

2,432,473

Shares of

Common Stock



This prospectus supplement updates and supplements the prospectus dated May 20, 2022 (the “**Prospectus**”), which forms a part of our Registration Statement on Form S-1, as amended (Registration No. 333-264646) filed pursuant to Rule 462(b) promulgated under the Securities Act of 1933, as amended (the “**Securities Act**”) (the “**Registration Statement**”). This prospectus supplement is being filed to update and supplement the information in the Prospectus with the information contained in our Current Report on Form 8-K, filed with the Securities and Exchange Commission on June 24, 2022 (the “**Current Report on Form 8-K**”). Accordingly, we have attached the Current Report on Form 8-K to this prospectus supplement.

The Prospectus and this prospectus supplement relate to the offer and resale of up to an aggregate of 2,432,473 shares of common stock, par value \$0.00001 per share (the “Placement Shares”), consisting of (a) 590,406 Placement Shares, (b) 70,849 Placement Shares (“Wainwright Warrant Shares”) issuable upon exercise of the warrants (the “Wainwright Warrants”) issued to H.C. Wainwright & Co., LLC, or its designees, in a private transaction on April 19, 2022 (the “Private Placement”), (c) 590,406 Placement Shares (“Prefunded Warrant Shares”) issuable upon exercise of the pre-funded warrants (the “Prefunded Warrants”) issued to the selling stockholders in the “Private Placement” determined as if the outstanding warrants were exercised in full as of the trading day immediately preceding the date this registration statement was initially filed with the SEC, each as of the trading day immediately preceding the applicable date of determination and all subject to adjustment as provided in the registration right agreement and (d) 1,180,812 Placement Shares (“Preferred Investment Option Shares,” together with the Prefunded Warrant Shares and the Wainwright Warrant Shares, the “Warrant Shares”) issuable upon exercise of the preferred investment options (the “Preferred Investment Options”, together with the Prefunded Warrants and the Wainwright Warrants, the “Warrants”), issued to the selling stockholders in the Private Placement determined as if the outstanding Preferred Investment Options were exercised in full as of the trading day immediately preceding the date this registration statement was initially filed with the SEC, each as of the trading day immediately preceding the applicable date of determination and all subject to adjustment as provided in the registration right agreement, all of which were acquired by the selling stockholders in the Private Placement. The holders of the Private Placement Shares, the Warrant Shares and the Warrants are each referred to herein as a “Selling Stockholder” and collectively as the “Selling Stockholders.”

The Prospectus and this prospectus supplement also covers any additional shares of common stock that may become issuable from time to time upon any anti-dilution adjustment pursuant to the terms of the Warrants issued to the Selling Stockholders by reason of stock splits, stock dividends, and other events described therein.

The Selling Stockholders, or their respective transferees, pledgees, donees or other successors-in-interest, may sell the Placement Shares or the Warrant Shares through public or private transactions at prevailing market prices, at prices related to prevailing market prices or at privately negotiated prices. The Selling Stockholders may sell any, all or none of the securities offered by the Prospectus, and we do not know when or in what amount the Selling Stockholders may sell their Placement Shares or Warrant Shares hereunder following the effective date of this registration statement. We provide more information about how a Selling Stockholder may sell its Placement Shares or Warrant Shares in the section titled “Plan of Distribution” on page 160 of the Prospectus.

This prospectus supplement should be read in conjunction with the Prospectus as amended and supplemented to date. This prospectus supplement updates and supplements the information in the Prospectus. If there is any inconsistency between the information in the Prospectus and this prospectus supplement, you should rely on the information in this prospectus supplement.

We are registering the Placement Shares and Warrant Shares on behalf of the Selling Stockholders, to be offered and sold by them from time to time. We will not receive any proceeds from the sale of our common stock by the Selling Stockholders in the offering described in the Prospectus. We cannot predict when and in what amounts or if the Warrants will be exercised. We have agreed to bear all of the expenses incurred in connection with the registration of the Placement Shares and the Warrant Shares. The Selling Stockholders will pay or assume discounts, commissions, fees of underwriters, selling brokers or dealer managers and similar expenses, if any, incurred for the sale of the Placement Shares and the Warrant Shares.

