the Specifications for subsequent runs that shall form a basis for rejection or acceptance of the deliverable. The Client shall bear the cost of runs resulting in unfavorable results, if the unfavorable results were obtained by performing the tasks according to generally acceptable professional standards and procedures approved by the Client.
3. Information or issues discovered after contract award through the gap analysis performed on the technical transfer package provided to Ology Bio, or through analytical and/or process development activities, may require changes to proposed scope and costs. If such situations arise, Ology Bio will propose these changes to Client through a formal Change Request which will require Client approval before the changes can proceed.
4. Blue Water will make available the appropriate subject matter experts and stakeholders as needed.
5. Blue Water will provide sufficient materials required to begin assay development.
6. Ology Bio assumes that active and responsive participation and availability by Blue Water SMEs, stakeholders, etc., will exist throughout the length of this project in support of project scope, schedule, and team.
7. Access to development/practice/test documents will be available at contract start.
8. Full cooperation and conditions obtained from any/all applicable external third parties (manufacturers, service providers, leasers, etc.) required by the scope of this project will be acceptable to Ology Bio. Unfavorable conditions (terms, costs, etc.) will require that alternative solutions be found.
9. Timelines are bound to the specific period outlined in this proposal. As such, the appropriate space and resources will be allocated to this project during that timeframe. In the event of delays resulting in activity or inactivity of Blue Water, additional charges and an extension of the timeline may become necessary.
10. Ology Bio will work in good faith based on agreed upon terms and in cooperation of the needs of Blue Water. All activities associated with this project remains at the discretion of Ology Bio.
11. A mutually agreed-upon Decision Log will be used to make and record non-substantial changes/modifications to the contract without the need for a complete formal amendment. The Decision Log will be referenced as incorporated into the contract.
12. This estimate is valid for 60 days and until this proposal is signed as a contract document and agreed upon by both parties. Ology Bio reserves the right to adjust pricing based on new data, market cost fluctuations, and additional work requested by Blue Water prior to execution of the contract.

10. MSA TERMS

All of the terms and conditions set forth in the MSA, to the extent not expressly modified herein, are hereby incorporated into this Project Addendum as if set out in full herein. If any terms in this Project Addendum conflict with the terms of the MSA, the terms in the MSA will govern, except as specifically modified herein in accordance with the MSA. All capitalized terms not otherwise defined herein shall have the meanings ascribed to such terms in the MSA or the Proposal.

IN WITNESS WHEREOF, the parties have caused this Project Addendum to be executed by their duly authorized representatives.

National Resilience, Inc.

By: /s/ Timothy Cooke
Name: Timothy Cooke
Title: Co-Head, Vaccines Franchise
Date: May 28, 2021

Blue Water Vaccines, Inc.

By: /s/ Joseph Hernandez
Name: Joseph Hernandez
Title: CEO
Date: May 21, 2021

EMPLOYMENT AGREEMENT

This EMPLOYMENT AGREEMENT (the “Agreement”) is made and entered into as of [●], 2021 by and between Blue Water Vaccines, Inc., a Delaware corporation (the “Company”) and Joseph Hernandez (“Executive”).

WHEREAS, Executive is currently employed by the Company as its Chief Executive Officer; and

WHEREAS, Executive is a party to a prior consulting agreement with the Company, dated October 22, 2018 (the “Prior Agreement”); and

WHEREAS, the Company desires to employ Executive and to enter into this Agreement embodying the terms of such employment, and Executive desires to enter into this Agreement and to accept such employment, subject to the terms and provisions of this Agreement.

NOW, THEREFORE, in consideration of the promises and mutual covenants contained herein and for other good and valuable consideration, the receipt and sufficiency of which are mutually acknowledged, the Company and Executive hereby agree as follows:

Section 1. **Definitions.** Capitalized terms not otherwise defined in this Agreement shall have the meaning set forth on Appendix A, attached hereto.

Section 2. **Acceptance and Term of Employment.**

The Company agrees to employ Executive, and Executive agrees to serve the Company, on the terms and conditions set forth herein. Executive’s employment under the terms of this Agreement shall commence on the date hereof and continue until terminated as provided in Section 7 hereof (the “Term of Employment”), except where terms are expressly effective upon the closing date of the underwritten public offering of the Company’s common stock (the “IPO Date”).

Section 3. **Position, Duties, and Responsibilities; Place of Performance.**

(a) Position, Duties, and Responsibilities. During the Term of Employment, Executive shall be employed and serve as the Chief Executive Officer and President of the Company, reporting directly to the Board of Directors of the Company, and having such duties and responsibilities commensurate with such position. Executive also agrees to serve as an officer and/or director of any member of the Company Group, in each case without additional compensation, and, without limiting the foregoing, will serve as a member of the Board at all times Executive serves as the Company’s Chief Executive Officer.

(b) **Performance.** Executive shall be employed with the Company on a full-time basis and shall devote an appropriate portion of his business time, attention, skill, and best efforts sufficient to assure the satisfactory performance of Executive's duties under this Agreement (excluding periods of vacation and sick leave). Except as provided below, Executive shall not engage in any other business or occupation during the Term of Employment, including, without limitation, any activity that (x) conflicts with the interests of the Company or any other member of the Company Group, (y) interferes with the proper and efficient performance of Executive's duties for the Company, or (z) interferes with Executive's exercise of judgment in the Company's best interests. Notwithstanding the foregoing, nothing herein shall preclude Executive from (i) serving, with the prior written consent of the Board, as a member of the board of directors or advisory board (or the equivalent in the case of a non-corporate entity) of non-competing for-profit businesses and charitable organizations (ii) serving, with the prior written consent of the Board, as an officer or managing member of the non-competing for-profit businesses listed on Appendix B to this Agreement, (iii) engaging in charitable activities and community affairs, and (iv) managing Executive's personal investments and affairs; *provided, however*, that the activities set out in clauses (i), (ii), and (iii) shall be limited by Executive so as not to materially interfere, individually or in the aggregate, with the performance of Executive's duties and responsibilities hereunder, and *further provided*, that with respect to the activities set out in clauses (i), (ii) and (iii), the Board may condition its consent on the express agreement by the Executive and the other non-competing business or other organization to the conditions and restrictions prescribed in Appendix B. In no event shall Executive make use of any personnel or other resources of the Company in performing his duties for, any such other business or other organization.

(c) **Principal Place of Employment.** The Company will permit Executive to work remotely from Executive's personal residence, although Executive understands and agrees that Executive may be required to work from, or travel to, the Company's offices from time to time as needed in connection with the performance of Executive's duties and responsibilities hereunder. Executive understands and agrees that Executive may be required to travel from time to time for business reasons

Section 4. **Compensation.**

During the Term of Employment, Executive shall be entitled to the following compensation:

(a) **Base Salary.** Executive shall be paid an annualized Base Salary (the "Base Salary"), payable in accordance with the regular payroll practices of the Company, of \$[420,000] per year, or, effective on and after the IPO Date, \$595,000 per year, with such additional increases, if any, as may be approved in writing by the Compensation Committee. The Compensation Committee will review Executive's Base Salary for increases not less than annually.

(b) **Annual Bonus.** Executive shall be eligible for an annual incentive bonus award determined by the Compensation Committee in respect of each fiscal year during the Term of Employment (the "Annual Bonus"). The target Annual Bonus for each fiscal year ending on or after the IPO Date shall be 50% of Base Salary (the "Target Annual Bonus"), with the actual Annual Bonus payable being based upon the level of achievement of annual Company and individual performance objectives for such fiscal year, as determined by the Compensation Committee and communicated to Executive. The Annual Bonus shall otherwise be subject to the terms and conditions of the annual bonus plan adopted by the Board or the Compensation Committee under which bonuses are generally payable to senior executives of the Company, as in effect from time to time. The Annual Bonus shall be paid to Executive at the same time as annual bonuses are generally payable to other senior executives of the Company subject to Executive's continuous employment through the applicable payment date (subject to Section 7 below).

(c) Equity Participation. In connection with Executive's employment hereunder, Executive shall be entitled to participate in the Company's equity incentive plan, as in effect from time to time, pursuant to the terms of such plan, an award agreement and such other documents Executive is required to execute pursuant to the terms of such plan (the plan, the award agreement, and such other documents collectively, the "Equity Documents"). Executive's equity participation shall be exclusively governed by the terms of the Equity Documents.

Section 5. Employee Benefits.

During the Term of Employment, Executive shall be entitled to participate in health, insurance, retirement, and other benefits provided generally to senior executives of the Company as subject to any applicable eligibility requirements (including such wait periods and other minimum service requirements as may be imposed by the terms of such benefit plans). Executive shall also be entitled to the same number of holidays, vacation days, and sick days, as well as any other benefits, in each case as are generally allowed to similarly situated senior executives of the Company in accordance with the Company policy as in effect from time to time. Nothing contained herein shall be construed to limit the Company's ability to amend, suspend, or terminate any employee benefit plan or policy at any time, and the right to do so is expressly reserved.

Section 6. Reimbursement of Business Expenses.

Executive is authorized to incur reasonable business expenses in carrying out Executive's duties and responsibilities under this Agreement, and the Company shall promptly reimburse Executive for all such reasonable business expenses, subject to documentation in accordance with the Company's policy, as in effect from time to time. In addition, to the extent Executive primarily works remotely from Executive's personal residence, the Company shall reimburse Executive for reasonable travel expenses incurred by Executive in connection with Executive's travel to and from the Company's offices in connection with carrying out Executive's duties and responsibilities under this Agreement subject to documentation in accordance with the Company's policy, as in effect from time to time. The Company shall be entitled to impute income to Executive in connection with any reimbursements or other benefits provided under this Section 4, and withhold from any and all amounts payable under this Section 4 as may be required to be withheld pursuant to any applicable law or regulation.

Section 7. Termination of Employment.

(a) General. The Term of Employment, and Executive's employment hereunder, shall terminate upon the earliest to occur of (i) Executive's death, (ii) a termination by reason of a Disability, (iii) a termination by the Company with or without Cause, and (iv) a termination by Executive with or without Good Reason. Except as otherwise expressly required by law (e.g., COBRA) or as specifically provided herein, all of Executive's rights to Base Salary, Annual Bonus, employee benefits and other compensatory amounts hereunder (if any) shall cease upon the termination of Executive's employment hereunder.

(b) Deemed Resignation. Upon any termination of Executive's employment for any reason, except as may otherwise be requested by the Company in writing and agreed upon in writing by Executive, Executive shall be deemed to have resigned from any and all directorships, committee memberships, and any other positions Executive holds with the Company or any other member of the Company Group.

(c) Termination Due to Death or Disability. Executive's employment shall terminate automatically upon Executive's death. The Company may terminate Executive's employment immediately upon the occurrence of a Disability, such termination to be effective upon Executive's receipt of written notice of such termination. Upon Executive's death or in the event that Executive's employment is terminated due to Executive's Disability, Executive or Executive's estate or Executive's beneficiaries, as the case may be, shall be entitled to:

(i) The Accrued Obligations;

(ii) Any unpaid Annual Bonus in respect of any completed fiscal year that has ended prior to the date of such termination, which amount shall be paid at such time annual bonuses are paid to other senior executives of the Company, but in no event later than the date that is 2½ months following the last day of the fiscal year in which such termination occurred;

(iii) An amount equal to (A) the Target Annual Bonus multiplied by (B) a fraction, the numerator of which is the number of days elapsed from the commencement of the fiscal year in which such termination occurs through the date of such termination and the denominator of which is 365 (or 366, as applicable), which amount shall be paid within thirty (30) days of Executive's termination date; and

(iv) To the extent the Company maintains a group health plan subject to the continuation health coverage requirements of Sections 601 through 609 of the Employee Retirement Income Security Act of 1974, as amended ("COBRA"), Executive is enrolled for coverage under such group health plan and subject to an election of COBRA continuation coverage by Executive (or Executive's covered dependents in the case of Executive's death), on the first regularly scheduled payroll date of each month during the twelve (12) month period immediately following the date Executive's termination occurred, payment of an amount equal to the difference between the monthly COBRA premium cost and the monthly contribution paid by active employees for the same coverage.

Following Executive's death or a termination of Executive's employment by reason of a Disability, except as set forth in this Section 7(c), Executive shall have no further rights to any compensation or any other benefits under this Agreement.

(d) Termination by the Company for Cause.

(i) The Company may terminate Executive's employment at any time for Cause, effective upon delivery to Executive of written notice of such termination; *provided, however*, that with respect to any Cause termination relying on clause (ii), (vi) or (vii) of the definition of Cause, to the extent that such act or acts or failure or failures to act are curable, Executive shall be given not less than ten (10) business days' written notice by the Board of the Company's intention to terminate Executive for Cause, such notice to state in detail the particular act or acts or failure or failures to act that constitute the grounds on which the proposed termination for Cause is based, and such termination shall be effective at the expiration of such ten (10) business day notice period unless Executive has fully cured such act or acts or failure or failures to act that give rise to Cause during such period.

(ii) In the event that the Company terminates Executive's employment for Cause, Executive shall be entitled only to the Accrued Obligations. Following such termination of Executive's employment for Cause, except as set forth in this Section 7(d)(ii), Executive shall have no further rights to any compensation or any other benefits under this Agreement.

(e) Termination by the Company without Cause. The Company may terminate Executive's employment at any time without Cause, effective upon delivery to Executive of written notice of such termination. In the event that Executive's employment is terminated by the Company without Cause (other than due to death or Disability), Executive shall be entitled to:

(i) The Accrued Obligations;

(ii) Any unpaid Annual Bonus in respect of any completed fiscal year that has ended prior to the date of such termination, which amount shall be paid at such time annual bonuses are paid to other senior executives of the Company, but in no event later than the date that is 2½ months following the last day of the fiscal year in which such termination occurred;

(iii) Subject to satisfaction of the applicable performance objectives applicable for the fiscal year in which such termination occurs, an amount equal to (A) the Target Annual Bonus otherwise payable to Executive for the fiscal year in which such termination occurred, assuming Executive had remained employed through the applicable payment date, multiplied by (B) a fraction, the numerator of which is the number of days elapsed from the commencement of such fiscal year through the date of such termination and the denominator of which is 365 (or 366, as applicable), which amount shall be paid at such time annual bonuses are paid to other senior executives of the Company, but in no event later than the date that is 2½ months following the last day of the fiscal year in which such termination occurred;

(iv) An amount equal to twelve (12) months of Base Salary, such amount to be paid in substantially equal payments over the [12]-month period following Executive's termination of employment (such period, the "Severance Term"), and payable in accordance with the Company's regular payroll practices; *provided, however*, if such termination occurs on or following any Change in Control (as defined in the equity documents), such amount shall instead be payable in a single lump sum within five (5) days of such termination; and

(v) To the extent the Company maintains a group health plan subject to the continuation health coverage requirements of Sections 601 through 609 of the Employee Retirement Income Security Act of 1974, as amended ("COBRA"), Executive is enrolled for coverage under such group health plan and subject to an election of COBRA continuation coverage by Executive (or Executive's covered dependents in the case of Executive's death), on the first regularly scheduled payroll date of each month during the Severance Term, payment of an amount equal to the difference between the monthly COBRA premium cost and the monthly contribution paid by active employees for the same coverage; *provided*, that the payments described in this clause (v) shall cease earlier than the expiration of the Severance Term in the event that Executive becomes eligible to receive any health benefits as a result of subsequent employment or service during the Severance Term;

Notwithstanding the foregoing, the payments and benefits described in clauses (ii) through (v) above shall immediately terminate, and the Company shall have no further obligations to Executive with respect thereto, in the event that Executive breaches any provision set forth in Section 9 hereof. Following such termination of Executive's employment by the Company without Cause, except as set forth in this Section 7(e), Executive shall have no further rights to any compensation or any other benefits under this Agreement.

(f) Termination by Executive with Good Reason. Executive may terminate Executive's employment with Good Reason by providing the Company thirty (30) days' written notice setting forth in reasonable specificity the event that constitutes Good Reason, which written notice, to be effective, must be provided to the Company within sixty (60) days of the occurrence of such event. During such thirty (30) day notice period, the Company shall have a cure right (if curable), and if not cured within such period, Executive's termination will be effective upon the expiration of such cure period, and Executive shall be entitled to the same payments and benefits as provided in Section 7(e) hereof for a termination by the Company without Cause, subject to the same conditions on payment and benefits as described in Section 7(e) hereof. Following such termination of Executive's employment by Executive with Good Reason, except as set forth in this Section 7(f), Executive shall have no further rights to any compensation or any other benefits under this Agreement.

(g) Termination by Executive without Good Reason. Executive may terminate Executive's employment without Good Reason by providing the Company sixty (60) days' written notice of such termination. In the event of a termination of employment by Executive under this Section 7(g), Executive shall be entitled only to the Accrued Obligations. In the event of termination of Executive's employment under this Section 7(g), the Company may, in its sole and absolute discretion, by written notice accelerate such date of termination without changing the characterization of such termination as a termination by Executive without Good Reason. Following such termination of Executive's employment by Executive without Good Reason, except as set forth in this Section 7(g), Executive shall have no further rights to any compensation or any other benefits under this Agreement.

(h) Release. Notwithstanding any provision herein to the contrary, the payment of any amount or provision of any benefit pursuant to subsection (e) or (f) of this Section 7 other than the Accrued Obligations (collectively, the “Severance Benefits”) shall be conditioned upon Executive’s execution, delivery to the Company, and non-revocation of the Release of Claims (and the expiration of any revocation period contained in such Release of Claims) within sixty (60) days following the date of Executive’s termination of employment hereunder (the “Release Execution Period”). If Executive fails to execute the Release of Claims in such a timely manner so as to permit any revocation period to expire prior to the end of such sixty (60) day period, or timely revokes Executive’s acceptance of such release following its execution, Executive shall not be entitled to any of the Severance Benefits. No portion of the Severance Benefits (other than Accrued Obligations) shall be paid until the Release of Claims has become effective and all such amounts shall commence to be paid on the first regular payroll date of the Company after the Release of Claims has become effective; *provided*, that, if the Release Execution Period overlaps two calendar years, the first payment shall not be made sooner than the first day of the second year, and shall include any missed payments.