The common stock is listed on the Nasdaq Capital Market (“**Nasdaq**”) under the symbol “BWV.” The last reported sale price of the shares of common stock on Nasdaq on June 23, 2022 was \$2.36 per share. Our shares of common stock have experienced extreme volatility in market prices and trading volume since listing. From February 18, 2022 (the date our shares were initially listed on Nasdaq) to the date hereof, the market price of our common stock has fluctuated from an intra-day low on Nasdaq of \$3.26 on May 2, 2022 to an intra-day high of \$90.90 per share on February 22, 2022. By comparison, our initial public offering, which closed on February 23, 2022, was conducted at \$9.00 per share. During this time, we have made one announcement regarding certain research developments for our vaccine candidates. Notwithstanding the foregoing, since our initial public offering on February 18, 2022, there were no material recent publicly disclosed changes in the financial condition or results of operations of the Company, such as our earnings or revenue, that are consistent with or related to the changes in our stock price. The trading price of our common stock has been, and may continue to be, subject to wide price fluctuations in response to various factors, many of which are beyond our control, including those described under the heading “Risk Factors” beginning on page 12 of the Prospectus.

Investing in our securities involves a high degree of risk. Please read “Risk Factors” beginning on page 12 of the Prospectus.

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

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

FORM 8-K

CURRENT REPORT

Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): June 24, 2022

Blue Water Vaccines Inc.

(Exact name of registrant as specified in its charter)

Delaware

(State or other Jurisdiction of
Incorporation)

001-41294

(Commission File Number)

83-2262816

(IRS Employer
Identification No.)

201 E. Fifth Street, Suite 1900 Cincinnati, Ohio

(Address of Principal Executive Offices)

45202

(Zip Code)

Registrant's telephone number, including area code: **(513) 620-4101**

(Former name or former address, if changed since last report.)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Securities registered pursuant to Section 12(b) of the Act:

Title of Each Class	Trading Symbol(s)	Name of Each Exchange on Which Registered
Common Stock, par value \$0.00001 per share	BWV	The Nasdaq Stock Market LLC

Emerging growth company

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 13(a) of the Exchange Act.

Item 8.01. Other Events.

Due to delays caused by manufacturing, disruptions relating to suppliers, and those caused by the global COVID-19 pandemic, the Company has adjusted the estimated timeline previously reported in its public filings with respect to the development of its vaccine candidates, BWV-102 and BWV-302 to account for additional time needed to optimize vaccine platform approach and perform sufficient preclinical studies. An updated summary of the Company’s pipeline for all vaccine candidates is provided as follows:

Infectious Disease Program	Candidate	Preclinical	Phase 1	Phase 2	Phase 3	Collaborator	Status
Universal Flu	BWV-101						1H22: preclinical proof of concept
H1 pre-pandemic	BWV-102						1H23: start IND-enabling studies
S. pneumo induced AOM (intranasal)	BWV-201						1H22: start IND-enabling studies
Norovirus / Rotavirus	BWV-301						1H22: preclinical proof of concept
Norovirus / Malaria	BWV-302						2H23: start IND-enabling studies

The FDA regulatory approval process is lengthy and time-consuming, and we may experience significant delays in the clinical development and regulatory approval of our vaccine candidates. Our vaccine candidates are in early stages of development and may fail in development or suffer delays that materially and adversely affect their commercial viability. We may be unable to complete development of or commercialize our vaccine candidates or experience significant delays in doing so due to regulatory or other uncertainties.

Additional details regarding the Company and its vaccine candidates are available in the Company’s updated corporate presentation, which is attached hereto as Exhibit 99.1.

Item 9.01. Financial Statements and Exhibits.

(d) Exhibits

Exhibit No.	Description
99.1	Blue Water Vaccines Inc. Corporate Presentation, as of June 2022
104	Cover Page Interactive Data File (embedded within the Inline XBRL document).

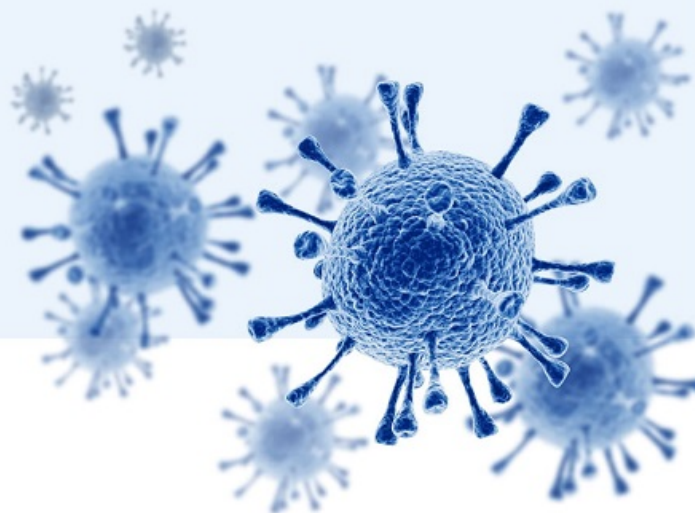
SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

Blue Water Vaccines Inc.