Section 8. **Change of Control.**

(a) If, during the Term of Employment and during the period commencing three months prior to a Change in Control and ending on the eighteen (18)-month anniversary of the Change in Control (the “Change in Control Period”), Executive’s employment is terminated by the Company without Cause or Executive resigns for Good Reason, then, in lieu of the payments and benefits described in Section 7(e)(ii) through (iv) above and subject to Executive’s delivery to the Company of a Release that becomes effective and irrevocable in accordance with Section 7(h) hereof:

(i) Any unpaid Annual Bonus in respect of any completed fiscal year that has ended prior to the date of such termination, which amount shall be paid at such time annual bonuses are paid to other senior executives of the Company, but in no event later than the date that is 2½ months following the last day of the fiscal year in which such termination occurred;

(ii) Subject to satisfaction of the applicable performance objectives applicable for the fiscal year in which such termination occurs, an amount equal to (A) the Target Annual Bonus otherwise payable to Executive for the fiscal year in which such termination occurred, assuming Executive had remained employed through the applicable payment date, multiplied by (B) a fraction, the numerator of which is the number of days elapsed from the commencement of such fiscal year through the date of such termination and the denominator of which is 365 (or 366, as applicable), which amount shall be paid at such time annual bonuses are paid to other senior executives of the Company, but in no event later than the date that is 2½ months following the last day of the fiscal year in which such termination occurred;

(iii) An amount equal to [18] months of Base Salary, such amount to be paid in substantially equal payments over the [18]-month period following Executive’s termination of employment (such period, the “Severance Term”), and payable in accordance with the Company’s regular payroll practices; *provided*, however, if such termination occurs on or following any Change in Control (as defined in the equity documents), such amount shall instead be payable in a single lump sum within five (5) days of such termination;

(iv) To the extent the Company maintains a group health plan subject to the continuation health coverage requirements of Sections 601 through 609 of the Employee Retirement Income Security Act of 1974, as amended (“COBRA”), Executive is enrolled for coverage under such group health plan and subject to an election of COBRA continuation coverage by Executive (or Executive’s covered dependents in the case of Executive’s death), on the first regularly scheduled payroll date of each month during the Severance Term, payment of an amount equal to the difference between the monthly COBRA premium cost and the monthly contribution paid by active employees for the same coverage; provided, that the payments described in this clause (v) shall cease earlier than the expiration of the Severance Term in the event that Executive becomes eligible to receive any health benefits as a result of subsequent employment or service during the Severance Term: and

(v) The Company shall cause any unvested equity awards (including any stock options and restricted stock awards) subject to time-based vesting held by Executive as of the date of termination, to become fully vested and, if applicable, exercisable with respect to all of the shares of the Company’s Common Stock subject thereto

(b) In the event that (a) Executive is entitled to receive any payment, benefit or distribution of any type to or for the benefit of Executive, whether paid or payable, provided or to be provided, or distributed or distributable, pursuant to the terms of this Agreement or otherwise (collectively, the “Payments”), and (b) the net after-tax amount of such Payments, after Executive has paid all taxes due thereon (including, without limitation, taxes due under Section 4999 of the Code) is less than the net after-tax amount of all such Payments otherwise due to Executive in the aggregate, if such Payments were reduced to an amount equal to 2.99 times Executive’s “base amount” (as defined in Section 280G(b)(3) of the Code), then the aggregate amount of such Payments payable to Executive shall be reduced to an amount that will equal 2.99 times Executive’s base amount. To the extent such aggregate “parachute payment” (as defined in Section 280G(b)(2) of the Code) amounts are required to be so reduced, the parachute payment amounts due to Executive (but no non-parachute payment amounts) shall be reduced in the following order: (i) the parachute payments that are payable in cash shall be reduced (if necessary, to zero) with amounts that are payable last reduced first; (ii) payments and benefits due in respect of any equity, valued at full value (rather than accelerated value), with the highest values reduced first (as such values are determined under Treasury Regulation Section 1.280G-1, Q&A 24); and (iii) all other non-cash benefits not otherwise described in clause (ii) of this Section 8 reduced last.

Section 9. Restrictive Covenants

(a) General. Executive acknowledges and recognizes the highly competitive nature of the business of the Company Group, that access to Confidential Information renders Executive special and unique within the industry of the Company Group, and that Executive will have the opportunity to develop substantial relationships with existing and prospective clients, accounts, customers, consultants, contractors, investors, and strategic partners of the Company Group during the course of and as a result of Executive’s employment with the Company. In light of the foregoing, as a condition of Executive’s employment by the Company, and in consideration of Executive’s employment hereunder and the compensation and benefits provided herein, Executive acknowledges and agrees to the covenants contained in this Section 9. Executive further recognizes and acknowledges that the restrictions and limitations set forth in this Section 9 are reasonable and valid in geographical and temporal scope and in all other respects and are essential to protect the value of the business and assets of the Company Group.

(b) Confidential Information.

(i) Executive acknowledges that, during the Term of Employment, Executive will have access to information about the Company Group and that Executive's employment with the Company shall bring Executive into close contact with confidential and proprietary information of the Company Group. In recognition of the foregoing, Executive agrees, at all times during the Term of Employment and thereafter, to hold in confidence, and not to use, except for the benefit of the Company Group, or to disclose to any Person without written authorization of the Company, any Confidential Information.

(ii) Nothing in this Agreement shall prohibit or impede Executive from communicating, cooperating or filing a complaint with any U.S. federal, state or local governmental or law enforcement branch, agency or entity (collectively, a "Governmental Entity") with respect to possible violations of any U.S. federal, state or local law or regulation, or otherwise making disclosures to any Governmental Entity, in each case, that are protected under the whistleblower provisions of any such law or regulation, provided that in each case such communications and disclosures are consistent with applicable law. Executive understands and acknowledges that an individual shall not be held criminally or civilly liable under any Federal or State trade secret law for the disclosure of a trade secret that is made (A) in confidence to a Federal, State, or local government official or to an attorney solely for the purpose of reporting or investigating a suspected violation of law, or (B) in a complaint or other document filed in a lawsuit or other proceeding, if such filing is made under seal. Executive understands and acknowledges further that an individual who files a lawsuit for retaliation by an employer for reporting a suspected violation of law may disclose the trade secret to the attorney of the individual and use the trade secret information in the court proceeding, if the individual files any document containing the trade secret under seal; and does not disclose the trade secret, except pursuant to court order. Notwithstanding the foregoing, under no circumstance will Executive be authorized to disclose any information covered by attorney-client privilege or attorney work product of any member of the Company Group without prior written consent of Company's Board or other officer designated by the Board, unless otherwise permitted by the applicable whistleblower provisions of any law or regulation. Executive does not need the prior authorization of (or to give notice to) any member of the Company Group regarding any communication, disclosure, or activity permitted by this subsection.

(c) Assignment of Intellectual Property.

(i) Executive agrees that Executive will, without additional compensation, promptly make full written disclosure to the Company, and will hold in trust for the sole right and benefit of the Company all developments, original works of authorship, inventions, concepts, know-how, improvements, trade secrets, and similar proprietary rights, whether or not patentable or registrable under copyright or similar laws, which Executive may (or have previously) solely or jointly conceive or develop or reduce to practice, or cause to be conceived or developed or reduced to practice, during the Term of Employment, whether or not during regular working hours, provided they either (i) relate at the time of conception or reduction to practice of the invention to the business of any member of the Company Group, or actual or demonstrably anticipated research or development of any member of the Company Group; (ii) result from or relate to any work performed for any member of the Company Group; or (iii) are developed through the use of equipment, supplies, or facilities of any member of the Company Group, or any Confidential Information, or in consultation with personnel of any member of the Company Group (collectively referred to as "Developments"). Executive further acknowledges that all Developments made by Executive (solely or jointly with others) within the scope of and during the Term of Employment are "works made for hire" (to the greatest extent permitted by applicable law) for which Executive is, in part, compensated by Executive's Base Salary, unless regulated otherwise by law, but that, in the event any such Development is deemed not to be a work made for hire, Executive hereby assigns to the Company, or its designee, all Executive's right, title, and interest throughout the world in and to any such Development.

(ii) Executive agrees to assist the Company, or its designee, at the Company's expense, in every way to secure the rights of the Company Group in the Developments and any copyrights, patents, trademarks, service marks, database rights, domain names, mask work rights, moral rights, and other intellectual property rights relating thereto in any and all countries, including the disclosure to the Company of all pertinent information and data with respect thereto, the execution of all applications, specifications, oaths, assignments, recordations, and all other instruments that the Company shall deem necessary in order to apply for, obtain, maintain, and transfer such rights and in order to assign and convey to the Company Group the sole and exclusive right, title, and interest in and to such Developments, and any intellectual property and other proprietary rights relating thereto. Executive further agrees that Executive's obligation to execute or cause to be executed, when it is in Executive's power to do so, any such instrument or papers shall continue after the termination of the Term of Employment until the expiration of the last such intellectual property right to expire in any country of the world; *provided, however*, that the Company shall reimburse Executive for Executive's reasonable expenses incurred in connection with carrying out the foregoing obligation and, following termination of employment of the Term of Employment, shall compensate Executive for Executive's time incurred in connection with carrying out Executive's obligations under this Section 6(c)(ii) following such termination of at an hourly rate based upon Executive's Base Salary as of immediately prior to Executive's termination of employment. If the Company is unable because of Executive's mental or physical incapacity or unavailability for any other reason to secure Executive's signature to apply for or to pursue any application for any United States or foreign patents or copyright registrations covering Developments or original works of authorship assigned to the Company as above, then Executive hereby irrevocably designates and appoints the Company and its duly authorized officers and agents as Executive's agent and attorney in fact to act for and in Executive's behalf and stead to execute and file any such applications or records and to do all other lawfully permitted acts to further the application for, prosecution, issuance, maintenance, and transfer of letters patent or registrations thereon with the same legal force and effect as if originally executed by me. Executive hereby waives and irrevocably quitclaims to the Company any and all claims, of any nature whatsoever, that Executive now or hereafter have for past, present, or future infringement of any and all proprietary rights assigned to the Company.

(d) Non-Solicitation. During the Term of Employment and the Post-Termination Restricted Period, Executive will not directly or indirectly (i) solicit from any Protected Customer any business that is comparable or similar to any products or services provided by the Company; (ii) request or advise any Protected Customer to curtail, cancel, or withdraw its business from the Company; (iii) aid in any way any other entity in obtaining business from Protected Customer that is comparable or similar to any products or services provided by the Company; or (iv) otherwise interfere with any transaction, agreement, business relationship, and/or business opportunity between the Company and any customer or potential customer of the Company. "Protected Customer" means any person or entity who was or is a customer or potential customer of the Company at any time during Executive's employment with the Company and (a) with whom Executive dealt on behalf of the Company or a Company affiliate; (b) whose dealings with the Company or a Company affiliate were coordinated or supervised by Executive; (c) about whom Executive obtained Proprietary Information as a result of Executive's association with the Company or a Company affiliate; (d) to whom Executive provided services or (e) who received products or services the sale or provision of which resulted in compensation, commissions or earnings for Executive.

(e) Non-Interference. During the Term of Employment and the Post-Termination Restricted Period, Executive shall not, directly or indirectly for Executive's own account or for the account of any other Person, engage in Interfering Activities.

(f) Return of Documents. In the event of Executive's termination of employment hereunder for any reason, Executive shall deliver to the Company (and will not keep in Executive's possession, recreate, or deliver to anyone else) any and all Confidential Information and all other documents, materials, information, and property developed by Executive pursuant to Executive's employment hereunder or otherwise belonging to the Company Group.

(g) Independence; Severability; Blue Pencil. Each of the rights enumerated in this Section 9 shall be independent of the others and shall be in addition to and not in lieu of any other rights and remedies available to the Company Group at law or in equity. If any of the provisions of this Section 9 or any part of any of them is hereafter construed or adjudicated to be invalid or unenforceable, the same shall not affect the remainder of this Section 9, which shall be given full effect without regard to the invalid portions. If any of the covenants contained herein are held to be invalid or unenforceable because of the duration of such provisions or the area or scope covered thereby, each of the Company and Executive agree that the court making such determination shall have the power to reduce the duration, scope, and/or area of such provision to the maximum and/or broadest duration, scope, and/or area permissible by law, and in its reduced form said provision shall then be enforceable.

(h) Injunctive Relief. Executive expressly acknowledges that any breach or threatened breach of any of the terms and/or conditions set forth in this Section 9 may result in substantial, continuing, and irreparable injury to the members of the Company Group. Therefore, Executive hereby agrees that, in addition to any other remedy that may be available to the Company, any member of the Company Group shall be entitled to seek injunctive relief, specific performance, or other equitable relief by a court of appropriate jurisdiction in the event of any breach or threatened breach of the terms of this Section 9. Notwithstanding any other provision to the contrary, Executive acknowledges and agrees that the Post-Termination Restricted Period shall be tolled during any period of violation of any of the covenants in this Section 9 and during any other period required for litigation during which the Company or any other member of the Company Group seeks to enforce such covenants against Executive if it is ultimately determined that Executive was in breach of such covenants.

(i) Disclosure of Covenants. As long as it remains in effect, Executive will disclose the existence of the covenants contained in this Section 9 to any prospective employer, partner, co-venturer, investor, or lender prior to entering into an employment, partnership, or other business relationship with such Person or entity.

Section 10. Representations and Warranties of Executive.

Executive represents and warrants to the Company that:

(a) Executive is entering into this Agreement voluntarily and that Executive's employment hereunder and compliance with the terms and conditions hereof will not conflict with or result in the breach by Executive of any agreement to which Executive is a party or by which Executive may be bound;

(b) Executive has not violated, and in connection with Executive's employment with the Company will not violate, any non-solicitation, non-competition, or other similar covenant or agreement with any Person by which Executive is or may be bound;

(c) In connection with Executive's employment with the Company, Executive will not use any confidential or proprietary information Executive may have obtained in connection with employment or service with any prior service recipient; and

(d) Executive has not been terminated from any prior employer or service recipient, or otherwise disciplined in connection any such relationship, in connection with, or as a result of, any claim of workplace sexual harassment or sex or gender discrimination, and to Executive's knowledge, Executive has not been the subject of any investigation, formal allegation, civil or criminal complaint, charge, or settlement regarding workplace sexual harassment or sex or gender discrimination.

Section 11. **Indemnification.**

The Company agrees during and after Executive's employment to indemnify and hold harmless Executive to the fullest extent permitted by the organizational documents of the Company, or if greater, in accordance with applicable law regarding indemnification, for actions or inactions of Executive in accordance with Executive's performance of his duties under this Agreement, as an officer, director, employee or agent of the Company or any affiliate thereof or as a fiduciary of any benefit plan of any of the foregoing. The Company also agrees to provide Executive with directors' and officers' liability insurance coverage both during and after Executive's employment with regard to matters occurring during employment, or while serving on the governing body of the Company, or any affiliate thereof, which coverage will be at a level at least equal to the greatest level being maintained at such time for any current officer or director and shall continue until such time as suits can no longer be brought against Executive as a matter of law. Executive will be entitled to advancement of expenses from the Company or its applicable subsidiaries in connection with any claim in the same manner and to the same extent to which any other officer or director of the Company is entitled.

Section 12. **Taxes.**

The Company may withhold from any payments made under this Agreement or otherwise made in connection with Executive's employment hereunder, all applicable taxes, including but not limited to income, employment, and social insurance taxes, as shall be required by law. If any such taxes are paid or advanced by the Company on behalf of Executive, Executive shall remain responsible for, and shall repay, such amounts to the Company, promptly following notice thereof by the Company. Executive acknowledges and represents that the Company has not provided any tax advice to Executive in connection with this Agreement and that Executive has been advised by the Company to seek tax advice from Executive's own tax advisors regarding this Agreement and payments that may be made to Executive pursuant to this Agreement, including specifically, the application of the provisions of Section 409A of the Code to such payments.

Section 13. **Set Off; Mitigation.**

The Company's obligation to pay Executive the amounts provided and to make the arrangements provided hereunder shall not be subject to set-off, counterclaim, or recoupment of amounts owed by Executive to the Company or its affiliates. Executive shall not be required to mitigate the amount of any payment provided pursuant to this Agreement by seeking other employment or otherwise, and the amount of any payment provided for pursuant to this Agreement shall not be reduced by any compensation earned as a result of Executive's other employment or otherwise.

Section 14. **Additional Section 409A Provisions.**

Notwithstanding any provision in this Agreement to the contrary:

(a) Any payment otherwise required to be made hereunder to Executive at any date as a result of the termination of Executive's employment shall be delayed for such period of time as may be necessary to meet the requirements of Section 409A(a)(2)(B)(i) of the Code (the "Delay Period"). On the first business day following the expiration of the Delay Period, Executive shall be paid, in a single cash lump sum, an amount equal to the aggregate amount of all payments delayed pursuant to the preceding sentence, and any remaining payments not so delayed shall continue to be paid pursuant to the payment schedule set forth herein.

(b) Each payment in a series of payments hereunder shall be deemed to be a separate payment for purposes of Section 409A of the Code.

(c) Notwithstanding anything herein to the contrary, the payment (or commencement of a series of payments) hereunder of any nonqualified deferred compensation (within the meaning of Section 409A of the Code) upon a termination of employment shall be delayed until such time as Executive has also undergone a "separation from service" as defined in Treas. Reg. 1.409A-1(h), at which time such nonqualified deferred compensation (calculated as of the date of Executive's termination of employment hereunder) shall be paid (or commence to be paid) to Executive on the schedule set forth in Section 7 as if Executive had undergone such termination of employment (under the same circumstances) on the date of Executive's ultimate "separation from service."

(d) To the extent that any right to reimbursement of expenses or payment of any benefit in-kind under this Agreement constitutes nonqualified deferred compensation (within the meaning of Section 409A of the Code), (i) any such expense reimbursement shall be made by the Company no later than the last day of the taxable year following the taxable year in which such expense was incurred by Executive, (ii) the right to reimbursement or in-kind benefits shall not be subject to liquidation or exchange for another benefit, and (iii) the amount of expenses eligible for reimbursement or in-kind benefits provided during any taxable year shall not affect the expenses eligible for reimbursement or in-kind benefits to be provided in any other taxable year; *provided, however*, that the foregoing clause shall not be violated with regard to expenses reimbursed under any arrangement covered by Section 105(b) of the Code solely because such expenses are subject to a limit related to the period the arrangement is in effect.

(e) While the payments and benefits provided hereunder are intended to be structured in a manner to avoid the implication of any penalty taxes under Section 409A of the Code, and shall be interpreted in accordance therewith, in no event whatsoever shall any member of the Company Group be liable for any additional tax, interest, or penalties that may be imposed on Executive as a result of Section 409A of the Code or any damages for failing to comply with Section 409A of the Code (other than for withholding obligations or other obligations applicable to employers, if any, under Section 409A of the Code).

Section 15. Successors and Assigns; No Third-Party Beneficiaries.

(a) The Company. This Agreement shall inure to the benefit of the Company and its respective successors and assigns. Neither this Agreement nor any of the rights, obligations, or interests arising hereunder may be assigned by the Company to a Person (other than another member of the Company Group, or its or their respective successors) without Executive's prior written consent (which shall not be unreasonably withheld, delayed, or conditioned); *provided, however*, that in the event of a sale of all or substantially all of the assets of the Company or any direct or indirect division or subsidiary thereof to which Executive's employment primarily relates, the Company may provide that this Agreement will be assigned to, and assumed by, the acquiror of such assets, division or subsidiary, as applicable, without Executive's consent.

(b) Executive. Executive's rights and obligations under this Agreement shall not be transferable by Executive by assignment or otherwise, without the prior written consent of the Company; *provided, however*, that if Executive shall die, all amounts then payable to Executive hereunder shall be paid in accordance with the terms of this Agreement to Executive's devisee, legatee, or other designee, or if there be no such designee, to Executive's estate.

(c) No Third-Party Beneficiaries. Except as otherwise set forth in Section 7(c) or Section 15(b) hereof, nothing expressed or referred to in this Agreement will be construed to give any Person other than the Company, the other members of the Company Group, and Executive any legal or equitable right, remedy, or claim under or with respect to this Agreement or any provision of this Agreement.

Section 16. Waiver and Amendments.

Any waiver, alteration, amendment, or modification of any of the terms of this Agreement shall be valid only if made in writing and signed by each of the parties hereto; *provided, however*, that any such waiver, alteration, amendment, or modification must be consented to on the Company's behalf by the Board. No waiver by either of the parties hereto of their rights hereunder shall be deemed to constitute a waiver with respect to any subsequent occurrences or transactions hereunder unless such waiver specifically states that it is to be construed as a continuing waiver.

Section 17. Severability.