Date: June 24, 2022

By: /s/ Joseph Hernandez
Joseph Hernandez
Chief Executive Officer



June 2022

Corporate Presentation
NASDAQ: BWV

The Presentation (the "Presentation") has been prepared by Blue Water Vaccines, Inc. (the "Company"). Certain information contained herein has been derived from sources prepared by third parties. While such information is believed to be reliable for the purposes used herein, the Company makes no representation or warranty with respect to the accuracy of such information.

This Presentation does not constitute an offer to sell, or the solicitation of an offer to buy, any securities of the Company in any jurisdiction, domestic or foreign, where the offer, solicitation or sale is not permitted or would be unlawful prior to registration or qualification under the securities laws of any such state or jurisdiction.

FORWARD LOOKING STATEMENTS:

Certain statements in this presentation (the "Presentation") has been prepared by Blue Water Vaccines, Inc. (the "Company"). This presentation contains forward-looking within the meaning of the Private Securities Litigation Reform Act of 1995. These statements may be identified by the use of forward-looking words such as "anticipate," "believe," "forecast," "estimate," "expect," and "intend," among others. These forward-looking statements are based on BWV's current expectations and actual results could differ materially. There are a number of factors that could cause actual events to differ materially from those indicated by such forward-looking statements. These factors include, but are not limited to, risks related to the development of BWV's vaccine candidates, including, but not limited to BWV-301; the failure to obtain FDA clearances or approvals and noncompliance with FDA regulations; delays and uncertainties caused by the global COVID-19 pandemic; risks related to the timing and progress of clinical development of our product candidates; our need for additional financing; uncertainties of patent protection and litigation; uncertainties of government or third party payor reimbursement; limited research and development efforts and dependence upon third parties; and substantial competition. As with any vaccine under development, there are significant risks in the development, regulatory approval and commercialization of new products. BWV does not undertake an obligation to update or revise any forward-looking statement. Investors should read the risk factors set forth in BWV's Annual Report on Form 10-K for the fiscal year ended December 31, 2021, filed with the Securities and Exchange Commission (the "SEC") on March 31, 2022, and periodic reports filed with the SEC on or after the date thereof. All of BWV's forward-looking statements are expressly qualified by all such risk factors and other cautionary statements. The information set forth herein speaks only as of the date thereof.



SCIENCE. INNOVATION. IMMUNITY.

We believe science innovation improves lives. That's why we are researching and developing transformational vaccines to prevent infectious diseases worldwide.

BWV Highlights



Broad and diverse vaccine pipeline:
Novel preclinical vaccine candidates

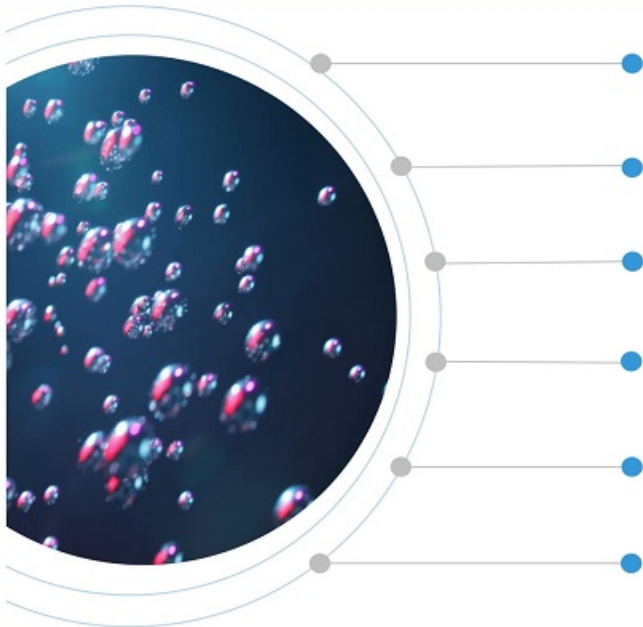


Esteemed Collaborators:
University of Oxford,
Cincinnati Children's,
St. Jude's Children's