If any covenants or such other provisions of this Agreement are found to be invalid or unenforceable by a final determination of a court of competent jurisdiction, (a) the remaining terms and provisions hereof shall be unimpaired, and (b) the invalid or unenforceable term or provision hereof shall be deemed replaced by a term or provision that is valid and enforceable and that comes closest to expressing the intention of the invalid or unenforceable term or provision hereof.

Section 18. Governing Law; Waiver of Jury Trial; Arbitration.

THIS AGREEMENT IS GOVERNED BY AND IS TO BE CONSTRUED UNDER THE LAWS OF THE STATE OF OHIO. EACH PARTY TO THIS AGREEMENT ALSO HEREBY WAIVES ANY RIGHT TO TRIAL BY JURY IN CONNECTION WITH ANY SUIT, ACTION, OR PROCEEDING UNDER OR IN CONNECTION WITH THIS AGREEMENT. Except as permitted under Section 9 hereof, any controversy or claim arising out of or relating to this Agreement (or the breach thereof) shall be settled by final, binding and non-appealable arbitration in Cincinnati, Ohio by three arbitrators. The arbitration shall be conducted by JAMS pursuant to its Employment Arbitration Rules and Procedures and subject to JAMS Policy on Employment Arbitration in accordance with its Employment Arbitration Rules and Procedures then in effect. Judgment on the award rendered by the arbitrators may be entered in any court having jurisdiction thereof. The arbitrators shall have the authority to award any remedy or relief that a court of competent jurisdiction could order or grant, including, without limitation, the issuance of an injunction. However, either party may, without inconsistency with this arbitration provision, apply to any court having jurisdiction over such dispute or controversy and seek interim provisional, injunctive or other equitable relief until the arbitration award is rendered or the controversy is otherwise resolved, or permanent injunctive relief. Except as necessary in court proceedings to enforce this arbitration provision or an award rendered hereunder, to obtain interim relief or as otherwise required by law, neither a party nor an arbitrator may disclose the content or results of any arbitration hereunder without the prior written consent of the Company and Executive, other than general statements. The fees charged by JAMS and any arbitrator shall be split equally between the parties to the arbitration.

Section 19. Notices.

All notices and other communications required or permitted under this Agreement which are addressed as provided in this Section 19, (A) if delivered personally against proper receipt shall be effective upon delivery and (B) if sent (x) by certified or registered mail with postage prepaid or (y) by Federal Express or similar courier service with courier fees paid by the sender, shall be effective upon receipt. The parties hereto may from time to time change their respective addresses for the purpose of notices to that party by a similar notice specifying a new address, but no such change shall be deemed to have been given unless it is sent and received in accordance with this Section 19.

If to the Company:

Blue Water Vaccines, Inc.
201 E Fifth Street, Suite 1900

Cincinnati, Ohio 45202
Attn: Corporate Secretary

With copy to:

If to Executive:

To the most recent address of Executive set forth in the personnel records of the Company.

Section 20. Section Headings.

The headings of the sections and subsections of this Agreement are inserted for convenience only and shall not be deemed to constitute a part thereof or affect the meaning or interpretation of this Agreement or of any term or provision hereof.

Section 21. Entire Agreement.

This Agreement, together with any exhibits attached hereto, constitutes the entire understanding and agreement of the parties hereto regarding the employment of Executive. This Agreement supersedes all prior negotiations, discussions, correspondence, communications, understandings, and agreements between the parties relating to the subject matter of this Agreement, including, without limitation, the Prior Agreement.

Section 22. Survival of Operative Sections.

Upon any termination of Executive's employment, the provisions of Section 7 through Section 23 of this Agreement (together with any related definitions set forth on Appendix A) shall survive to the extent necessary to give effect to the provisions thereof.

Section 23. Counterparts.

This Agreement may be executed in two or more counterparts, each of which shall be deemed to be an original but all of which together shall constitute one and the same instrument. The execution of this Agreement may be by actual or facsimile signature.

[Signatures to appear on the following page.]

IN WITNESS WHEREOF, the undersigned have executed this Agreement as of the date first above written.

BLUE WATER VACCINES, INC.

By:
Title: Chairman

EXECUTIVE

Joseph Hernandez

APPENDIX A
Definitions

(a) “Accrued Obligations” shall mean (i) all accrued but unpaid Base Salary through the date of termination of Executive’s employment, (ii) any unpaid or unreimbursed expenses incurred in accordance with Section 6 hereof, (iii) an amount equal to Executive’s accrued, but unused vacation days, multiplied by the quotient of Executive’s Annual Salary divided by 2,087 hours) in accordance with the Company’s vacation policies in effect from time to time, and (iv) any benefits provided under the Company’s employee benefit plans upon a termination of employment, including rights with respect to equity participation under the Equity Documents, in accordance with the terms contained therein.

(b) “Board” shall mean the Board of Directors of the Company.

(c) “Business” shall mean any business activities related to the Company Group’s research and development of transformational vaccines to address significant health challenges, including but not limited to a universal influenza vaccine, or any other current or demonstrably planned business activities of the Company Group.

(d) “Business Relation” shall mean any current or prospective client, customer, licensee, supplier, or other business relation of the Company Group, or any such relation that was a client, customer, licensee or other business relation within the prior six (6) month period, in each case, with whom Executive transacted business or whose identity became known to Executive in connection with Executive’s employment hereunder.

(e) “Cause” shall mean (i) Executive’s act(s) of gross negligence or willful misconduct in the course of Executive’s employment hereunder, (ii) willful failure or refusal by Executive to perform in any material respect Executive’s duties or responsibilities, (iii) misappropriation (or attempted misappropriation) by Executive of any assets or business opportunities of the Company or any other member of the Company Group, (iv) embezzlement or fraud committed (or attempted) by Executive, or at Executive’s direction, (v) Executive’s conviction of, indictment for, or pleading “guilty” or “no contest” to, (x) a felony or (y) any other criminal charge that has, or could be reasonably expected to have, an adverse impact on the performance of Executive’s duties to the Company or any other member of the Company Group or otherwise result in material injury to the reputation or business of the Company or any other member of the Company Group, (vi) any material violation by Executive of the policies of the Company, including but not limited to those relating to sexual harassment or business conduct, and those otherwise set forth in the manuals or statements of policy of the Company, or (vii) Executive’s material breach of this Agreement.

(f) “Change in Control” shall mean the occurrence, in a single transaction or in a series of related transactions, of any one of the following events; provided, however, to the extent necessary to avoid adverse personal income tax consequences to Executive also constitutes a “Change in Control Event” under Treasury Regulation 1.409A-3(i)(5)(i):

(i) any Person becomes the owner, directly or indirectly, of securities of the Company representing more than 50% of the combined voting power of the Company’s then outstanding securities other than by virtue of a merger, consolidation or similar transaction. Notwithstanding the foregoing, a Change in Control shall not be deemed to occur (A) on account of the acquisition of securities of the Company directly from the Company, (B) on account of the acquisition of securities of the Company by an investor, any affiliate thereof or any other Person that acquires the Company’s securities in a transaction or series of related transactions the primary purpose of which is to obtain financing for the Company through the issuance of equity securities, or (C) solely because the level of ownership held by any Person (the “Subject Person”) exceeds the designated percentage threshold of the outstanding voting securities as a result of a repurchase or other acquisition of voting securities by the Company reducing the number of shares outstanding, provided that if a Change in Control would occur (but for the operation of this sentence) as a result of the acquisition of voting securities by the Company, and after such share acquisition, the Subject Person becomes the Owner of any additional voting securities that, assuming the repurchase or other acquisition had not occurred, increases the percentage of the then outstanding voting securities Owned by the Subject Person over the designated percentage threshold, then a Change in Control shall be deemed to occur;

(ii) there is consummated a merger, consolidation or similar transaction involving (directly or indirectly) the Company and, immediately after the consummation of such merger, consolidation or similar transaction, the stockholders of the Company immediately prior thereto do not own, directly or indirectly, either (A) outstanding voting securities representing more than 50% of the combined outstanding voting power of the surviving Entity in such merger, consolidation or similar transaction or (B) more than 50% of the combined outstanding voting power of the parent of the surviving Entity in such merger, consolidation or similar transaction, in each case in substantially the same proportions as their ownership of the outstanding voting securities of the Company immediately prior to such transaction;

(iii) the stockholders of the Company approve or the Board approves a plan of complete dissolution or liquidation of the Company, or a complete dissolution or liquidation of the Company shall otherwise occur, except for a liquidation into a parent corporation;

(iv) there is consummated a sale, lease, exclusive license or other disposition of all or substantially all of the consolidated assets of the Company and its subsidiaries, other than a sale, lease, license or other disposition of all or substantially all of the consolidated assets of the Company and its subsidiaries to an Entity, more than 50% of the combined voting power of the voting securities of

(g) “Code” shall mean the Internal Revenue Code of 1986, as amended, and the rules and regulations promulgated thereunder.

(h) “Company Group” shall mean the Company together with any of its direct or indirect subsidiaries.

(i) “Compensation Committee” shall mean the Compensation Committee of the Board.

(j) “Confidential Information” means information that the Company Group has or will develop, acquire, create, compile, discover, or own, that has value in or to the business of the Company Group that is not generally known and that the Company wishes to maintain as confidential. Confidential Information includes, but is not limited to, any and all non-public information that relates to the actual or anticipated business and/or products, research, or development of the Company Group, or to the Company Group’s technical data, trade secrets, or know-how, including, but not limited to, research, plans, or other information regarding the Company Group’s products or services and markets, customer lists, and customers (including, but not limited to, customers of the Company on whom Executive called or with whom Executive may become acquainted during the Term of Employment), software, developments, inventions, processes, formulas, technology, designs, drawings, engineering, hardware configuration information, marketing, finances, and other business information disclosed by the Company either directly or indirectly in writing, orally, or by drawings or inspection of premises, parts, equipment, or other Company Group property. Notwithstanding the foregoing, Confidential Information shall not include any of the foregoing items that have become publicly and widely known through no unauthorized disclosure by Executive or others who were under confidentiality obligations as to the item or items involved.

(k) “Disability” shall mean any physical or mental disability or infirmity of Executive that prevents the performance of Executive’s duties for a period of (i) ninety (90) consecutive days or (ii) one hundred eighty (180) non-consecutive days during any twelve (12) month period. Any question as to the existence, extent, or potentiality of Executive’s Disability upon which Executive and the Company cannot agree shall be determined by a qualified, independent physician selected by the Company and approved by Executive (which approval shall not be unreasonably withheld, delayed or conditioned). The determination of any such physician shall be final and conclusive for all purposes of this Agreement

(l) “Good Reason” shall mean, without Executive’s consent, (i) a material demotion in Executive’s title, duties, or responsibilities as set forth in Section 3 hereof, (ii) a material reduction in Base Salary set forth in Section 4(a) hereof or Target Annual Bonus opportunity set forth in Section 4(b) hereof (other than pursuant to an across-the-board reduction applicable to all similarly situated executives), or (iii) any other material breach of a provision of this Agreement by the Company (other than a provision that is covered by clause (i) or (ii) above). Executive acknowledges and agrees that Executive’s exclusive remedy in the event of any breach of this Agreement shall be to assert Good Reason pursuant to the terms and conditions of Section 7(f) hereof. Notwithstanding the foregoing, during the Term of Employment, in the event that the Board reasonably believes that Executive may have engaged in conduct that could constitute Cause hereunder, the Board may, in its sole and absolute discretion, suspend Executive from performing Executive’s duties hereunder, and in no event shall any such suspension constitute an event pursuant to which Executive may terminate employment with Good Reason or otherwise constitute a breach hereunder; *provided*, that no such suspension shall alter the Company’s obligations under this Agreement during such period of suspension.

(m) “Interfering Activities” shall mean (A) recruiting, encouraging, soliciting, or inducing, or in any manner attempting to recruit, encourage, solicit, or induce, any Person employed by, or providing consulting services to, any member of the Company Group to terminate such Person’s employment or services (or in the case of a consultant, materially reducing such services) with the Company Group, (B) hiring, or engaging any individual who was employed by or providing services to the Company Group within the six (6) month period prior to the date of such hiring or engagement, or (C) encouraging, soliciting, or inducing, or in any manner attempting to encourage, solicit, or induce, any Business Relation to cease doing business with or reduce the amount of business conducted with the Company Group, or in any way interfering with the relationship between any such Business Relation and the Company Group.

(n) “Person” shall mean any individual, corporation, partnership, limited liability company, joint venture, association, joint-stock company, trust (charitable or non-charitable), unincorporated organization, or other form of business entity.

(o) “Post-Termination Restricted Period” shall mean the period commencing on the date of the termination of the Employment Period for any reason and ending on the [●] month anniversary of such date of termination.

(p) “Release of Claims” shall mean the Release of Claims in substantially the same form attached hereto as Exhibit A (as the same may be revised from time to time by the Company upon the advice of counsel).

Appendix B

Permitted Activities

The Company acknowledges and agrees that Executive has notified the Company that he serves as an officer, director, member or manager of the following business entities, and agrees that Executive may continue to do so during the Term of this Agreement, notwithstanding anything in Section 3(b) or other provisions of the Agreement to the contrary:

Clarus Therapeutics, Inc.

Blue Water Acquisition Corp. II

This Appendix B may be amended to identify additional business entities as permitted activities only with the express prior written consent of the Board of the Company. The Board may, in its discretion, condition its consent on the other non-competing business or other organization acknowledging in writing that in the event any conflict of interest should arise between Executive's duties to the Company and Executive's duties to the other business or organization, Executive's duties to the Company shall take precedence, and that Executive will recuse himself from any discussions of or deliberations regarding competitive business opportunities on behalf of the other business or organization.

Executive shall not make use of any personnel or other resources of the Company in performing his duties for, any such non-competing business or other organization.

Executive shall provide the Board on a regular basis (not less than quarterly) with reports on his activities for the other business entities listed in this Appendix, in such manner and providing such information as the Board may request.

EXHIBIT A

RELEASE OF CLAIMS

As used in this Release of Claims (this “Release”), the term “claims” will include all claims, covenants, warranties, promises, undertakings, actions, suits, causes of action, obligations, debts, accounts, attorneys’ fees, judgments, losses, and liabilities, of whatsoever kind or nature, in law, in equity, or otherwise.

For and in consideration of the Severance Benefits, and other good and valuable consideration, I, [Executive] for and on behalf of myself and my heirs, administrators, executors, and assigns, effective the date on which this release becomes effective pursuant to its terms, do fully and forever release, remise, and discharge each of the Company and each of its direct and indirect subsidiaries and affiliates, together with their respective officers, directors, partners, shareholders, employees, and agents (collectively, the “Group”) from any and all claims whatsoever up to the date hereof that I had, may have had, or now have against the Group, for or by reason of any matter, cause, or thing whatsoever, including any claim arising out of or attributable to my employment or the termination of my employment with the Company, whether for tort, breach of express or implied employment contract, intentional infliction of emotional distress, wrongful termination, unjust dismissal, defamation, libel, or slander, or under any federal, state, or local law dealing with discrimination based on age, race, sex, national origin, handicap, religion, disability, or sexual orientation. This release of claims includes, but is not limited to, all claims arising under the Age Discrimination in Employment Act (“ADEA”), Title VII of the Civil Rights Act, the Americans with Disabilities Act, the Civil Rights Act of 1991, the Family Medical Leave Act, and the Equal Pay Act, each as may be amended from time to time, and all other federal, state, and local laws, the common law, and any other purported restriction on an employer’s right to terminate the employment of employees. The release contained herein is intended to be a general release of any and all claims to the fullest extent permissible by law.

I acknowledge and agree that as of the date I execute this Release, I have no knowledge of any facts or circumstances that give rise or could give rise to any claims under any of the laws listed in the preceding paragraph.

By executing this Release, I specifically release all claims relating to my employment and its termination under ADEA, a United States federal statute that, among other things, prohibits discrimination on the basis of age in employment and employee benefit plans.

Notwithstanding any provision of this Release to the contrary, by executing this Release, I am not releasing (i) any claims relating to my rights under Section 7 of the Employment Agreement, (ii) any claims that cannot be waived by law, or (iii) my right of indemnification as provided by, and in accordance with the terms of, the Company’s by-laws or a Company insurance policy providing such coverage, as any of such may be amended from time to time.

I expressly acknowledge and agree that I –

- Am able to read the language, and understand the meaning and effect, of this Release;
- Have no physical or mental impairment of any kind that has interfered with my ability to read and understand the meaning of this Release or its terms, and that I am not acting under the influence of any medication, drug, or chemical of any type in entering into this Release;

- Am specifically agreeing to the terms of the release contained in this Release because the Company has agreed to pay me the Severance Benefits in consideration for my agreement to accept it in full settlement of all possible claims I might have or ever had, and because of my execution of this Release;
- Acknowledge that, but for my execution of this Release, I would not be entitled to the Severance Benefits;
- Understand that, by entering into this Release, I do not waive rights or claims under ADEA that may arise after the date I execute this Release;
- Had or could have [twenty-one (21)][forty-five (45)]¹ days from the date of my termination of employment (the “Release Expiration Date”) in which to review and consider this Release, and that if I execute this Release prior to the Release Expiration Date, I have voluntarily and knowingly waived the remainder of the review period;
- Have not relied upon any representation or statement not set forth in this Release or my Employment Agreement made by the Company or any of its representatives;
- Was advised to consult with my attorney regarding the terms and effect of this Release; and
- Have signed this Release knowingly and voluntarily.

I represent and warrant that I have not previously filed, and to the maximum extent permitted by law agree that I will not file, a complaint, charge, or lawsuit against any member of the Group regarding any of the claims released herein. If, notwithstanding this representation and warranty, I have filed or file such a complaint, charge, or lawsuit, I agree that I shall cause such complaint, charge, or lawsuit to be dismissed with prejudice and shall pay any and all costs required in obtaining dismissal of such complaint, charge, or lawsuit, including without limitation the attorneys’ fees of any member of the Group against whom I have filed such a complaint, charge, or lawsuit. This paragraph shall not apply, however, to a claim of age discrimination under ADEA or to any non-waivable right to file a charge with the United States Equal Employment Opportunity Commission (the “EEOC”); *provided, however*, that if the EEOC were to pursue any claims relating to my employment with Company, I agree that I shall not be entitled to recover any monetary damages or any other remedies or benefits as a result and that this Release and the Severance Benefits will control as the exclusive remedy and full settlement of all such claims by me.

¹ To be selected based on whether applicable termination was “in connection with an exit incentive or other employment termination program” (as such phrase is defined in the Age Discrimination in Employment Act of 1967).

Nothing in this Release shall prohibit or impede me from communicating, cooperating or filing a complaint with any Governmental Entity with respect to possible violations of any U.S. federal, state or local law or regulation, or otherwise making disclosures to any Governmental Entity, in each case, that are protected under the whistleblower provisions of any such law or regulation; provided, that in each case such communications and disclosures are consistent with applicable law. I understand and acknowledge that an individual shall not be held criminally or civilly liable under any federal or state trade secret law for the disclosure of a trade secret that is made (1) in confidence to a federal, state, or local government official or to an attorney solely for the purpose of reporting or investigating a suspected violation of law, or (2) in a complaint or other document filed in a lawsuit or other proceeding, if such filing is made under seal. I understand and acknowledge further that an individual who files a lawsuit for retaliation by an employer for reporting a suspected violation of law may disclose the trade secret to the attorney of the individual and use the trade secret information in the court proceeding, if the individual files any document containing the trade secret under seal; and does not disclose the trade secret, except pursuant to court order. Except as otherwise provided in this paragraph or under applicable law, under no circumstance am I authorized to disclose any information covered by the Company's attorney-client privilege or attorney work product, or the Company's trade secrets, without the prior written consent of the Company's Board or another executive officer designated by the Board. I do not need the prior authorization of (or to give notice to) any member of the Company Group regarding any communication, disclosure, or activity permitted by this paragraph.

I hereby agree to waive any and all claims to re-employment with the Company or any other member of the Company Group (as defined in my Employment Agreement) and affirmatively agree not to seek further employment with the Company or any other member of the Company Group.

Notwithstanding anything contained herein to the contrary, this Release will not become effective or enforceable prior to the expiration of the period of seven (7) calendar days following the date of its execution by me (the "Revocation Period"), during which time I may revoke my acceptance of this Release by notifying the Company and the Board of Directors of the Company, in writing, delivered to the Company at its principal executive office, marked for the attention of its Chair. To be effective, such revocation must be received by the Company no later than 11:59 p.m. on the seventh (7th) calendar day following the execution of this Release. Provided that the Release is executed and I do not revoke it during the Revocation Period, the eighth (8th) day following the date on which this Release is executed shall be its effective date. I acknowledge and agree that if I revoke this Release during the Revocation Period, this Release will be null and void and of no effect, and neither the Company nor any other member of the Company will have any obligations to pay me the Severance Benefits.

The provisions of this Release shall be binding upon my heirs, executors, administrators, legal personal representatives, and assigns. If any provision of this Release shall be held by any court of competent jurisdiction to be illegal, void, or unenforceable, such provision shall be of no force or effect. The illegality or unenforceability of such provision, however, shall have no effect upon and shall not impair the enforceability of any other provision of this Release.

EXCEPT WHERE PREEMPTED BY FEDERAL LAW, THIS RELEASE SHALL BE GOVERNED BY AND CONSTRUED IN ACCORDANCE WITH FEDERAL LAW AND THE LAWS OF THE STATE OF OHIO, APPLICABLE TO AGREEMENTS MADE AND TO BE PERFORMED IN THAT STATE WITHOUT GIVING EFFECT TO THE PRINCIPLES OF CONFLICTS OF LAWS. I HEREBY WAIVE ANY RIGHT TO TRIAL BY JURY IN CONNECTION WITH ANY SUIT, ACTION, OR PROCEEDING UNDER OR IN CONNECTION WITH THIS RELEASE.

Capitalized terms used, but not defined herein, shall have the meanings ascribed to such terms in my Employment Agreement, dated July ____, 2021, with the Company (the "Employment Agreement").

[Executive]

Date:

EMPLOYMENT AGREEMENT

This EMPLOYMENT AGREEMENT (the “Agreement”) is made and entered into as of [•], 2021 by and between Blue Water Vaccines, Inc., a Delaware corporation (the “Company”) and Erin Henderson (“Executive”).

WHEREAS, Executive is currently employed by the Company as its Chief Business Officer; and

WHEREAS, Executive is a party to a prior consulting agreement with the Company, dated September 1, 2020 (the “Prior Agreement”); and

WHEREAS, the Company desires to employ Executive and to enter into this Agreement embodying the terms of such employment, and Executive desires to enter into this Agreement and to accept such employment, subject to the terms and provisions of this Agreement.

NOW, THEREFORE, in consideration of the promises and mutual covenants contained herein and for other good and valuable consideration, the receipt and sufficiency of which are mutually acknowledged, the Company and Executive hereby agree as follows:

Section 1. **Definitions.** Capitalized terms not otherwise defined in this Agreement shall have the meaning set forth on Appendix A, attached hereto.

Section 2. **Acceptance and Term of Employment.**

The Company agrees to employ Executive, and Executive agrees to serve the Company, on the terms and conditions set forth herein. Executive’s employment under the terms of this Agreement shall commence on the date hereof and continue until terminated as provided in Section 7 hereof (the “Term of Employment”), except where terms are expressly effective upon the closing date of the underwritten public offering of the Company’s common stock (the “IPO Date”).

Section 3. **Position, Duties, and Responsibilities; Place of Performance.**

(a) Position, Duties, and Responsibilities. During the Term of Employment, Executive shall be employed and serve as the Chief Business Officer of the Company, reporting directly to the Chief Executive Officer and to the Board of Directors of the Company, and having such duties and responsibilities commensurate with such position as may be assigned by the Chief Executive Officer and the Board of Directors of the Company. Executive also agrees to serve as an officer and/or director of any member of the Company Group, in each case without additional compensation.

(b) **Performance.** Executive shall be employed with the Company on a full-time basis, and shall devote her full business time, attention, skill, and best efforts to the satisfactory performance of Executive's duties under this Agreement (excluding periods of vacation and sick leave). Except as provided below, Executive shall not engage in any other business or occupation during the Term of Employment, including, without limitation, any activity that (x) conflicts with the interests of the Company or any other member of the Company Group, (y) interferes with the proper and efficient performance of Executive's duties for the Company, or (z) interferes with Executive's exercise of judgment in the Company's best interests. Notwithstanding the foregoing, nothing herein shall preclude Executive from (i) serving, with the prior written consent of the Board, as a member of the board of directors or advisory board (or the equivalent in the case of a non-corporate entity) of non-competing for-profit businesses and charitable organizations, (ii) serving as an officer or managing member of the of the non-competing for-profit businesses listed on Appendix B to this Agreement, (iii) engaging in charitable activities and community affairs, and (iv) managing Executive's personal investments and affairs; *provided, however*, that the activities set out in clauses (i), (ii), and (iii) shall be limited by Executive so as not to materially interfere, individually or in the aggregate, with the performance of Executive's duties and responsibilities hereunder.

(c) **Principal Place of Employment.** Executive's principal place of business shall be in [Cincinnati, Ohio], although Executive understands and agrees that Executive may be required to travel from time to time for business reasons. The Company will permit Executive to work remotely from Executive's personal residence, although Executive understands and agrees that Executive may be required to work from, or travel to, the Company's offices from time to time as needed in connection with the performance of Executive's duties and responsibilities hereunder.

Section 4. **Compensation.**

During the Term of Employment, Executive shall be entitled to the following compensation:

(a) **Base Salary.** Executive shall be paid an annualized Base Salary (the "Base Salary"), payable in accordance with the regular payroll practices of the Company, of \$[120,000] per year, or, effective on and after the IPO Date, \$325,000 per year, with such additional increases, if any, as may be approved in writing by the Compensation Committee. The Compensation Committee will review Executive's Base Salary for increases not less than annually.

(b) **Annual Bonus.** Executive shall be eligible for an annual incentive bonus award determined by the Compensation Committee in respect of each fiscal year during the Term of Employment (the "Annual Bonus"). The target Annual Bonus for each fiscal year ending on or after the IPO Date shall be [30]% of Base Salary (the "Target Annual Bonus"), with the actual Annual Bonus payable being based upon the level of achievement of annual Company and individual performance objectives for such fiscal year, as determined by the Compensation Committee and communicated to Executive. The Annual Bonus shall otherwise be subject to the terms and conditions of the annual bonus plan adopted by the Board or the Compensation Committee under which bonuses are generally payable to senior executives of the Company, as in effect from time to time. The Annual Bonus shall be paid to Executive at the same time as annual bonuses are generally payable to other senior executives of the Company subject to Executive's continuous employment through the applicable payment date (subject to Section 7 below).

(c) **Equity Participation.** In connection with Executive's employment hereunder, Executive shall be entitled to participate in the Company's equity incentive plan, as in effect from time to time, pursuant to the terms of such plan, an award agreement and such other documents Executive is required to execute pursuant to the terms of such plan (the plan, the award agreement, and such other documents collectively, the "Equity Documents"). Executive's equity participation shall be exclusively governed by the terms of the Equity Documents.

Section 5. **Employee Benefits.**

During the Term of Employment, Executive shall be entitled to participate in health, insurance, retirement, and other benefits provided generally to senior executives of the Company as subject to any applicable eligibility requirements (including such wait periods and other minimum service requirements as may be imposed by the terms of such benefit plans). Executive shall also be entitled to the same number of holidays, vacation days, and sick days, as well as any other benefits, in each case as are generally allowed to similarly situated senior executives of the Company in accordance with the Company policy as in effect from time to time. Nothing contained herein shall be construed to limit the Company's ability to amend, suspend, or terminate any employee benefit plan or policy at any time, and the right to do so is expressly reserved.

Section 6. **Reimbursement of Business Expenses.**

Executive is authorized to incur reasonable business expenses in carrying out Executive's duties and responsibilities under this Agreement, and the Company shall promptly reimburse Executive for all such reasonable business expenses, subject to documentation in accordance with the Company's policy, as in effect from time to time. In addition, to the extent Executive primarily works remotely from Executive's personal residence, the Company shall reimburse Executive for reasonable travel expenses incurred by Executive in connection with Executive's travel to and from the Company's offices in connection with carrying out Executive's duties and responsibilities under this Agreement subject to documentation in accordance with the Company's policy, as in effect from time to time. The Company shall be entitled to impute income to Executive in connection with any reimbursements or other benefits provided under this Section 4, and withhold from any and all amounts payable under this Section 4 as may be required to be withheld pursuant to any applicable law or regulation.

Section 7. **Termination of Employment.**

(a) General. The Term of Employment, and Executive's employment hereunder, shall terminate upon the earliest to occur of (i) Executive's death, (ii) a termination by reason of a Disability, (iii) a termination by the Company with or without Cause, and (iv) a termination by Executive with or without Good Reason. Except as otherwise expressly required by law (e.g., COBRA) or as specifically provided herein, all of Executive's rights to Base Salary, Annual Bonus, employee benefits and other compensatory amounts hereunder (if any) shall cease upon the termination of Executive's employment hereunder.

(b) Deemed Resignation. Upon any termination of Executive's employment for any reason, except as may otherwise be requested by the Company in writing and agreed upon in writing by Executive, Executive shall be deemed to have resigned from any and all directorships, committee memberships, and any other positions Executive holds with the Company or any other member of the Company Group.

(c) Termination Due to Death or Disability. Executive's employment shall terminate automatically upon Executive's death. The Company may terminate Executive's employment immediately upon the occurrence of a Disability, such termination to be effective upon Executive's receipt of written notice of such termination. Upon Executive's death or in the event that Executive's employment is terminated due to Executive's Disability, Executive or Executive's estate or Executive's beneficiaries, as the case may be, shall be entitled to:

(i) The Accrued Obligations;

(ii) Any unpaid Annual Bonus in respect of any completed fiscal year that has ended prior to the date of such termination, which amount shall be paid at such time annual bonuses are paid to other senior executives of the Company, but in no event later than the date that is 2½ months following the last day of the fiscal year in which such termination occurred;

(iii) An amount equal to (A) the Target Annual Bonus multiplied by (B) a fraction, the numerator of which is the number of days elapsed from the commencement of the fiscal year in which such termination occurs through the date of such termination and the denominator of which is 365 (or 366, as applicable), which amount shall be paid within thirty (30) days of Executive's termination date; and

(iv) To the extent the Company maintains a group health plan subject to the continuation health coverage requirements of Sections 601 through 609 of the Employee Retirement Income Security Act of 1974, as amended ("COBRA"), Executive is enrolled for coverage under such group health plan and subject to an election of COBRA continuation coverage by Executive (or Executive's covered dependents in the case of Executive's death), on the first regularly scheduled payroll date of each month during the twelve (12) month period immediately following the date Executive's termination occurred, payment of an amount equal to the difference between the monthly COBRA premium cost and the monthly contribution paid by active employees for the same coverage.

Following Executive's death or a termination of Executive's employment by reason of a Disability, except as set forth in this Section 7(c), Executive shall have no further rights to any compensation or any other benefits under this Agreement.

(d) Termination by the Company for Cause.

(i) The Company may terminate Executive's employment at any time for Cause, effective upon delivery to Executive of written notice of such termination; *provided, however*, that with respect to any Cause termination relying on clause (ii), (vi) or (vii) of the definition of Cause, to the extent that such act or acts or failure or failures to act are curable, Executive shall be given not less than ten (10) business days' written notice by the Board of the Company's intention to terminate Executive for Cause, such notice to state in detail the particular act or acts or failure or failures to act that constitute the grounds on which the proposed termination for Cause is based, and such termination shall be effective at the expiration of such ten (10) business day notice period unless Executive has fully cured such act or acts or failure or failures to act that give rise to Cause during such period.

(ii) In the event that the Company terminates Executive's employment for Cause, Executive shall be entitled only to the Accrued Obligations. Following such termination of Executive's employment for Cause, except as set forth in this Section 7(d)(ii), Executive shall have no further rights to any compensation or any other benefits under this Agreement.

(e) Termination by the Company without Cause. The Company may terminate Executive's employment at any time without Cause, effective upon delivery to Executive of written notice of such termination. In the event that Executive's employment is terminated by the Company without Cause (other than due to death or Disability), Executive shall be entitled to:

(i) The Accrued Obligations;

(ii) Any unpaid Annual Bonus in respect of any completed fiscal year that has ended prior to the date of such termination, which amount shall be paid at such time annual bonuses are paid to other senior executives of the Company, but in no event later than the date that is 2½ months following the last day of the fiscal year in which such termination occurred;

(iii) Subject to satisfaction of the applicable performance objectives applicable for the fiscal year in which such termination occurs, an amount equal to (A) the Target Annual Bonus otherwise payable to Executive for the fiscal year in which such termination occurred, assuming Executive had remained employed through the applicable payment date, multiplied by (B) a fraction, the numerator of which is the number of days elapsed from the commencement of such fiscal year through the date of such termination and the denominator of which is 365 (or 366, as applicable), which amount shall be paid at such time annual bonuses are paid to other senior executives of the Company, but in no event later than the date that is 2½ months following the last day of the fiscal year in which such termination occurred;

(iv) An amount equal to nine (9) months of Base Salary, such amount to be paid in substantially equal payments over the nine (9)-month period following Executive's termination of employment (such period, the "Severance Term"), and payable in accordance with the Company's regular payroll practices; *provided, however*, if such termination occurs on or following any Change in Control (as defined in the equity documents), such amount shall instead be payable in a single lump sum within five (5) days of such termination; and

(v) To the extent the Company maintains a group health plan subject to the continuation health coverage requirements of Sections 601 through 609 of the Employee Retirement Income Security Act of 1974, as amended ("COBRA"), Executive is enrolled for coverage under such group health plan and subject to an election of COBRA continuation coverage by Executive (or Executive's covered dependents in the case of Executive's death), on the first regularly scheduled payroll date of each month during the Severance Term, payment of an amount equal to the difference between the monthly COBRA premium cost and the monthly contribution paid by active employees for the same coverage; *provided*, that the payments described in this clause (v) shall cease earlier than the expiration of the Severance Term in the event that Executive becomes eligible to receive any health benefits as a result of subsequent employment or service during the Severance Term;

Notwithstanding the foregoing, the payments and benefits described in clauses (ii) through (v) above shall immediately terminate, and the Company shall have no further obligations to Executive with respect thereto, in the event that Executive breaches any provision set forth in Section 9 hereof. Following such termination of Executive's employment by the Company without Cause, except as set forth in this Section 7(e), Executive shall have no further rights to any compensation or any other benefits under this Agreement.

(f) Termination by Executive with Good Reason. Executive may terminate Executive's employment with Good Reason by providing the Company thirty (30) days' written notice setting forth in reasonable specificity the event that constitutes Good Reason, which written notice, to be effective, must be provided to the Company within sixty (60) days of the occurrence of such event. During such thirty (30) day notice period, the Company shall have a cure right (if curable), and if not cured within such period, Executive's termination will be effective upon the expiration of such cure period, and Executive shall be entitled to the same payments and benefits as provided in Section 7(e) hereof for a termination by the Company without Cause, subject to the same conditions on payment and benefits as described in Section 7(e) hereof. Following such termination of Executive's employment by Executive with Good Reason, except as set forth in this Section 7(f), Executive shall have no further rights to any compensation or any other benefits under this Agreement.

(g) Termination by Executive without Good Reason. Executive may terminate Executive's employment without Good Reason by providing the Company sixty (60) days' written notice of such termination. In the event of a termination of employment by Executive under this Section 7(g), Executive shall be entitled only to the Accrued Obligations. In the event of termination of Executive's employment under this Section 7(g), the Company may, in its sole and absolute discretion, by written notice accelerate such date of termination without changing the characterization of such termination as a termination by Executive without Good Reason. Following such termination of Executive's employment by Executive without Good Reason, except as set forth in this Section 7(g), Executive shall have no further rights to any compensation or any other benefits under this Agreement.

(h) Release. Notwithstanding any provision herein to the contrary, the payment of any amount or provision of any benefit pursuant to subsection (e) or (f) of this Section 7 other than the Accrued Obligations (collectively, the "Severance Benefits") shall be conditioned upon Executive's execution, delivery to the Company, and non-revocation of the Release of Claims (and the expiration of any revocation period contained in such Release of Claims) within sixty (60) days following the date of Executive's termination of employment hereunder (the "Release Execution Period"). If Executive fails to execute the Release of Claims in such a timely manner so as to permit any revocation period to expire prior to the end of such sixty (60) day period, or timely revokes Executive's acceptance of such release following its execution, Executive shall not be entitled to any of the Severance Benefits. No portion of the Severance Benefits (other than Accrued Obligations) shall be paid until the Release of Claims has become effective and all such amounts shall commence to be paid on the first regular payroll date of the Company after the Release of Claims has become effective; *provided*, that, if the Release Execution Period overlaps two calendar years, the first payment shall not be made sooner than the first day of the second year, and shall include any missed payments.

Section 8. Change of Control.