Secured Funding:
Recent IPO and PIPE provides lengthened cash runway for development

Overview



Broad and diverse vaccine pipeline: Novel preclinical vaccine candidates

Proprietary Versatile Vaccine Platform: POC, multi-valent, scalable, and flexible discovery engine with broad therapeutic capabilities

Lead Vaccine Candidates: Targeting Universal and H1 Influenza utilizing proprietary influenza epitopes of limited variability (ELV) that remain present through viral mutation

AOM Prevention Candidate: Targeting *S. pneumoniae* utilizing a proprietary live-attenuated strain with intranasal delivery

Esteemed Collaborators: University of Oxford, Cincinnati Children's, St. Jude's Children's

Opportunistic Business model: Exclusive licenses of assets and platforms, broad business development, opportunistic growth and expansion

Accomplished Management Team and Board of Directors

Led by experienced entrepreneurs who bring sustained records of successfully leading innovation and commercialization



Joseph Hernandez
Founder, Chairman & Chief Executive Officer

- Founder, Blue Water Acquisition Corporation, SPAC, (now Clarus, CRXT); Founder, Chairman Noachis Terra, Inc. (Oragenics, Inc)
- M.Sc. Candidate, Chronic Disease Epidemiology, Yale; MBA, University of Florida



Andrew Skibo
Head Biologic Operations

- Biological Manufacturing expertise
- Former, EVP, Operations, AstraZeneca/MedImmune
- M.S., Chemical Engineering, Massachusetts Institute of Technology



Ronald Cobb, Ph.D.
Head of Science and Discovery

- Vaccine development expertise
- Former CSO, Ology Bioservices
- Ph.D, Biochemistry, Medical College of Georgia



Erin Henderson
Chief Business Officer

- Administrative, corporate and stakeholder relations expertise
- Former Managing Principal, The Aetos Group
- B.S., Chemical Engineering, Auburn University



Jon Garfield
Chief Financial Officer

- Financial and M&A expertise
- Prior big four accounting firm experience
- B.B.A, Accounting, University of Texas at Austin

Board of Directors

Kimberly Murphy

CEO and Director at Oragenics, Inc. (NYSE: OGEN), Board of Directors at Clarus (NASDAQ: CRXT)

James Sapirstein

President & CEO, First Wave Biopharma (NASDAQ: FWBI)

Allan Shaw

CFO, Portage Biotech Inc. (NASDAQ: PRTG)

Michael Venerable

CEO, CincyTech



Partnered with Renowned Research Leaders



Sunetra Gupta, Ph.D.

Co-Inventor, Universal Influenza vaccine
Department of Zoology, University of Oxford



Xi Jason Jiang, Ph.D.

Co-Inventor, S & P Particle VLP Platform,
Norovirus-Rotavirus vaccine
Professor, University of Cincinnati,
Department of Pediatrics



Ming Tan, Ph.D.

Co-Inventor, S & P Particle VLP Platform,
Norovirus-Rotavirus vaccine
Assistant Professor, University of
Cincinnati, Department of Pediatrics



Jason Rosch, Ph.D.

Inventor, *S. pneumoniae* vaccine
Associate Member, St. Jude Faculty



Scientific Advisory Board

Sunetra Gupta, Ph.D.

Professor, University of Oxford

C. David Zarley, Ph.D.

Vaccine Development, Vice
President., (Retired), Pfizer, Inc.