(a) If, during the Term of Employment and during the period commencing three months prior to a Change in Control and ending on the eighteen (18)-month anniversary of the Change in Control (the “Change in Control Period”), Executive’s employment is terminated by the Company without Cause or Executive resigns for Good Reason, then, in lieu of the payments and benefits described in Section 7(e)(ii) through (v) above and subject to Executive’s delivery to the Company of a Release that becomes effective and irrevocable in accordance with Section 7(h) hereof:

(i) Any unpaid Annual Bonus in respect of any completed fiscal year that has ended prior to the date of such termination, which amount shall be paid at such time annual bonuses are paid to other senior executives of the Company, but in no event later than the date that is 2½ months following the last day of the fiscal year in which such termination occurred;

(ii) Subject to satisfaction of the applicable performance objectives applicable for the fiscal year in which such termination occurs, an amount equal to (A) the Target Annual Bonus otherwise payable to Executive for the fiscal year in which such termination occurred, assuming Executive had remained employed through the applicable payment date, multiplied by (B) 1.0, multiplied by (C) a fraction, the numerator of which is the number of days elapsed from the commencement of such fiscal year through the date of such termination and the denominator of which is 365 (or 366, as applicable), which amount shall be paid at such time annual bonuses are paid to other senior executives of the Company, but in no event later than the date that is 2½ months following the last day of the fiscal year in which such termination occurred;

(iii) An amount equal to twelve (12) months of Base Salary, such amount to be paid in substantially equal payments over the 12-month period following Executive’s termination of employment (such period, the “Severance Term”), and payable in accordance with the Company’s regular payroll practices; provided, however, if such termination occurs on or following any Change in Control (as defined in the equity documents), such amount shall instead be payable in a single lump sum within five (5) days of such termination;

(iv) To the extent the Company maintains a group health plan subject to the continuation health coverage requirements of Sections 601 through 609 of the Employee Retirement Income Security Act of 1974, as amended (“COBRA”), Executive is enrolled for coverage under such group health plan and subject to an election of COBRA continuation coverage by Executive (or Executive’s covered dependents in the case of Executive’s death), on the first regularly scheduled payroll date of each month during the Severance Term, payment of an amount equal to the difference between the monthly COBRA premium cost and the monthly contribution paid by active employees for the same coverage; provided, that the payments described in this clause (v) shall cease earlier than the expiration of the Severance Term in the event that Executive becomes eligible to receive any health benefits as a result of subsequent employment or service during the Severance Term: and

(v) The Company shall cause any unvested equity awards (including any stock options and restricted stock awards) subject to time-based vesting held by Executive as of the date of termination, to become fully vested and, if applicable, exercisable with respect to all of the shares of the Company’s Common Stock subject thereto

(b) In the event that (a) Executive is entitled to receive any payment, benefit or distribution of any type to or for the benefit of Executive, whether paid or payable, provided or to be provided, or distributed or distributable, pursuant to the terms of this Agreement or otherwise (collectively, the “Payments”), and (b) the net after-tax amount of such Payments, after Executive has paid all taxes due thereon (including, without limitation, taxes due under Section 4999 of the Code) is less than the net after-tax amount of all such Payments otherwise due to Executive in the aggregate, if such Payments were reduced to an amount equal to 2.99 times Executive’s “base amount” (as defined in Section 280G(b)(3) of the Code), then the aggregate amount of such Payments payable to Executive shall be reduced to an amount that will equal 2.99 times Executive’s base amount. To the extent such aggregate “parachute payment” (as defined in Section 280G(b)(2) of the Code) amounts are required to be so reduced, the parachute payment amounts due to Executive (but no non-parachute payment amounts) shall be reduced in the following order: (i) the parachute payments that are payable in cash shall be reduced (if necessary, to zero) with amounts that are payable last reduced first; (ii) payments and benefits due in respect of any equity, valued at full value (rather than accelerated value), with the highest values reduced first (as such values are determined under Treasury Regulation Section 1.280G-1, Q&A 24); and (iii) all other non-cash benefits not otherwise described in clause (ii) of this Section 8 reduced last.

Section 9. Restrictive Covenants

(a) General. Executive acknowledges and recognizes the highly competitive nature of the business of the Company Group, that access to Confidential Information renders Executive special and unique within the industry of the Company Group, and that Executive will have the opportunity to develop substantial relationships with existing and prospective clients, accounts, customers, consultants, contractors, investors, and strategic partners of the Company Group during the course of and as a result of Executive’s employment with the Company. In light of the foregoing, as a condition of Executive’s employment by the Company, and in consideration of Executive’s employment hereunder and the compensation and benefits provided herein, Executive acknowledges and agrees to the covenants contained in this Section 9. Executive further recognizes and acknowledges that the restrictions and limitations set forth in this Section 9 are reasonable and valid in geographical and temporal scope and in all other respects and are essential to protect the value of the business and assets of the Company Group.

(b) Confidential Information.

(i) Executive acknowledges that, during the Term of Employment, Executive will have access to information about the Company Group and that Executive’s employment with the Company shall bring Executive into close contact with confidential and proprietary information of the Company Group. In recognition of the foregoing, Executive agrees, at all times during the Term of Employment and thereafter, to hold in confidence, and not to use, except for the benefit of the Company Group, or to disclose to any Person without written authorization of the Company, any Confidential Information.

(ii) Nothing in this Agreement shall prohibit or impede Executive from communicating, cooperating or filing a complaint with any U.S. federal, state or local governmental or law enforcement branch, agency or entity (collectively, a “Governmental Entity”) with respect to possible violations of any U.S. federal, state or local law or regulation, or otherwise making disclosures to any Governmental Entity, in each case, that are protected under the whistleblower provisions of any such law or regulation, provided that in each case such communications and disclosures are consistent with applicable law. Executive understands and acknowledges that an individual shall not be held criminally or civilly liable under any Federal or State trade secret law for the disclosure of a trade secret that is made (A) in confidence to a Federal, State, or local government official or to an attorney solely for the purpose of reporting or investigating a suspected violation of law, or (B) in a complaint or other document filed in a lawsuit or other proceeding, if such filing is made under seal. Executive understands and acknowledges further that an individual who files a lawsuit for retaliation by an employer for reporting a suspected violation of law may disclose the trade secret to the attorney of the individual and use the trade secret information in the court proceeding, if the individual files any document containing the trade secret under seal; and does not disclose the trade secret, except pursuant to court order. Notwithstanding the foregoing, under no circumstance will Executive be authorized to disclose any information covered by attorney-client privilege or attorney work product of any member of the Company Group without prior written consent of Company’s Board or other officer designated by the Board, unless otherwise permitted by the applicable whistleblower provisions of any law or regulation. Executive does not need the prior authorization of (or to give notice to) any member of the Company Group regarding any communication, disclosure, or activity permitted by this subsection.

(c) Assignment of Intellectual Property.

(i) Executive agrees that Executive will, without additional compensation, promptly make full written disclosure to the Company, and will hold in trust for the sole right and benefit of the Company all developments, original works of authorship, inventions, concepts, know-how, improvements, trade secrets, and similar proprietary rights, whether or not patentable or registrable under copyright or similar laws, which Executive may (or have previously) solely or jointly conceive or develop or reduce to practice, or cause to be conceived or developed or reduced to practice, during the Term of Employment, whether or not during regular working hours, provided they either (i) relate at the time of conception or reduction to practice of the invention to the business of any member of the Company Group, or actual or demonstrably anticipated research or development of any member of the Company Group; (ii) result from or relate to any work performed for any member of the Company Group; or (iii) are developed through the use of equipment, supplies, or facilities of any member of the Company Group, or any Confidential Information, or in consultation with personnel of any member of the Company Group (collectively referred to as “Developments”). Executive further acknowledges that all Developments made by Executive (solely or jointly with others) within the scope of and during the Term of Employment are “works made for hire” (to the greatest extent permitted by applicable law) for which Executive is, in part, compensated by Executive’s Base Salary, unless regulated otherwise by law, but that, in the event any such Development is deemed not to be a work made for hire, Executive hereby assigns to the Company, or its designee, all Executive’s right, title, and interest throughout the world in and to any such Development.

(ii) Executive agrees to assist the Company, or its designee, at the Company's expense, in every way to secure the rights of the Company Group in the Developments and any copyrights, patents, trademarks, service marks, database rights, domain names, mask work rights, moral rights, and other intellectual property rights relating thereto in any and all countries, including the disclosure to the Company of all pertinent information and data with respect thereto, the execution of all applications, specifications, oaths, assignments, recordations, and all other instruments that the Company shall deem necessary in order to apply for, obtain, maintain, and transfer such rights and in order to assign and convey to the Company Group the sole and exclusive right, title, and interest in and to such Developments, and any intellectual property and other proprietary rights relating thereto. Executive further agrees that Executive's obligation to execute or cause to be executed, when it is in Executive's power to do so, any such instrument or papers shall continue after the termination of the Term of Employment until the expiration of the last such intellectual property right to expire in any country of the world; *provided, however*, that the Company shall reimburse Executive for Executive's reasonable expenses incurred in connection with carrying out the foregoing obligation and, following termination of employment of the Term of Employment, shall compensate Executive for Executive's time incurred in connection with carrying out Executive's obligations under this Section 6(c)(ii) following such termination of at an hourly rate based upon Executive's Base Salary as of immediately prior to Executive's termination of employment. If the Company is unable because of Executive's mental or physical incapacity or unavailability for any other reason to secure Executive's signature to apply for or to pursue any application for any United States or foreign patents or copyright registrations covering Developments or original works of authorship assigned to the Company as above, then Executive hereby irrevocably designates and appoints the Company and its duly authorized officers and agents as Executive's agent and attorney in fact to act for and in Executive's behalf and stead to execute and file any such applications or records and to do all other lawfully permitted acts to further the application for, prosecution, issuance, maintenance, and transfer of letters patent or registrations thereon with the same legal force and effect as if originally executed by me. Executive hereby waives and irrevocably quitclaims to the Company any and all claims, of any nature whatsoever, that Executive now or hereafter have for past, present, or future infringement of any and all proprietary rights assigned to the Company.

(d) Non-Solicitation. During the Term of Employment and the Post-Termination Restricted Period, Executive will not directly or indirectly (i) solicit from any Protected Customer any business that is comparable or similar to any products or services provided by the Company; (ii) request or advise any Protected Customer to curtail, cancel, or withdraw its business from the Company; (iii) aid in any way any other entity in obtaining business from Protected Customer that is comparable or similar to any products or services provided by the Company; or (iv) otherwise interfere with any transaction, agreement, business relationship, and/or business opportunity between the Company and any customer or potential customer of the Company. "Protected Customer" means any person or entity who was or is a customer or potential customer of the Company at any time during Executive's employment with the Company and (a) with whom Executive dealt on behalf of the Company or a Company affiliate; (b) whose dealings with the Company or a Company affiliate were coordinated or supervised by Executive; (c) about whom Executive obtained Proprietary Information as a result of Executive's association with the Company or a Company affiliate; (d) to whom Executive provided services or (e) who received products or services the sale or provision of which resulted in compensation, commissions or earnings for Executive.

(e) Non-Interference. During the Term of Employment and the Post-Termination Restricted Period, Executive shall not, directly or indirectly for Executive's own account or for the account of any other Person, engage in Interfering Activities.

(f) Return of Documents. In the event of Executive's termination of employment hereunder for any reason, Executive shall deliver to the Company (and will not keep in Executive's possession, recreate, or deliver to anyone else) any and all Confidential Information and all other documents, materials, information, and property developed by Executive pursuant to Executive's employment hereunder or otherwise belonging to the Company Group.

(g) Independence; Severability; Blue Pencil. Each of the rights enumerated in this Section 9 shall be independent of the others and shall be in addition to and not in lieu of any other rights and remedies available to the Company Group at law or in equity. If any of the provisions of this Section 9 or any part of any of them is hereafter construed or adjudicated to be invalid or unenforceable, the same shall not affect the remainder of this Section 9, which shall be given full effect without regard to the invalid portions. If any of the covenants contained herein are held to be invalid or unenforceable because of the duration of such provisions or the area or scope covered thereby, each of the Company and Executive agree that the court making such determination shall have the power to reduce the duration, scope, and/or area of such provision to the maximum and/or broadest duration, scope, and/or area permissible by law, and in its reduced form said provision shall then be enforceable.

(h) Injunctive Relief. Executive expressly acknowledges that any breach or threatened breach of any of the terms and/or conditions set forth in this Section 9 may result in substantial, continuing, and irreparable injury to the members of the Company Group. Therefore, Executive hereby agrees that, in addition to any other remedy that may be available to the Company, any member of the Company Group shall be entitled to seek injunctive relief, specific performance, or other equitable relief by a court of appropriate jurisdiction in the event of any breach or threatened breach of the terms of this Section 9. Notwithstanding any other provision to the contrary, Executive acknowledges and agrees that the Post-Termination Restricted Period shall be tolled during any period of violation of any of the covenants in this Section 9 and during any other period required for litigation during which the Company or any other member of the Company Group seeks to enforce such covenants against Executive if it is ultimately determined that Executive was in breach of such covenants.

(i) Disclosure of Covenants. As long as it remains in effect, Executive will disclose the existence of the covenants contained in this Section 9 to any prospective employer, partner, co-venturer, investor, or lender prior to entering into an employment, partnership, or other business relationship with such Person or entity.

Section 10. Representations and Warranties of Executive.

Executive represents and warrants to the Company that:

(a) Executive is entering into this Agreement voluntarily and that Executive's employment hereunder and compliance with the terms and conditions hereof will not conflict with or result in the breach by Executive of any agreement to which Executive is a party or by which Executive may be bound;

(b) Executive has not violated, and in connection with Executive's employment with the Company will not violate, any non-solicitation, non-competition, or other similar covenant or agreement with any Person by which Executive is or may be bound;

(c) In connection with Executive's employment with the Company, Executive will not use any confidential or proprietary information Executive may have obtained in connection with employment or service with any prior service recipient; and

(d) Executive has not been terminated from any prior employer or service recipient, or otherwise disciplined in connection any such relationship, in connection with, or as a result of, any claim of workplace sexual harassment or sex or gender discrimination, and to Executive's knowledge, Executive has not been the subject of any investigation, formal allegation, civil or criminal complaint, charge, or settlement regarding workplace sexual harassment or sex or gender discrimination.

Section 11. Indemnification.

The Company agrees during and after Executive's employment to indemnify and hold harmless Executive to the fullest extent permitted by the organizational documents of the Company, or if greater, in accordance with applicable law regarding indemnification, for actions or inactions of Executive in accordance with Executive's performance of her duties under this Agreement, as an officer, director, employee or agent of the Company or any affiliate thereof or as a fiduciary of any benefit plan of any of the foregoing. The Company also agrees to provide Executive with directors' and officers' liability insurance coverage both during and after Executive's employment with regard to matters occurring during employment, or while serving on the governing body of the Company, or any affiliate thereof, which coverage will be at a level at least equal to the greatest level being maintained at such time for any current officer or director and shall continue until such time as suits can no longer be brought against Executive as a matter of law. Executive will be entitled to advancement of expenses from the Company or its applicable subsidiaries in connection with any claim in the same manner and to the same extent to which any other officer or director of the Company is entitled.

Section 12. **Taxes.**

The Company may withhold from any payments made under this Agreement or otherwise made in connection with Executive's employment hereunder, all applicable taxes, including but not limited to income, employment, and social insurance taxes, as shall be required by law. If any such taxes are paid or advanced by the Company on behalf of Executive, Executive shall remain responsible for, and shall repay, such amounts to the Company, promptly following notice thereof by the Company. Executive acknowledges and represents that the Company has not provided any tax advice to Executive in connection with this Agreement and that Executive has been advised by the Company to seek tax advice from Executive's own tax advisors regarding this Agreement and payments that may be made to Executive pursuant to this Agreement, including specifically, the application of the provisions of Section 409A of the Code to such payments.

Section 13. **Set Off; Mitigation.**

The Company's obligation to pay Executive the amounts provided and to make the arrangements provided hereunder shall not be subject to set-off, counterclaim, or recoupment of amounts owed by Executive to the Company or its affiliates. Executive shall not be required to mitigate the amount of any payment provided pursuant to this Agreement by seeking other employment or otherwise, and the amount of any payment provided for pursuant to this Agreement shall not be reduced by any compensation earned as a result of Executive's other employment or otherwise.

Section 14. **Additional Section 409A Provisions.**

Notwithstanding any provision in this Agreement to the contrary:

(a) Any payment otherwise required to be made hereunder to Executive at any date as a result of the termination of Executive's employment shall be delayed for such period of time as may be necessary to meet the requirements of Section 409A(a)(2)(B)(i) of the Code (the "Delay Period"). On the first business day following the expiration of the Delay Period, Executive shall be paid, in a single cash lump sum, an amount equal to the aggregate amount of all payments delayed pursuant to the preceding sentence, and any remaining payments not so delayed shall continue to be paid pursuant to the payment schedule set forth herein.

(b) Each payment in a series of payments hereunder shall be deemed to be a separate payment for purposes of Section 409A of the Code.

(c) Notwithstanding anything herein to the contrary, the payment (or commencement of a series of payments) hereunder of any nonqualified deferred compensation (within the meaning of Section 409A of the Code) upon a termination of employment shall be delayed until such time as Executive has also undergone a "separation from service" as defined in Treas. Reg. 1.409A-1(h), at which time such nonqualified deferred compensation (calculated as of the date of Executive's termination of employment hereunder) shall be paid (or commence to be paid) to Executive on the schedule set forth in Section 7 as if Executive had undergone such termination of employment (under the same circumstances) on the date of Executive's ultimate "separation from service."

(d) To the extent that any right to reimbursement of expenses or payment of any benefit in-kind under this Agreement constitutes nonqualified deferred compensation (within the meaning of Section 409A of the Code), (i) any such expense reimbursement shall be made by the Company no later than the last day of the taxable year following the taxable year in which such expense was incurred by Executive, (ii) the right to reimbursement or in-kind benefits shall not be subject to liquidation or exchange for another benefit, and (iii) the amount of expenses eligible for reimbursement or in-kind benefits provided during any taxable year shall not affect the expenses eligible for reimbursement or in-kind benefits to be provided in any other taxable year; *provided, however*, that the foregoing clause shall not be violated with regard to expenses reimbursed under any arrangement covered by Section 105(b) of the Code solely because such expenses are subject to a limit related to the period the arrangement is in effect.

(e) While the payments and benefits provided hereunder are intended to be structured in a manner to avoid the implication of any penalty taxes under Section 409A of the Code, and shall be interpreted in accordance therewith, in no event whatsoever shall any member of the Company Group be liable for any additional tax, interest, or penalties that may be imposed on Executive as a result of Section 409A of the Code or any damages for failing to comply with Section 409A of the Code (other than for withholding obligations or other obligations applicable to employers, if any, under Section 409A of the Code).

Section 15. **Successors and Assigns; No Third-Party Beneficiaries.**

(a) The Company. This Agreement shall inure to the benefit of the Company and its respective successors and assigns. Neither this Agreement nor any of the rights, obligations, or interests arising hereunder may be assigned by the Company to a Person (other than another member of the Company Group, or its or their respective successors) without Executive's prior written consent (which shall not be unreasonably withheld, delayed, or conditioned); *provided, however*, that in the event of a sale of all or substantially all of the assets of the Company or any direct or indirect division or subsidiary thereof to which Executive's employment primarily relates, the Company may provide that this Agreement will be assigned to, and assumed by, the acquiror of such assets, division or subsidiary, as applicable, without Executive's consent.

(b) Executive. Executive's rights and obligations under this Agreement shall not be transferable by Executive by assignment or otherwise, without the prior written consent of the Company; *provided, however*, that if Executive shall die, all amounts then payable to Executive hereunder shall be paid in accordance with the terms of this Agreement to Executive's devisee, legatee, or other designee, or if there be no such designee, to Executive's estate.

(c) No Third-Party Beneficiaries. Except as otherwise set forth in Section 7(c) or Section 15(b) hereof, nothing expressed or referred to in this Agreement will be construed to give any Person other than the Company, the other members of the Company Group, and Executive any legal or equitable right, remedy, or claim under or with respect to this Agreement or any provision of this Agreement.

Section 16. Waiver and Amendments.

Any waiver, alteration, amendment, or modification of any of the terms of this Agreement shall be valid only if made in writing and signed by each of the parties hereto; *provided, however*, that any such waiver, alteration, amendment, or modification must be consented to on the Company's behalf by the Board. No waiver by either of the parties hereto of their rights hereunder shall be deemed to constitute a waiver with respect to any subsequent occurrences or transactions hereunder unless such waiver specifically states that it is to be construed as a continuing waiver.

Section 17. Severability.

If any covenants or such other provisions of this Agreement are found to be invalid or unenforceable by a final determination of a court of competent jurisdiction, (a) the remaining terms and provisions hereof shall be unimpaired, and (b) the invalid or unenforceable term or provision hereof shall be deemed replaced by a term or provision that is valid and enforceable and that comes closest to expressing the intention of the invalid or unenforceable term or provision hereof.

Section 18. Governing Law; Waiver of Jury Trial; Arbitration.