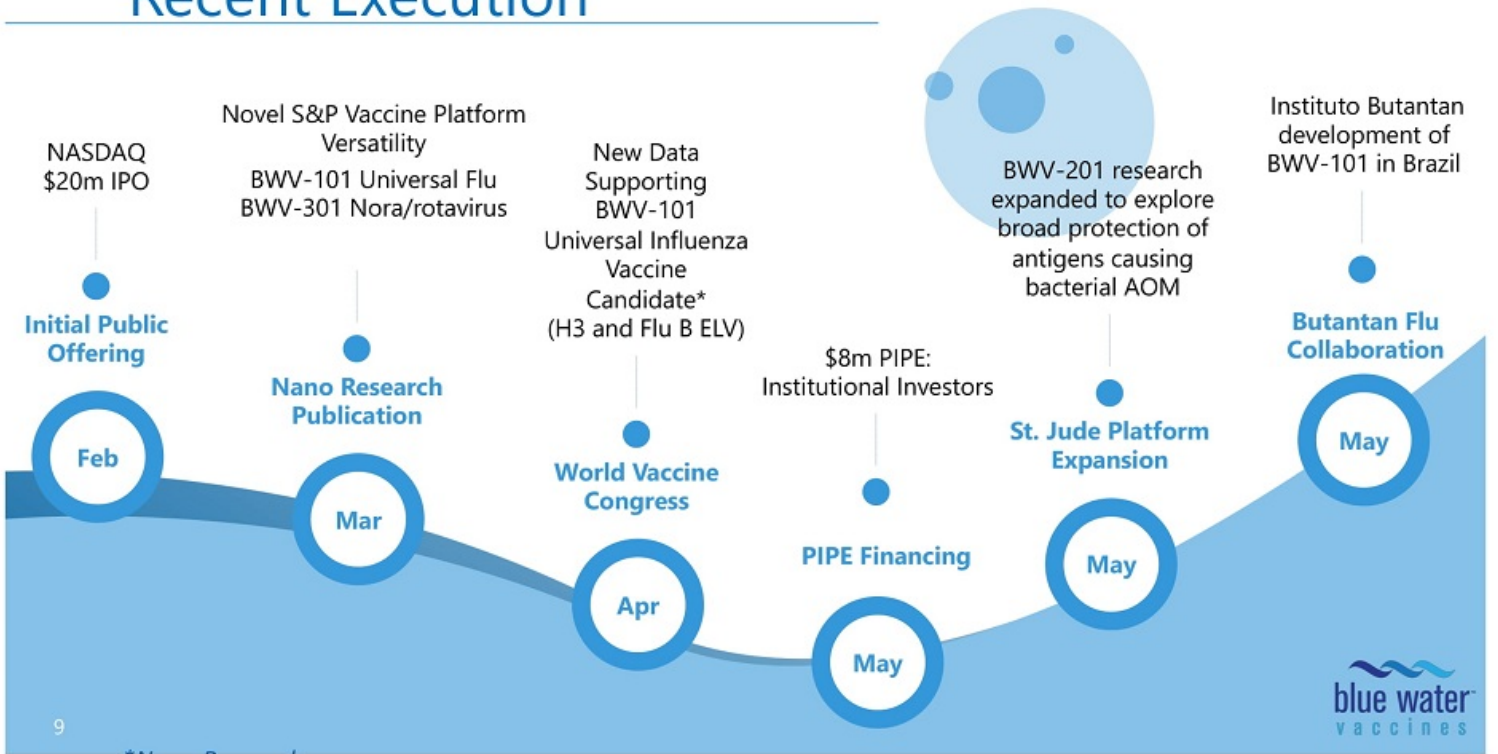
John Rice, Ph.D.

Life Sciences Managing Director,
CincyTech

Novel Vaccine Pipeline

Infectious Disease Program	Candidate	Preclinical	Phase 1	Collaborator
Universal Flu	BWV-101			
H1 pre-pandemic	BWV-102			
S. pneumo induced AOM (intranasal)	BWV-201			
Norovirus / Rotavirus	BWV-301			
Norovirus / Malaria	BWV-302			

Recent Execution





Our Vaccine Candidates



BWV-101: Universal Flu

BWV-102: H1



*Aiming to eradicate the flu,
universally, with a smart vaccine
that targets frequently occurring
virulent epitopes.*



Influenza BWV-101 BWV-102

Need for broad protection flu vaccine

- Current annual flu vaccine effectiveness is up to 50%
- 1 billion influenza infections each year, 3 – 5 million of which are considered severe
- Influenza A&B cause most of human illness and the flu season

Differentiated Approach

- Mathematical model for epitope identification
- Global license with University of Oxford
- Epitopes of limited variability (ELV's) naturally immunogenic and cross-protective
- ELV's are ideal vaccine targets for broad long-term protection

Current Status

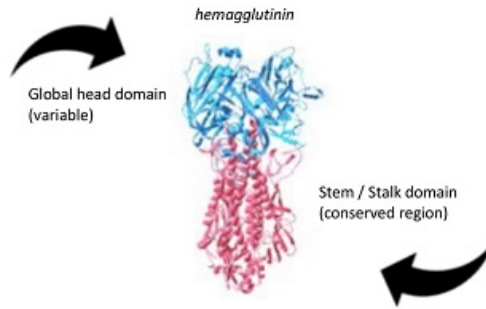
- BWV-101: Universal flu (H1, H3, Flu B), BWV-102: H1 pre-pandemic flu
- POC data for H1N1
- New H3, and flu B data presented at the World Vaccine Congress
- Provisional patents have been filed for additional ELV's in H3N2 and flu B

Our Approach

Current influenza vaccine can be divided into two groups:

Target regions that are highly immunogenic of high variability or evolve frequently.

These vaccines need to be updated regularly and administered annually.



Target regions that are conserved with low immunogenicity.

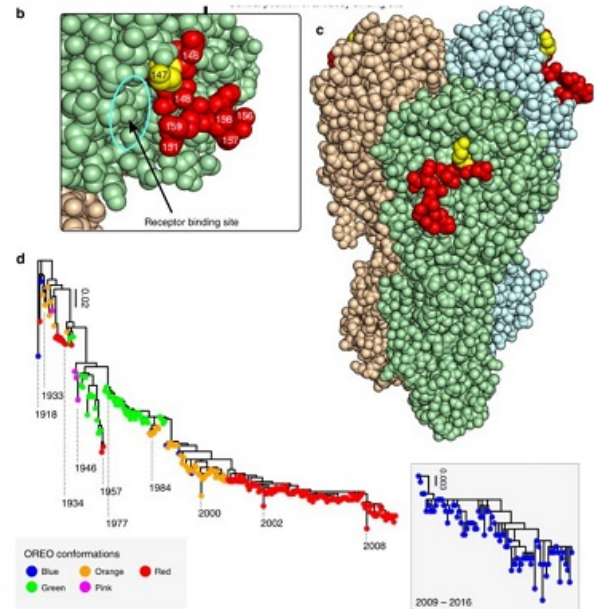
There is less need for updating these vaccines, but they provide a poor immune response.

Our vaccine overcomes such issues by targeting regions, or epitopes, of the virus which are of limited variability. These epitopes remain present through the virus mutations.

By identifying multiple epitopes of limited variability, it is possible to produce vaccines or a single vaccine to protect against all previous and future H1 flu strains.

Proprietary Epitopes of Limited Variability (ELVs)*

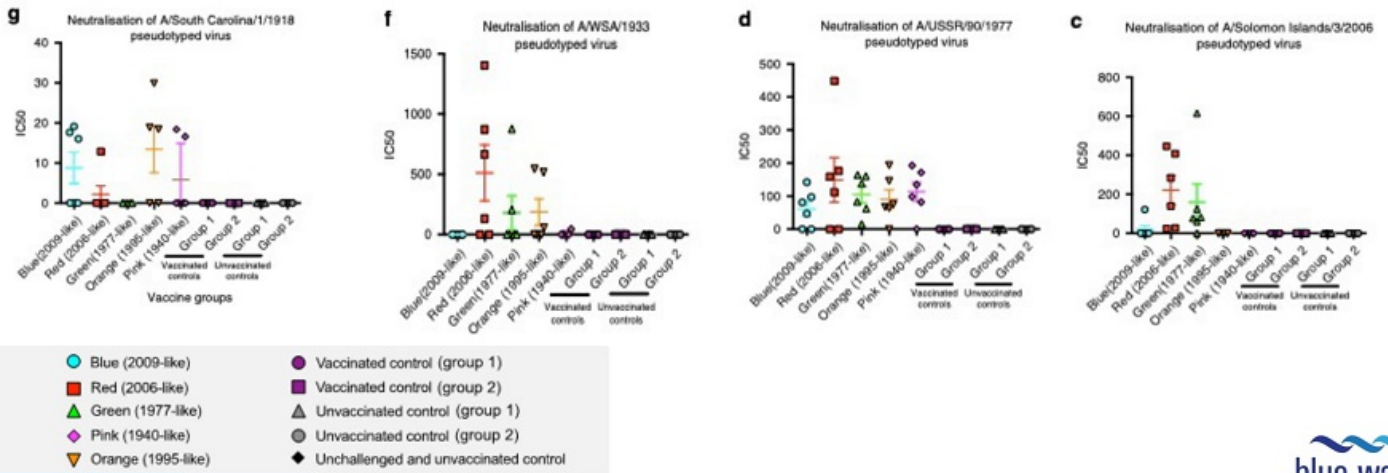
- Antigen/epitope evolution is limited in certain regions of the influenza virus
- ELVs are naturally immunogenic
 - Drive antigenic evolution which could result in a pandemic
 - Cycle between limited number of different conformations
- We licensed IP for cross-protective epitopes for our vaccine candidates:
 - Developed at the University of Oxford by Dr. Sunetra Gupta
 - Mathematical research has pinpointed ELVs that provide immunity to multiple strains
 - Identified ELVs in historical H1, H3 influenza and influenza B strains