THIS AGREEMENT IS GOVERNED BY AND IS TO BE CONSTRUED UNDER THE LAWS OF THE STATE OF OHIO. EACH PARTY TO THIS AGREEMENT ALSO HEREBY WAIVES ANY RIGHT TO TRIAL BY JURY IN CONNECTION WITH ANY SUIT, ACTION, OR PROCEEDING UNDER OR IN CONNECTION WITH THIS AGREEMENT. Except as permitted under Section 9 hereof, any controversy or claim arising out of or relating to this Agreement (or the breach thereof) shall be settled by final, binding and non-appealable arbitration in [Cincinnati, Ohio] by three arbitrators. The arbitration shall be conducted by JAMS pursuant to its Employment Arbitration Rules and Procedures and subject to JAMS Policy on Employment Arbitration in accordance with its Employment Arbitration Rules and Procedures then in effect. Judgment on the award rendered by the arbitrators may be entered in any court having jurisdiction thereof. The arbitrators shall have the authority to award any remedy or relief that a court of competent jurisdiction could order or grant, including, without limitation, the issuance of an injunction. However, either party may, without inconsistency with this arbitration provision, apply to any court having jurisdiction over such dispute or controversy and seek interim provisional, injunctive or other equitable relief until the arbitration award is rendered or the controversy is otherwise resolved, or permanent injunctive relief. Except as necessary in court proceedings to enforce this arbitration provision or an award rendered hereunder, to obtain interim relief or as otherwise required by law, neither a party nor an arbitrator may disclose the content or results of any arbitration hereunder without the prior written consent of the Company and Executive, other than general statements. The fees charged by JAMS and any arbitrator shall be split equally between the parties to the arbitration.

Section 19. Notices.

All notices and other communications required or permitted under this Agreement which are addressed as provided in this Section 19, (A) if delivered personally against proper receipt shall be effective upon delivery and (B) if sent (x) by certified or registered mail with postage prepaid or (y) by Federal Express or similar courier service with courier fees paid by the sender, shall be effective upon receipt. The parties hereto may from time to time change their respective addresses for the purpose of notices to that party by a similar notice specifying a new address, but no such change shall be deemed to have been given unless it is sent and received in accordance with this Section 19.

If to the Company:

Blue Water Vaccines, Inc.
[Insert address]

Cincinnati, Ohio [insert zip]
Attn: Chief Executive Officer

With copy to:

[to be inserted]

If to Executive:

To the most recent address of Executive set forth in the personnel records of the Company.

Section 20. Section Headings.

The headings of the sections and subsections of this Agreement are inserted for convenience only and shall not be deemed to constitute a part thereof or affect the meaning or interpretation of this Agreement or of any term or provision hereof.

Section 21. Entire Agreement.

This Agreement, together with any exhibits attached hereto, constitutes the entire understanding and agreement of the parties hereto regarding the employment of Executive. This Agreement supersedes all prior negotiations, discussions, correspondence, communications, understandings, and agreements between the parties relating to the subject matter of this Agreement, including, without limitation, the Prior Agreement.

Section 22. Survival of Operative Sections.

Upon any termination of Executive's employment, the provisions of Section 7 through Section 23 of this Agreement (together with any related definitions set forth on Appendix A) shall survive to the extent necessary to give effect to the provisions thereof.

Section 23. Counterparts.

This Agreement may be executed in two or more counterparts, each of which shall be deemed to be an original but all of which together shall constitute one and the same instrument. The execution of this Agreement may be by actual or facsimile signature.

[Signatures to appear on the following page.]

IN WITNESS WHEREOF, the undersigned have executed this Agreement as of the date first above written.

BLUE WATER VACCINES, INC.

By: _____
Title: Chairman

EXECUTIVE

Erin Henderson

Signature Page

APPENDIX A
Definitions

(a) “Accrued Obligations” shall mean (i) all accrued but unpaid Base Salary through the date of termination of Executive’s employment, (ii) any unpaid or unreimbursed expenses incurred in accordance with Section 6 hereof, (iii) an amount equal to Executive’s accrued, but unused vacation days, multiplied by the quotient of Executive’s Annual Salary divided by 2,087 hours) in accordance with the Company’s vacation policies in effect from time to time, and (iv) any benefits provided under the Company’s employee benefit plans upon a termination of employment, including rights with respect to equity participation under the Equity Documents, in accordance with the terms contained therein.

(b) “Board” shall mean the Board of Directors of the Company.

(c) “Business” shall mean any business activities related to the Company Group’s research and development of transformational vaccines to address significant health challenges, including but not limited to a universal influenza vaccine, or any other current or demonstrably planned business activities of the Company Group.

(d) “Business Relation” shall mean any current or prospective client, customer, licensee, supplier, or other business relation of the Company Group, or any such relation that was a client, customer, licensee or other business relation within the prior six (6) month period, in each case, with whom Executive transacted business or whose identity became known to Executive in connection with Executive’s employment hereunder.

(e) “Cause” shall mean (i) Executive’s act(s) of gross negligence or willful misconduct in the course of Executive’s employment hereunder, (ii) willful failure or refusal by Executive to perform in any material respect Executive’s duties or responsibilities, (iii) misappropriation (or attempted misappropriation) by Executive of any assets or business opportunities of the Company or any other member of the Company Group, (iv) embezzlement or fraud committed (or attempted) by Executive, or at Executive’s direction, (v) Executive’s conviction of, indictment for, or pleading “guilty” or “no contest” to, (x) a felony or (y) any other criminal charge that has, or could be reasonably expected to have, an adverse impact on the performance of Executive’s duties to the Company or any other member of the Company Group or otherwise result in material injury to the reputation or business of the Company or any other member of the Company Group, (vi) any material violation by Executive of the policies of the Company, including but not limited to those relating to sexual harassment or business conduct, and those otherwise set forth in the manuals or statements of policy of the Company, or (vii) Executive’s material breach of this Agreement.

(f) “Change in Control” shall mean the occurrence, in a single transaction or in a series of related transactions, of any one of the following events; provided, however, to the extent necessary to avoid adverse personal income tax consequences to Executive also constitutes a “Change in Control Event” under Treasury Regulation 1.409A-3(i)(5)(i):

(i) any Person becomes the owner, directly or indirectly, of securities of the Company representing more than 50% of the combined voting power of the Company's then outstanding securities other than by virtue of a merger, consolidation or similar transaction. Notwithstanding the foregoing, a Change in Control shall not be deemed to occur (A) on account of the acquisition of securities of the Company directly from the Company, (B) on account of the acquisition of securities of the Company by an investor, any affiliate thereof or any other Person that acquires the Company's securities in a transaction or series of related transactions the primary purpose of which is to obtain financing for the Company through the issuance of equity securities, or (C) solely because the level of ownership held by any Person (the "Subject Person") exceeds the designated percentage threshold of the outstanding voting securities as a result of a repurchase or other acquisition of voting securities by the Company reducing the number of shares outstanding, provided that if a Change in Control would occur (but for the operation of this sentence) as a result of the acquisition of voting securities by the Company, and after such share acquisition, the Subject Person becomes the Owner of any additional voting securities that, assuming the repurchase or other acquisition had not occurred, increases the percentage of the then outstanding voting securities Owned by the Subject Person over the designated percentage threshold, then a Change in Control shall be deemed to occur;

(ii) there is consummated a merger, consolidation or similar transaction involving (directly or indirectly) the Company and, immediately after the consummation of such merger, consolidation or similar transaction, the stockholders of the Company immediately prior thereto do not own, directly or indirectly, either (A) outstanding voting securities representing more than 50% of the combined outstanding voting power of the surviving Entity in such merger, consolidation or similar transaction or (B) more than 50% of the combined outstanding voting power of the parent of the surviving Entity in such merger, consolidation or similar transaction, in each case in substantially the same proportions as their ownership of the outstanding voting securities of the Company immediately prior to such transaction;

(iii) the stockholders of the Company approve or the Board approves a plan of complete dissolution or liquidation of the Company, or a complete dissolution or liquidation of the Company shall otherwise occur, except for a liquidation into a parent corporation;

(iv) there is consummated a sale, lease, exclusive license or other disposition of all or substantially all of the consolidated assets of the Company and its subsidiaries, other than a sale, lease, license or other disposition of all or substantially all of the consolidated assets of the Company and its subsidiaries to an Entity, more than 50% of the combined voting power of the voting securities of

(g) "Code" shall mean the Internal Revenue Code of 1986, as amended, and the rules and regulations promulgated thereunder.

(h) "Company Group" shall mean the Company together with any of its direct or indirect subsidiaries.

(i) "Compensation Committee" shall mean the Compensation Committee of the Board.

(j) “Confidential Information” means information that the Company Group has or will develop, acquire, create, compile, discover, or own, that has value in or to the business of the Company Group that is not generally known and that the Company wishes to maintain as confidential. Confidential Information includes, but is not limited to, any and all non-public information that relates to the actual or anticipated business and/or products, research, or development of the Company Group, or to the Company Group’s technical data, trade secrets, or know-how, including, but not limited to, research, plans, or other information regarding the Company Group’s products or services and markets, customer lists, and customers (including, but not limited to, customers of the Company on whom Executive called or with whom Executive may become acquainted during the Term of Employment), software, developments, inventions, processes, formulas, technology, designs, drawings, engineering, hardware configuration information, marketing, finances, and other business information disclosed by the Company either directly or indirectly in writing, orally, or by drawings or inspection of premises, parts, equipment, or other Company Group property. Notwithstanding the foregoing, Confidential Information shall not include any of the foregoing items that have become publicly and widely known through no unauthorized disclosure by Executive or others who were under confidentiality obligations as to the item or items involved.

(k) “Disability” shall mean any physical or mental disability or infirmity of Executive that prevents the performance of Executive’s duties for a period of (i) ninety (90) consecutive days or (ii) one hundred eighty (180) non-consecutive days during any twelve (12) month period. Any question as to the existence, extent, or potentiality of Executive’s Disability upon which Executive and the Company cannot agree shall be determined by a qualified, independent physician selected by the Company and approved by Executive (which approval shall not be unreasonably withheld, delayed or conditioned). The determination of any such physician shall be final and conclusive for all purposes of this Agreement

(l) “Good Reason” shall mean, without Executive’s consent, (i) a material demotion in Executive’s title, duties, or responsibilities as set forth in Section 3 hereof, (ii) a material reduction in Base Salary set forth in Section 4(a) hereof or Target Annual Bonus opportunity set forth in Section 4(b) hereof (other than pursuant to an across-the-board reduction applicable to all similarly situated executives), or (iii) any other material breach of a provision of this Agreement by the Company (other than a provision that is covered by clause (i) or (ii) above). Executive acknowledges and agrees that Executive’s exclusive remedy in the event of any breach of this Agreement shall be to assert Good Reason pursuant to the terms and conditions of Section 7(f) hereof. Notwithstanding the foregoing, during the Term of Employment, in the event that the Board reasonably believes that Executive may have engaged in conduct that could constitute Cause hereunder, the Board may, in its sole and absolute discretion, suspend Executive from performing Executive’s duties hereunder, and in no event shall any such suspension constitute an event pursuant to which Executive may terminate employment with Good Reason or otherwise constitute a breach hereunder; *provided*, that no such suspension shall alter the Company’s obligations under this Agreement during such period of suspension.

(m) “Interfering Activities” shall mean (A) recruiting, encouraging, soliciting, or inducing, or in any manner attempting to recruit, encourage, solicit, or induce, any Person employed by, or providing consulting services to, any member of the Company Group to terminate such Person’s employment or services (or in the case of a consultant, materially reducing such services) with the Company Group, (B) hiring, or engaging any individual who was employed by or providing services to the Company Group within the six (6) month period prior to the date of such hiring or engagement, or (C) encouraging, soliciting, or inducing, or in any manner attempting to encourage, solicit, or induce, any Business Relation to cease doing business with or reduce the amount of business conducted with the Company Group, or in any way interfering with the relationship between any such Business Relation and the Company Group.

(n) “Person” shall mean any individual, corporation, partnership, limited liability company, joint venture, association, joint-stock company, trust (charitable or non-charitable), unincorporated organization, or other form of business entity.

(o) “Post-Termination Restricted Period” shall mean the period commencing on the date of the termination of the Employment Period for any reason and ending on the [●] month anniversary of such date of termination.

(p) “Release of Claims” shall mean the Release of Claims in substantially the same form attached hereto as Exhibit A (as the same may be revised from time to time by the Company upon the advice of counsel).

Appendix B

Permitted Activities

The Company acknowledges and agrees that Executive has notified the Company that she serves as an officer, director, member or manager of the following business entities, and agrees that Executive may continue to do so during the Term of this Agreement, notwithstanding anything in Section 3(b) or other provisions of the Agreement to the contrary:

[Insert list]

EXHIBIT A

RELEASE OF CLAIMS

As used in this Release of Claims (this “Release”), the term “claims” will include all claims, covenants, warranties, promises, undertakings, actions, suits, causes of action, obligations, debts, accounts, attorneys’ fees, judgments, losses, and liabilities, of whatsoever kind or nature, in law, in equity, or otherwise.

For and in consideration of the Severance Benefits, and other good and valuable consideration, I, [Executive] for and on behalf of myself and my heirs, administrators, executors, and assigns, effective the date on which this release becomes effective pursuant to its terms, do fully and forever release, remise, and discharge each of the Company and each of its direct and indirect subsidiaries and affiliates, together with their respective officers, directors, partners, shareholders, employees, and agents (collectively, the “Group”) from any and all claims whatsoever up to the date hereof that I had, may have had, or now have against the Group, for or by reason of any matter, cause, or thing whatsoever, including any claim arising out of or attributable to my employment or the termination of my employment with the Company, whether for tort, breach of express or implied employment contract, intentional infliction of emotional distress, wrongful termination, unjust dismissal, defamation, libel, or slander, or under any federal, state, or local law dealing with discrimination based on age, race, sex, national origin, handicap, religion, disability, or sexual orientation. This release of claims includes, but is not limited to, all claims arising under the Age Discrimination in Employment Act (“ADEA”), Title VII of the Civil Rights Act, the Americans with Disabilities Act, the Civil Rights Act of 1991, the Family Medical Leave Act, and the Equal Pay Act, each as may be amended from time to time, and all other federal, state, and local laws, the common law, and any other purported restriction on an employer’s right to terminate the employment of employees. The release contained herein is intended to be a general release of any and all claims to the fullest extent permissible by law.

I acknowledge and agree that as of the date I execute this Release, I have no knowledge of any facts or circumstances that give rise or could give rise to any claims under any of the laws listed in the preceding paragraph.

By executing this Release, I specifically release all claims relating to my employment and its termination under ADEA, a United States federal statute that, among other things, prohibits discrimination on the basis of age in employment and employee benefit plans.

Notwithstanding any provision of this Release to the contrary, by executing this Release, I am not releasing (i) any claims relating to my rights under Section 7 of the Employment Agreement, (ii) any claims that cannot be waived by law, or (iii) my right of indemnification as provided by, and in accordance with the terms of, the Company’s by-laws or a Company insurance policy providing such coverage, as any of such may be amended from time to time.

I expressly acknowledge and agree that I –

- Am able to read the language, and understand the meaning and effect, of this Release;
 - Have no physical or mental impairment of any kind that has interfered with my ability to read and understand the meaning of this Release or its terms, and that I am not acting under the influence of any medication, drug, or chemical of any type in entering into this Release;
 - Am specifically agreeing to the terms of the release contained in this Release because the Company has agreed to pay me the Severance Benefits in consideration for my agreement to accept it in full settlement of all possible claims I might have or ever had, and because of my execution of this Release;
-

- Acknowledge that, but for my execution of this Release, I would not be entitled to the Severance Benefits;
- Understand that, by entering into this Release, I do not waive rights or claims under ADEA that may arise after the date I execute this Release;
- Had or could have [twenty-one (21)][forty-five (45)]¹ days from the date of my termination of employment (the “Release Expiration Date”) in which to review and consider this Release, and that if I execute this Release prior to the Release Expiration Date, I have voluntarily and knowingly waived the remainder of the review period;
- Have not relied upon any representation or statement not set forth in this Release or my Employment Agreement made by the Company or any of its representatives;
- Was advised to consult with my attorney regarding the terms and effect of this Release; and
- Have signed this Release knowingly and voluntarily.

I represent and warrant that I have not previously filed, and to the maximum extent permitted by law agree that I will not file, a complaint, charge, or lawsuit against any member of the Group regarding any of the claims released herein. If, notwithstanding this representation and warranty, I have filed or file such a complaint, charge, or lawsuit, I agree that I shall cause such complaint, charge, or lawsuit to be dismissed with prejudice and shall pay any and all costs required in obtaining dismissal of such complaint, charge, or lawsuit, including without limitation the attorneys’ fees of any member of the Group against whom I have filed such a complaint, charge, or lawsuit. This paragraph shall not apply, however, to a claim of age discrimination under ADEA or to any non-waivable right to file a charge with the United States Equal Employment Opportunity Commission (the “EEOC”); *provided, however*, that if the EEOC were to pursue any claims relating to my employment with Company, I agree that I shall not be entitled to recover any monetary damages or any other remedies or benefits as a result and that this Release and the Severance Benefits will control as the exclusive remedy and full settlement of all such claims by me.

Nothing in this Release shall prohibit or impede me from communicating, cooperating or filing a complaint with any Governmental Entity with respect to possible violations of any U.S. federal, state or local law or regulation, or otherwise making disclosures to any Governmental Entity, in each case, that are protected under the whistleblower provisions of any such law or regulation; provided, that in each case such communications and disclosures are consistent with applicable law. I understand and acknowledge that an individual shall not be held criminally or civilly liable under any federal or state trade secret law for the disclosure of a trade secret that is made (1) in confidence to a federal, state, or local government official or to an attorney solely for the purpose of reporting or investigating a suspected violation of law, or (2) in a complaint or other document filed in a lawsuit or other proceeding, if such filing is made under seal. I understand and acknowledge further that an individual who files a lawsuit for retaliation by an employer for reporting a suspected violation of law may disclose the trade secret to the attorney of the individual and use the trade secret information in the court proceeding, if the individual files any document containing the trade secret under seal; and does not disclose the trade secret, except pursuant to court order. Except as otherwise provided in this paragraph or under applicable law, under no circumstance am I authorized to disclose any information covered by the Company’s attorney-client privilege or attorney work product, or the Company’s trade secrets, without the prior written consent of the Company’s Chief Executive Officer or another executive officer designated by the Board. I do not need the prior authorization of (or to give notice to) any member of the Company Group regarding any communication, disclosure, or activity permitted by this paragraph.

¹ To be selected based on whether applicable termination was “in connection with an exit incentive or other employment termination program” (as such phrase is defined in the Age Discrimination in Employment Act of 1967).

I hereby agree to waive any and all claims to re-employment with the Company or any other member of the Company Group (as defined in my Employment Agreement) and affirmatively agree not to seek further employment with the Company or any other member of the Company Group.

Notwithstanding anything contained herein to the contrary, this Release will not become effective or enforceable prior to the expiration of the period of seven (7) calendar days following the date of its execution by me (the "Revocation Period"), during which time I may revoke my acceptance of this Release by notifying the Company and the Board of Directors of the Company, in writing, delivered to the Company at its principal executive office, marked for the attention of its Chief Executive Officer. To be effective, such revocation must be received by the Company no later than 11:59 p.m. on the seventh (7th) calendar day following the execution of this Release. Provided that the Release is executed and I do not revoke it during the Revocation Period, the eighth (8th) day following the date on which this Release is executed shall be its effective date. I acknowledge and agree that if I revoke this Release during the Revocation Period, this Release will be null and void and of no effect, and neither the Company nor any other member of the Company will have any obligations to pay me the Severance Benefits.