ELV vaccine Proof-of-concept*

Vaccination of mice with epitopes from H1N1 influenza viruses circulating in 2006 and 1977 provided protection against a strain that last circulated in 1934

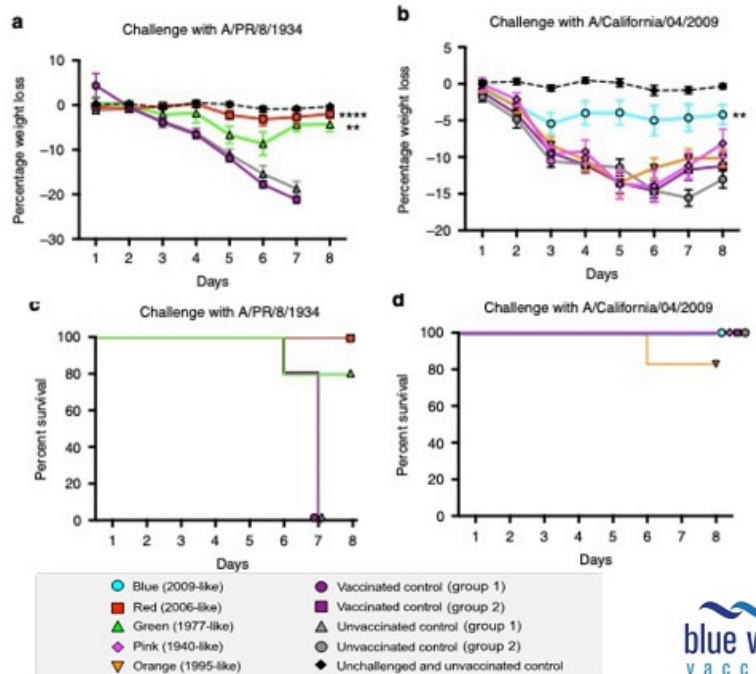
Data demonstrate H1N1 ELVs provide cross-reactive immune response in historical influenza strains



ELV vaccine Proof-of-concept*

Influenza challenge

- Data in mice models demonstrated that vaccinated mice did not have as severe of a reduction in weight loss compared to the control groups
- Survival curves demonstrated that vaccinated mice were able to produce antibodies to protect against historical flu strains



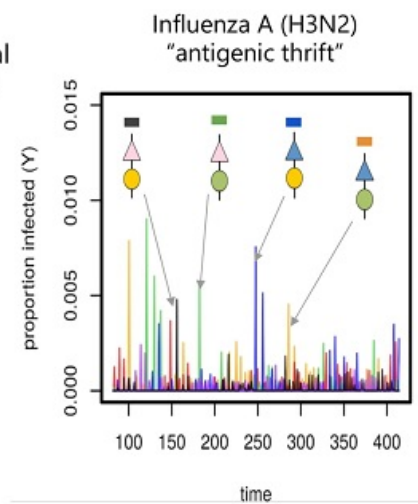
Candidates

Influenza A H1N1:
"Oreo"

Influenza A H3N2:
"INDY"
"MAIZ"

Influenza B
(Yamagata & Victoria):
"TATI"

- Mice data demonstrated cross-reactive immune response in historical influenza strains such as H10N3 (bird flu), and H5NX, H7NX, and H9NX
- Two epitopes with either 4 or 6 variants. Currently generating additional neutralization data
- One epitope in 7 variants to cover the variability seen across these two lineages.