The provisions of this Release shall be binding upon my heirs, executors, administrators, legal personal representatives, and assigns. If any provision of this Release shall be held by any court of competent jurisdiction to be illegal, void, or unenforceable, such provision shall be of no force or effect. The illegality or unenforceability of such provision, however, shall have no effect upon and shall not impair the enforceability of any other provision of this Release.

EXCEPT WHERE PREEMPTED BY FEDERAL LAW, THIS RELEASE SHALL BE GOVERNED BY AND CONSTRUED IN ACCORDANCE WITH FEDERAL LAW AND THE LAWS OF THE STATE OF OHIO, APPLICABLE TO AGREEMENTS MADE AND TO BE PERFORMED IN THAT STATE WITHOUT GIVING EFFECT TO THE PRINCIPLES OF CONFLICTS OF LAWS. I HEREBY WAIVE ANY RIGHT TO TRIAL BY JURY IN CONNECTION WITH ANY SUIT, ACTION, OR PROCEEDING UNDER OR IN CONNECTION WITH THIS RELEASE.

Capitalized terms used, but not defined herein, shall have the meanings ascribed to such terms in my Employment Agreement, dated July ____, 2021, with the Company (the "Employment Agreement").

[Executive]

Date:

INDEMNIFICATION AGREEMENT

THIS INDEMNIFICATION AGREEMENT (the “**Agreement**”) is made and entered into as of __, 202[] between Blue Water Vaccines Inc., a Delaware corporation (the “**Company**”), and (“**Indemnitee**”).

WITNESSETH THAT:

WHEREAS, highly competent persons have become more reluctant to serve corporations as directors or in other capacities unless they are provided with adequate protection through insurance or adequate indemnification against inordinate risks of claims and actions against them arising out of their service to and activities on behalf of the corporation;

WHEREAS, the Board of Directors of the Company (the “**Board**”) has determined that, in order to attract and retain qualified individuals, the Company will attempt to maintain on an ongoing basis, at its sole expense, liability insurance to protect persons serving the Company and its subsidiaries from certain liabilities. Although the furnishing of such insurance has been a customary and widespread practice among United States-based corporations and other business enterprises, the Company believes that, given current market conditions and trends, such insurance may not be available to it on terms that the Company considers to be commercially reasonable or, if available to it on commercially reasonable terms during some period of time, may be available to it in the future only at higher premiums and with more exclusions. At the same time, directors, officers, and other persons in service to corporations or business enterprises are being increasingly subjected to expensive and time-consuming litigation relating to, among other things, matters that traditionally would have been brought only against the Company or business enterprise itself. The bylaws of the Company (as amended from time to time, the “**Bylaws**”) and the Amended and Restated Certificate of Incorporation of the Company (as amended from time to time, the “**Certificate of Incorporation**”) require indemnification of the officers and directors of the Company. Indemnitee may also be entitled to indemnification pursuant to the General Corporation Law of the State of Delaware (“**DGCL**”). The Bylaws, the Certificate of Incorporation and the DGCL expressly provide that the indemnification provisions set forth therein are not exclusive, and thereby contemplate that contracts may be entered into between the Company and members of the Board, officers and other persons with respect to indemnification;

WHEREAS, the uncertainties relating to such insurance and to indemnification have increased the difficulty of attracting and retaining such persons;

WHEREAS, the Board has determined that the increased difficulty in attracting and retaining such persons is detrimental to the best interests of the Company’s stockholders and that the Company should act to assure such persons that there will be increased certainty of such protection in the future;

WHEREAS, it is reasonable, prudent and necessary for the Company contractually to obligate itself to indemnify, and to advance expenses on behalf of, such persons to the fullest extent permitted by applicable law so that they will serve or continue to serve the Company free from undue concern that they will not be so indemnified;

WHEREAS, this Agreement is a supplement to and in furtherance of the Bylaws and the Certificate of Incorporation and any resolutions adopted pursuant thereto, and shall not be deemed a substitute therefor, nor to diminish or abrogate any rights of Indemnitee thereunder; and

WHEREAS, Indemnitee does not regard the protection available under the Certificate of Incorporation and insurance, if any, as adequate in the present circumstances, and may not be willing to serve as a director without adequate protection, and the Company desires Indemnitee to serve in such capacity. Indemnitee is willing to serve, continue to serve and to take on additional service for or on behalf of the Company on the condition that he be so indemnified.

NOW, THEREFORE, in consideration of Indemnitee's agreement to serve as a director after the date hereof, the parties hereto agree as follows:

1. Indemnity of Indemnitee. The Company hereby agrees to hold harmless and indemnify Indemnitee to the fullest extent permitted by law, as such may be amended from time to time. In furtherance of the foregoing indemnification, and without limiting the generality thereof:

(a) Proceedings Other Than Proceedings by or in the Right of the Company. Indemnitee shall be entitled to the rights of indemnification provided in this Section 1(a) if, by reason of his Corporate Status (as hereinafter defined), the Indemnitee is, or is threatened to be made, a party to or participant in any Proceeding (as hereinafter defined) other than a Proceeding by or in the right of the Company. Pursuant to this Section 1(a), Indemnitee shall be indemnified against all Expenses (as hereinafter defined), judgments, penalties, fines and amounts paid in settlement actually and reasonably incurred by him, or on his behalf, in connection with such Proceeding or any claim, issue or matter therein, if the Indemnitee acted in good faith and in a manner the Indemnitee reasonably believed to be in or not opposed to the best interests of the Company, and with respect to any criminal Proceeding, had no reasonable cause to believe the Indemnitee's conduct was unlawful.

(b) Proceedings by or in the Right of the Company. Indemnitee shall be entitled to the rights of indemnification provided in this Section 1(b) if, by reason of his Corporate Status, the Indemnitee is, or is threatened to be made, a party to or participant in any Proceeding brought by or in the right of the Company. Pursuant to this Section 1(b), Indemnitee shall be indemnified against all Expenses actually and reasonably incurred by the Indemnitee, or on the Indemnitee's behalf, in connection with such Proceeding if the Indemnitee acted in good faith and in a manner the Indemnitee reasonably believed to be in or not opposed to the best interests of the Company; provided, however, if applicable law so provides, no indemnification against such Expenses shall be made in respect of any claim, issue or matter in such Proceeding as to which Indemnitee shall have been adjudged to be liable to the Company unless and to the extent that the Court of Chancery of the State of Delaware shall determine that such indemnification may be made.

(c) Indemnification for Expenses of a Party Who is Wholly or Partly Successful. Notwithstanding any other provision of this Agreement, to the extent that Indemnitee is, by reason of his Corporate Status, a party to and is successful, on the merits or otherwise, in any Proceeding, he shall be indemnified to the maximum extent permitted by law, as such may be amended from time to time, against all Expenses actually and reasonably incurred by him or on his behalf in connection therewith. If Indemnitee is not wholly successful in such Proceeding but is successful, on the merits or otherwise, as to one or more but less than all claims, issues or matters in such Proceeding, the Company shall indemnify Indemnitee against all Expenses actually and reasonably incurred by him or on his behalf in connection with each successfully resolved claim, issue or matter. For purposes of this Section and without limitation, the termination of any claim, issue or matter in such a Proceeding by dismissal, with or without prejudice, shall be deemed to be a successful result as to such claim, issue or matter.

(d) Indemnification of Appointing Stockholder. If (i) Indemnitee is or was affiliated with one or more companies that has invested in the Company (an “**Appointing Stockholder**”), (ii) the Appointing Stockholder is, or is threatened to be made, a party to or a participant in any Proceeding, and (iii) the Appointing Stockholder’s involvement in the Proceeding results from any claim based on the Indemnitee’s service to the Company as a director or other fiduciary of the Company, the Appointing Stockholder will be entitled to indemnification hereunder for Expenses to the same extent as Indemnitee, and the terms of this Agreement as they relate to procedures for indemnification of Indemnitee and advancement of Expenses shall apply to any such indemnification of Appointing Stockholder. The rights provided to the Appointing Stockholder under this Section 1(d) shall (i) be suspended during any period during which the Appointing Stockholder does not have a representative on the Company’s Board, and (ii) terminate on an initial public offering of the Company’s Common Stock; provided, however, that in the event of any such suspension or termination, the Appointing Stockholder’s rights to indemnification will not be suspended or terminated with respect to any Proceeding based in whole or in part on facts and circumstances occurring at any time prior to such suspension or termination regardless of whether the Proceeding arises before or after such suspension or termination. The Company and Indemnitee agree that the Appointing Stockholder is an express third party beneficiary of the terms of this Section 1(d).

2. Additional Indemnity. In addition to, and without regard to any limitations on, the indemnification provided for in Section 1 of this Agreement, the Company shall and hereby does indemnify and hold harmless Indemnitee against all Expenses, judgments, penalties, fines and amounts paid in settlement actually and reasonably incurred by him or on his behalf if, by reason of his Corporate Status, he is, or is threatened to be made, a party to or participant in any Proceeding (including a Proceeding by or in the right of the Company), including, without limitation, all liability arising out of the negligence or active or passive wrongdoing of Indemnitee. The only limitation that shall exist upon the Company’s obligations pursuant to this Agreement shall be that the Company shall not be obligated to make any payment to Indemnitee that is finally determined (under the procedures, and subject to the presumptions, set forth in Sections 6 and 7 hereof) to be unlawful.

3. Contribution.

(a) Whether or not the indemnification provided in Sections 1 and 2 hereof is available, in respect of any threatened, pending or completed action, suit or proceeding in which the Company is jointly liable with Indemnitee (or would be if joined in such action, suit or proceeding), the Company shall pay, in the first instance, the entire amount of any judgment or settlement of such action, suit or proceeding without requiring Indemnitee to contribute to such payment and the Company hereby waives and relinquishes any right of contribution it may have against Indemnitee. The Company shall not enter into any settlement of any action, suit or proceeding in which the Company is jointly liable with Indemnitee (or would be if joined in such action, suit or proceeding) unless such settlement provides for a full and final release of all claims asserted against Indemnitee.

(b) Without diminishing or impairing the obligations of the Company set forth in the preceding subparagraph, if, for any reason, Indemnitee shall elect or be required to pay all or any portion of any judgment or settlement in any threatened, pending or completed action, suit or proceeding in which the Company is jointly liable with Indemnitee (or would be if joined in such action, suit or proceeding), the Company shall contribute to the amount of Expenses, judgments, fines and amounts paid in settlement actually and reasonably incurred and paid or payable by Indemnitee in proportion to the relative benefits received by the Company and all officers, directors or employees of the Company, other than Indemnitee, who are jointly liable with Indemnitee (or would be if joined in such action, suit or proceeding), on the one hand, and Indemnitee, on the other hand, from the transaction or events from which such action, suit or proceeding arose; provided, however, that the proportion determined on the basis of relative benefit may, to the extent necessary to conform to law, be further adjusted by reference to the relative fault of the Company and all officers, directors or employees of the Company other than Indemnitee who are jointly liable with Indemnitee (or would be if joined in such action, suit or proceeding), on the one hand, and Indemnitee, on the other hand, in connection with the transaction or events that resulted in such expenses, judgments, fines or settlement amounts, as well as any other equitable considerations which applicable law may require to be considered. The relative fault of the Company and all officers, directors or employees of the Company, other than Indemnitee, who are jointly liable with Indemnitee (or would be if joined in such action, suit or proceeding), on the one hand, and Indemnitee, on the other hand, shall be determined by reference to, among other things, the degree to which their actions were motivated by intent to gain personal profit or advantage, the degree to which their liability is primary or secondary and the degree to which their conduct is active or passive.

(c) The Company hereby agrees to fully indemnify and hold Indemnitee harmless from any claims of contribution which may be brought by officers, directors or employees of the Company, other than Indemnitee, who may be jointly liable with Indemnitee.

(d) To the fullest extent permissible under applicable law, if the indemnification provided for in this Agreement is unavailable to Indemnitee for any reason whatsoever, the Company, in lieu of indemnifying Indemnitee, shall contribute to the amount incurred by Indemnitee, whether for judgments, fines, penalties, excise taxes, amounts paid or to be paid in settlement and/or for Expenses, in connection with any claim relating to an indemnifiable event under this Agreement, in such proportion as is deemed fair and reasonable in light of all of the circumstances of such Proceeding in order to reflect (i) the relative benefits received by the Company and Indemnitee as a result of the event(s) and/or transaction(s) giving cause to such Proceeding; and/or (ii) the relative fault of the Company (and its directors, officers, employees and agents) and Indemnitee in connection with such event(s) and/or transaction(s).

4. Indemnification for Expenses of a Witness. Notwithstanding any other provision of this Agreement, to the extent that Indemnitee is, by reason of his Corporate Status, a witness, or is made (or asked) to respond to discovery requests, in any Proceeding to which Indemnitee is not a party, he shall be indemnified against all Expenses actually and reasonably incurred by him or on his behalf in connection therewith.

5. Advancement of Expenses. Notwithstanding any other provision of this Agreement, the Company shall advance all Expenses incurred by or on behalf of Indemnitee in connection with any Proceeding by reason of Indemnitee's Corporate Status within thirty (30) days after the receipt by the Company of a statement or statements from Indemnitee requesting such advance or advances from time to time, whether prior to or after final disposition of such Proceeding. Such statement or statements shall reasonably evidence the Expenses incurred by Indemnitee and shall include or be preceded or accompanied by a written undertaking by or on behalf of Indemnitee to repay any Expenses advanced if it shall ultimately be determined that Indemnitee is not entitled to be indemnified against such Expenses. Any advances and undertakings to repay pursuant to this Section 5 shall be unsecured and interest free.

6. Procedures and Presumptions for Determination of Entitlement to Indemnification. It is the intent of this Agreement to secure for Indemnitee rights of indemnity that are as favorable as may be permitted under the DGCL and public policy of the State of Delaware. Accordingly, the parties agree that the following procedures and presumptions shall apply in the event of any question as to whether Indemnitee is entitled to indemnification under this Agreement:

(a) To obtain indemnification under this Agreement, Indemnitee shall submit to the Company a written request, including therein or therewith such documentation and information as is reasonably available to Indemnitee and is reasonably necessary to determine whether and to what extent Indemnitee is entitled to indemnification. The Secretary of the Company shall, promptly upon receipt of such a request for indemnification, advise the Board in writing that Indemnitee has requested indemnification. Notwithstanding the foregoing, any failure of Indemnitee to provide such a request to the Company, or to provide such a request in a timely fashion, shall not relieve the Company of any liability that it may have to Indemnitee unless, and to the extent that, such failure actually and materially prejudices the interests of the Company.

(b) Upon written request by Indemnitee for indemnification pursuant to the first sentence of Section 6(a) hereof, a determination with respect to Indemnitee's entitlement thereto shall be made in the specific case by one of the following four methods, which shall be at the election of the Board: (1) by a majority vote of the disinterested directors, even though less than a quorum, (2) by a committee of disinterested directors designated by a majority vote of the disinterested directors, even though less than a quorum, (3) if there are no disinterested directors or if the disinterested directors so direct, by Independent Counsel (as hereinafter defined) in a written opinion to the Board, a copy of which shall be delivered to the Indemnitee, or (4) if so directed by the Board, by the stockholders of the Company. For purposes hereof, disinterested directors are those members of the Board who are not parties to the action, suit or proceeding in respect of which indemnification is sought by Indemnitee.

(c) If the determination of entitlement to indemnification is to be made by Independent Counsel pursuant to Section 6(b) hereof, the Independent Counsel shall be selected as provided in this Section 6(c). The Independent Counsel shall be selected by the Board and written notice of such selection shall be given to Indemnitee. Indemnitee may, within ten (10) days after such written notice of selection shall have been given, deliver to the Company, a written objection to such selection; provided, however, that such objection may be asserted only on the ground that the Independent Counsel so selected does not meet the requirements of "Independent Counsel" as defined in Section 13 of this Agreement, and the objection shall set forth with particularity the factual basis of such assertion. Absent a proper and timely objection, the person so selected shall act as Independent Counsel. If a written objection is made and substantiated, the Independent Counsel selected may not serve as Independent Counsel unless and until such objection is withdrawn or a court has determined that such objection is without merit. If, within twenty (20) days after submission by Indemnitee of a written request for indemnification pursuant to Section 6(a) hereof, no Independent Counsel shall have been selected and not objected to, either the Company or Indemnitee may petition the Court of Chancery of the State of Delaware or other court of competent jurisdiction for resolution of any objection which shall have been made by the Indemnitee to the Company's selection of Independent Counsel and/or for the appointment as Independent Counsel of a person selected by the court or by such other person as the court shall designate, and the person with respect to whom all objections are so resolved or the person so appointed shall act as Independent Counsel under Section 6(b) hereof. The Company shall pay any and all reasonable fees and expenses of Independent Counsel incurred by such Independent Counsel in connection with acting pursuant to Section 6(b) hereof, and the Company shall pay all reasonable fees and expenses incident to the procedures of this Section 6(c), regardless of the manner in which such Independent Counsel was selected or appointed.

(d) In making a determination with respect to entitlement to indemnification hereunder, the person or persons or entity making such determination shall presume that Indemnitee is entitled to indemnification under this Agreement. Anyone seeking to overcome this presumption shall have the burden of proof and the burden of persuasion by clear and convincing evidence. Neither the failure of the Company (including by its directors or Independent Counsel) to have made a determination prior to the commencement of any action pursuant to this Agreement that indemnification is proper in the circumstances because Indemnitee has met the applicable standard of conduct, nor an actual determination by the Company (including by its directors or Independent Counsel) that Indemnitee has not met such applicable standard of conduct, shall be a defense to the action or create a presumption that Indemnitee has not met the applicable standard of conduct.

(e) Indemnitee shall be deemed to have acted in good faith if Indemnitee's action is based on the records or books of account of the Enterprise (as hereinafter defined), including financial statements, or on information supplied to Indemnitee by the officers of the Enterprise in the course of their duties, or on the advice of legal counsel for the Enterprise or on information or records given or reports made to the Enterprise by an independent certified public accountant or by an appraiser or other expert selected with reasonable care by the Enterprise. In addition, the knowledge and/or actions, or failure to act, of any director, officer, agent or employee of the Enterprise shall not be imputed to Indemnitee for purposes of determining the right to indemnification under this Agreement. Whether or not the foregoing provisions of this Section 6(e) are satisfied, it shall in any event be presumed that Indemnitee has at all times acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the Company. Anyone seeking to overcome this presumption shall have the burden of proof and the burden of persuasion by clear and convincing evidence.

(f) If the person, persons or entity empowered or selected under Section 6 to determine whether Indemnitee is entitled to indemnification shall not have made a determination within sixty (60) days after receipt by the Company of the request therefor, the requisite determination of entitlement to indemnification shall be deemed to have been made and Indemnitee shall be entitled to such indemnification absent (i) a misstatement by Indemnitee of a material fact, or an omission of a material fact necessary to make Indemnitee's statement not materially misleading, in connection with the request for indemnification, or (ii) a prohibition of such indemnification under applicable law; provided, however, that such sixty (60)-day period may be extended for a reasonable time, not to exceed an additional thirty (30) days, if the person, persons or entity making such determination with respect to entitlement to indemnification in good faith requires such additional time to obtain or evaluate documentation and/or information relating thereto; and provided, further, that the foregoing provisions of this Section 6(f) shall not apply if the determination of entitlement to indemnification is to be made by the stockholders pursuant to Section 6(b) of this Agreement and if (A) within fifteen (15) days after receipt by the Company of the request for such determination, the Board or the Disinterested Directors, if appropriate, resolve to submit such determination to the stockholders for their consideration at an annual meeting thereof to be held within seventy-five (75) days after such receipt and such determination is made thereat, or (B) a special meeting of stockholders is called within fifteen (15) days after such receipt for the purpose of making such determination, such meeting is held for such purpose within sixty (60) days after having been so called and such determination is made thereat.

(g) Indemnitee shall cooperate with the person, persons or entity making such determination with respect to Indemnitee's entitlement to indemnification, including providing to such person, persons or entity upon reasonable advance request any documentation or information which is not privileged or otherwise protected from disclosure and which is reasonably available to Indemnitee and reasonably necessary to such determination. Any Independent Counsel, member of the Board or stockholder of the Company shall act reasonably and in good faith in making a determination regarding the Indemnitee's entitlement to indemnification under this Agreement. Any costs or expenses (including attorneys' fees and disbursements) incurred by Indemnitee in so cooperating with the person, persons or entity making such determination shall be borne by the Company (irrespective of the determination as to Indemnitee's entitlement to indemnification) and the Company hereby indemnifies and agrees to hold Indemnitee harmless therefrom.

(h) The Company acknowledges that a settlement or other disposition short of final judgment may be successful if it permits a party to avoid expense, delay, distraction, disruption and uncertainty. In the event that any action, claim or proceeding to which Indemnitee is a party is resolved in any manner other than by adverse judgment against Indemnitee (including, without limitation, settlement of such action, claim or proceeding with or without payment of money or other consideration) it shall be presumed that Indemnitee has been successful on the merits or otherwise in such action, suit or proceeding. Anyone seeking to overcome this presumption shall have the burden of proof and the burden of persuasion by clear and convincing evidence.

(i) The termination of any Proceeding or of any claim, issue or matter therein, by judgment, order, settlement or conviction, or upon a plea of nolo contendere or its equivalent, shall not (except as otherwise expressly provided in this Agreement) of itself adversely affect the right of Indemnitee to indemnification or create a presumption that Indemnitee did not act in good faith and in a manner which he reasonably believed to be in or not opposed to the best interests of the Company or, with respect to any criminal Proceeding, that Indemnitee had reasonable cause to believe that his conduct was unlawful.

7. Remedies of Indemnitee.

(a) In the event that (i) a determination is made pursuant to Section 6 of this Agreement that Indemnitee is not entitled to indemnification under this Agreement, (ii) advancement of Expenses is not timely made pursuant to Section 5 of this Agreement, (iii) no determination of entitlement to indemnification is made pursuant to Section 6(b) of this Agreement within ninety (90) days after receipt by the Company of the request for indemnification, (iv) payment of indemnification is not made pursuant to this Agreement within ten (10) days after receipt by the Company of a written request therefor or (v) payment of indemnification is not made within ten (10) days after a determination has been made that Indemnitee is entitled to indemnification or such determination is deemed to have been made pursuant to Section 6 of this Agreement, Indemnitee shall be entitled to an adjudication in an appropriate court of the State of Delaware, or in any other court of competent jurisdiction, of Indemnitee's entitlement to such indemnification. Indemnitee shall commence such proceeding seeking an adjudication within one hundred eighty (180) days following the date on which Indemnitee first has the right to commence such proceeding pursuant to this Section 7(a). The Company shall not oppose Indemnitee's right to seek any such adjudication.

(b) In the event that a determination shall have been made pursuant to Section 6(b) of this Agreement that Indemnitee is not entitled to indemnification, any judicial proceeding commenced pursuant to this Section 7 shall be conducted in all respects as a de novo trial on the merits, and Indemnitee shall not be prejudiced by reason of the adverse determination under Section 6(b).

(c) If a determination shall have been made pursuant to Section 6(b) of this Agreement that Indemnitee is entitled to indemnification, the Company shall be bound by such determination in any judicial proceeding commenced pursuant to this Section 7, absent (i) a misstatement by Indemnitee of a material fact, or an omission of a material fact necessary to make Indemnitee's misstatement not materially misleading in connection with the application for indemnification, or (ii) a prohibition of such indemnification under applicable law.

(d) In the event that Indemnitee, pursuant to this Section 7, seeks a judicial adjudication of his rights under, or to recover damages for breach of, this Agreement, or to recover under any directors' and officers' liability insurance policies maintained by the Company, the Company shall pay on his behalf, in advance, any and all expenses (of the types described in the definition of Expenses in Section 13 of this Agreement) actually and reasonably incurred by him in such judicial adjudication, regardless of whether Indemnitee ultimately is determined to be entitled to such indemnification, advancement of expenses or insurance recovery.

(e) The Company shall be precluded from asserting in any judicial proceeding commenced pursuant to this Section 7 that the procedures and presumptions of this Agreement are not valid, binding and enforceable and shall stipulate in any such court that the Company is bound by all the provisions of this Agreement. The Company shall indemnify Indemnitee against any and all Expenses and, if requested by Indemnitee, shall (within ten (10) days after receipt by the Company of a written request therefor) advance, to the extent not prohibited by law, such expenses to Indemnitee, which are incurred by Indemnitee in connection with any action brought by Indemnitee for indemnification or advance of Expenses from the Company under this Agreement or under any directors' and officers' liability insurance policies maintained by the Company, regardless of whether Indemnitee ultimately is determined to be entitled to such indemnification, advancement of Expenses or insurance recovery, as the case may be.

(f) Notwithstanding anything in this Agreement to the contrary, no determination as to entitlement to indemnification under this Agreement shall be required to be made prior to the final disposition of the Proceeding.

8. Non-Exclusivity; Survival of Rights; Insurance; Subrogation.

(a) The rights of indemnification as provided by this Agreement shall not be deemed exclusive of any other rights to which Indemnitee may at any time be entitled under applicable law, the Certificate of Incorporation, the Bylaws, any agreement, a vote of stockholders, a resolution of directors of the Company, or otherwise. No amendment, alteration or repeal of this Agreement or of any provision hereof shall limit or restrict any right of Indemnitee under this Agreement in respect of any action taken or omitted by such Indemnitee in his Corporate Status prior to such amendment, alteration or repeal. To the extent that a change in the DGCL, whether by statute or judicial decision, permits greater indemnification than would be afforded currently under the Certificate of Incorporation, the Bylaws and this Agreement, it is the intent of the parties hereto that Indemnitee shall enjoy by this Agreement the greater benefits so afforded by such change. No right or remedy herein conferred is intended to be exclusive of any other right or remedy, and every other right and remedy shall be cumulative and in addition to every other right and remedy given hereunder or now or hereafter existing at law or in equity or otherwise. The assertion or employment of any right or remedy hereunder, or otherwise, shall not prevent the concurrent assertion or employment of any other right or remedy.

(b) To the extent that the Company maintains an insurance policy or policies providing liability insurance for directors, officers, employees, or agents or fiduciaries of the Company or of any other corporation, partnership, joint venture, trust, employee benefit plan or other enterprise that such person serves at the request of the Company, Indemnitee shall be covered by such policy or policies in accordance with its or their terms to the maximum extent of the coverage available for any director, officer, employee, agent or fiduciary under such policy or policies. If, at the time of the receipt of a notice of a claim pursuant to the terms hereof, the Company has directors' and officers' liability insurance in effect, the Company shall give prompt notice of the commencement of such proceeding to the insurers in accordance with the procedures set forth in the respective policies. The Company shall thereafter take all necessary or desirable actions to cause such insurers to pay, on behalf of the Indemnitee, all amounts payable as a result of such proceeding in accordance with the terms of such policies.

(c) Except as provided in subparagraph (c) above, in the event of any payment under this Agreement, the Company shall be subrogated to the extent of such payment to all of the rights of recovery of Indemnitee, who shall execute all papers required and take all action necessary to secure such rights, including execution of such documents as are necessary to enable the Company to bring suit to enforce such rights.

(d) Except as provided in subparagraph (c) above, the Company shall not be liable under this Agreement to make any payment of amounts otherwise indemnifiable hereunder if and to the extent that Indemnitee has otherwise actually received such payment under any insurance policy, contract, agreement or otherwise.

(e) Except as provided in subparagraph (c) above, the Company's obligation to indemnify or advance Expenses hereunder to Indemnitee who is or was serving at the request of the Company as a director, officer, employee or agent of any other corporation, partnership, joint venture, trust, employee benefit plan or other enterprise shall be reduced by any amount Indemnitee has actually received as indemnification or advancement of expenses from such other corporation, partnership, joint venture, trust, employee benefit plan or other enterprise.

9. Exception to Right of Indemnification. Notwithstanding any provision in this Agreement, the Company shall not be obligated under this Agreement to make any indemnity in connection with any claim made against Indemnitee:

(a) for which payment has actually been made to or on behalf of Indemnitee under any insurance policy or other indemnity provision, except with respect to any excess beyond the amount paid under any insurance policy or other indemnity provision, provided, that the foregoing shall not affect the rights of Indemnitee; or

(b) for an accounting of profits made from the purchase and sale (or sale and purchase) by Indemnitee of securities of the Company within the meaning of Section 16(b) of the Securities Exchange Act of 1934, as amended, or similar provisions of state statutory law or common law; or

(c) in connection with any Proceeding (or any part of any Proceeding) initiated by Indemnitee, including any Proceeding (or any part of any Proceeding) initiated by Indemnitee against the Company or its directors, officers, employees or other indemnitees, unless (i) the Board authorized the Proceeding (or any part of any Proceeding) prior to its initiation, or (ii) the Company provides the indemnification, in its sole discretion, pursuant to the powers vested in the Company under applicable law.

10. Duration of Agreement. All agreements and obligations of the Company contained herein shall continue during the period Indemnitee is an officer or director of the Company (or is or was serving at the request of the Company as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise) and shall continue thereafter so long as Indemnitee shall be or become subject to any Proceeding (or any proceeding commenced under Section 7 hereof) by reason of his Corporate Status, whether or not he is acting or serving in any such capacity at the time any liability or expense is incurred for which indemnification can be provided under this Agreement. This Agreement shall be binding upon and inure to the benefit of and be enforceable by the parties hereto and their respective successors (including any direct or indirect successor by purchase, merger, consolidation or otherwise to all or substantially all of the business or assets of the Company), assigns, spouses, heirs, executors and personal and legal representatives; provided that Indemnitor shall not assign this Agreement without the prior written consent of the Company.

11. Security. To the extent requested by Indemnitee and approved by the Board, the Company may at any time and from time to time provide security to Indemnitee for the Company's obligations hereunder through an irrevocable bank line of credit, funded trust or other collateral. Any such security, once provided to Indemnitee, may not be revoked or released without the prior written consent of the Indemnitee.

12. Enforcement.

(a) The Company expressly confirms and agrees that it has entered into this Agreement and assumes the obligations imposed on it hereby in order to induce Indemnitee to serve as an officer or director of the Company, and the Company acknowledges that Indemnitee is relying upon this Agreement in serving as an officer or director of the Company.

(b) This Agreement constitutes the entire agreement between the parties hereto with respect to the subject matter hereof and supersedes all prior agreements and understandings, oral, written and implied, between the parties hereto with respect to the subject matter hereof.

(c) The Company shall not seek from a court, or agree to, a "bar order" which would have the effect of prohibiting or limiting the Indemnitee's rights to receive advancement of expenses which Indemnitee is entitled to receive under Section 5 of this Agreement.

13. Definitions. For purposes of this Agreement:

(a) "**Corporate Status**" describes the status of a person who is or was a director or officer of the Company or of any other corporation, partnership, joint venture, trust, employee benefit plan or other enterprise that such person is or was serving at the express written request of the Company.

(b) “**Disinterested Director**” means a director of the Company who is not and was not a party to the Proceeding in respect of which indemnification is sought by Indemnitee.

(c) “**Enterprise**” shall mean the Company and any other corporation, partnership, joint venture, trust, employee benefit plan or other enterprise that Indemnitee is or was serving at the express written request of the Company as a director, officer, employee, agent or fiduciary.

(d) “**Expenses**” shall include all reasonable attorneys’ fees, retainers, court costs, transcript costs, fees of experts, witness fees, travel expenses, duplicating costs, printing and binding costs, telephone charges, postage, delivery service fees and all other disbursements or expenses of the types customarily incurred in connection with prosecuting, defending, preparing to prosecute or defend, investigating, participating, or being or preparing to be a witness in a Proceeding, or responding to, or objecting to, a request to provide discovery in any Proceeding. Expenses also shall include Expenses incurred in connection with any appeal resulting from any Proceeding and any federal, state, local or foreign taxes imposed on the Indemnitee as a result of the actual or deemed receipt of any payments under this Agreement, including without limitation the premium, security for, and other costs relating to any cost bond, supersede as bond, or other appeal bond or its equivalent. Expenses, however, shall not include amounts paid in settlement by Indemnitee or the amount of judgments or fines against Indemnitee.

(e) “**Independent Counsel**” means a law firm, or a member of a law firm, that is experienced in matters of corporation law and neither presently is, nor in the past five years has been, retained to represent: (i) the Company or Indemnitee in any matter material to either such party (other than with respect to matters concerning Indemnitee under this Agreement, or of other indemnitees under similar indemnification agreements), or (ii) any other party to the Proceeding giving rise to a claim for indemnification hereunder. Notwithstanding the foregoing, the term “Independent Counsel” shall not include any person who, under the applicable standards of professional conduct then prevailing, would have a conflict of interest in representing either the Company or Indemnitee in an action to determine Indemnitee’s rights under this Agreement. The Company agrees to pay the reasonable fees of the Independent Counsel referred to above and to fully indemnify such counsel against any and all Expenses, claims, liabilities and damages arising out of or relating to this Agreement or its engagement pursuant hereto.

(f) “**Proceeding**” includes any threatened, pending or completed action, suit, arbitration, alternate dispute resolution mechanism, investigation, inquiry, administrative hearing or any other actual, threatened or completed proceeding, whether brought by or in the right of the Company or otherwise and whether civil, criminal, administrative or investigative, in which Indemnitee was, is or will be involved as a party or otherwise, by reason of such Indemnitee’s Corporate Status, by reason of any action taken by such Indemnitee or of any inaction on such Indemnitee’s part while acting in such Indemnitee’s Corporate Status; in each case whether or not he is acting or serving in any such capacity at the time any liability or expense is incurred for which indemnification can be provided under this Agreement; including one pending on or before the date of this Agreement, but excluding one initiated by an Indemnitee pursuant to Section 7 of this Agreement to enforce his rights under this Agreement.

14. Severability. The invalidity or unenforceability of any provision hereof shall in no way affect the validity or enforceability of any other provision. Further, the invalidity or unenforceability of any provision hereof as to either Indemnitee or Appointing Stockholder shall in no way affect the validity or enforceability of any provision hereof as to the other. Without limiting the generality of the foregoing, this Agreement is intended to confer upon Indemnitee and Appointing Stockholder indemnification rights to the fullest extent permitted by applicable laws. In the event any provision hereof conflicts with any applicable law, such provision shall be deemed modified, consistent with the aforementioned intent, to the extent necessary to resolve such conflict.

15. Modification and Waiver. No supplement, modification, termination or amendment of this Agreement shall be binding unless executed in writing by both of the parties hereto. No waiver of any of the provisions of this Agreement shall be deemed or shall constitute a waiver of any other provisions hereof (whether or not similar) nor shall such waiver constitute a continuing waiver.

16. Notice By Indemnitee. Indemnitee agrees promptly to notify the Company in writing upon being served with or otherwise receiving any summons, citation, subpoena, complaint, indictment, information or other document relating to any Proceeding or matter which may be subject to indemnification covered hereunder. The failure to so notify the Company shall not relieve the Company of any obligation which it may have to Indemnitee under this Agreement or otherwise unless and only to the extent that such failure or delay materially prejudices the Company.

17. Notices. All notices and other communications given or made pursuant to this Agreement shall be in writing and shall be deemed effectively given: (a) upon personal delivery to the party to be notified, (b) when sent by confirmed electronic mail or facsimile if sent during normal business hours of the recipient, and if not so confirmed, then on the next business day, (c) five (5) days after having been sent by registered or certified mail, return receipt requested, postage prepaid, or (d) one (1) day after deposit with a nationally recognized overnight courier, specifying next day delivery, with written verification of receipt. All communications shall be sent:

(a) To Indemnitee at the address set forth below Indemnitee signature hereto.

(b) To the Company at the address set forth below the Company's signature hereto.

or to such other address as may have been furnished to Indemnitee by the Company or to the Company by Indemnitee, as the case may be.

18. Counterparts. This Agreement may be executed in two (2) or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same the same instrument. Counterparts may be delivered via facsimile, electronic mail (including pdf or any electronic signature complying with the U.S. federal ESIGN Act of 2000, *e.g.*, www.docusign.com) or other transmission method and any counterpart so delivered shall be deemed to have been duly and validly delivered and be valid and effective for all purposes.

19. Headings. The headings of the paragraphs of this Agreement are inserted for convenience only and shall not be deemed to constitute part of this Agreement or to affect the construction thereof.

20. Governing Law and Consent to Jurisdiction. This Agreement and the legal relations among the parties shall be governed by, and construed and enforced in accordance with, the laws of the State of Delaware, without regard to its conflict of laws rules. The Company and Indemnitee hereby irrevocably and unconditionally (i) agree that any action or proceeding arising out of or in connection with this Agreement shall be brought only in the Chancery Court of the State of Delaware (the "**Delaware Court**"), and not in any other state or federal court in the United States of America or any court in any other country, (ii) consent to submit to the exclusive jurisdiction of the Delaware Court for purposes of any action or proceeding arising out of or in connection with this Agreement, (iii) waive any objection to the laying of venue of any such action or proceeding in the Delaware Court, and (iv) waive, and agree not to plead or to make, any claim that any such action or proceeding brought in the Delaware Court has been brought in an improper or inconvenient forum.

SIGNATURE PAGE TO FOLLOW

IN WITNESS WHEREOF, the parties hereto have executed this Indemnification Agreement on and as of the day and year first above written.

BLUE WATER VACCINES INC.

By: _____

Name: Joe Hernandez

Title: CEO

Address:

[Signature page to Indemnification Agreement]

IN WITNESS WHEREOF, the parties hereto have executed this Indemnification Agreement on and as of the day and year first above written.

INDEMNITEE

Name:

Address:

[Signature page to Indemnification Agreement]

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the inclusion in this Registration Statement on Form S-1 and related prospectus of our report dated August 20, 2021, with respect to the financial statements of Blue Water Vaccines, Inc. (Company) as of December 31, 2020 and 2019, and for the two years then ended (which report includes an explanatory paragraph regarding the existence of substantial doubt about the Company's ability to continue as a going concern), and to the reference to us under the heading "Experts" in this Registration Statement and accompanying prospectus on Form S-1.

/s/ Mayer Hoffman McCann P.C.

Los Angeles, California
October 8, 2021

Consent to Being Named as a Director Nominee

In connection with the filing by Blue Water Vaccines, Inc. (the "Company") of the Registration Statement on Form S-1 with the Securities and Exchange Commission under the Securities Act of 1933, as amended (the "Securities Act"), I hereby consent, pursuant to Rule 438 of the Securities Act, to being named as a nominee to the board of directors of the Company in the Registration Statement and any and all amendments and supplements thereto. I also consent to the filing of this consent as an exhibit to such Registration Statement and any amendments thereto.

Dated: October 8, 2021

/s/ James Sapirstein

James Sapirstein