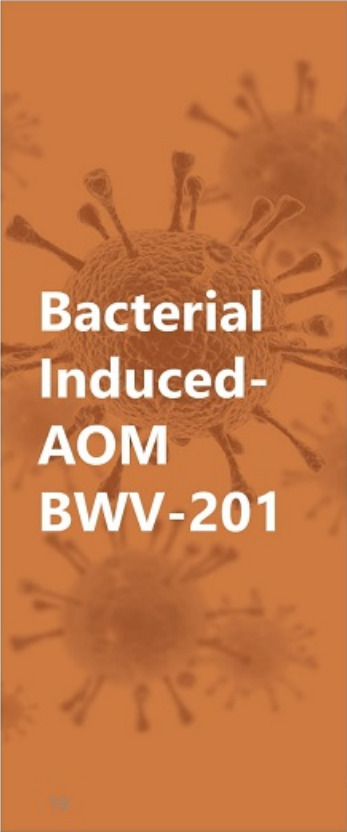


BWV-201: *S. Pneumoniae*

induced acute otitis media (AOM)



*Blue Water Vaccines is committed to alleviating pain in children who suffer from *S. pneumoniae* induced middle ear infections.*



Bacterial Induced- AOM BWV-201



Need for broad protection vaccine

- 5 million cases of AOM in the United States annually
- Estimated \$4.3 billion USD is spent on AOM treatment each year in the United States alone
- Complications from AOM include sensorineural hearing loss (SNHL)

Differentiated Approach

- Global license with St. Jude Children's Research Hospital
- BWV-201 is a live attenuated serotype-independent vaccine
- Intranasal delivery
- Production of vaccine is straightforward; utilizes the entire bacterium

Current Status

- Research funded by BWV to evaluate the viability of this vaccine platform to potentially provide protection against multiple pathogens including, non-typeable *Haemophilus influenzae* (NTHi)
- License expansion, Provisional patented filed



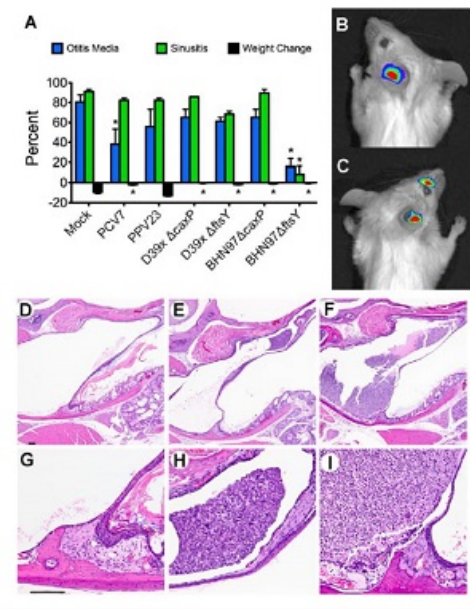
BWV-201 Proof of Concept*

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.

Vaccines in Study	Serotypes
D39DftsY	2
D39DcaxP	2
BHN97DftsY	19F
BHN97DcaxP	19F
PCV7	4, 6B, 9V, 14, 18C, 19A, 19F & 23 F
PCV13	1, 3, 4, 5, 6B, 7F, 9V, 14, 18C, 19A, 19F & 23 F
PPV23	1, 3, 4, 5, 6B, 7F, 8, 9V, 10A, 11A, 12F, 14, 15, 17A, 18C, 19A, 19F, 20, 22F, 23F & 33 F
Mock	None

Pre-Clinical Data: Mouse Model*



Vaccine Protection against AOM and sinusitis

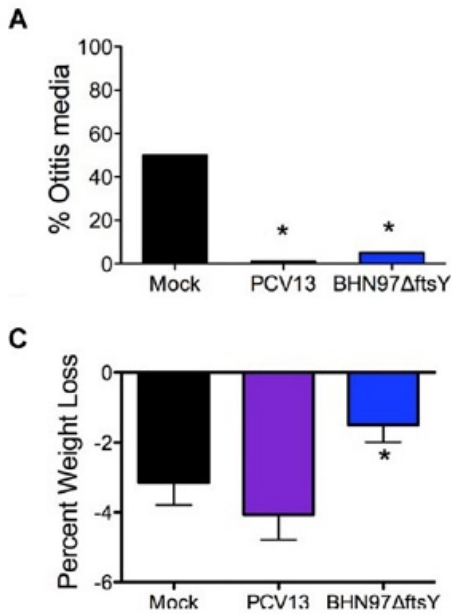
- 25-31 per group, performed at least twice
- Vaccinated with either Mock or live attenuated with deletions on either type 2 or 19 F background.
- Challenged with bioluminescent BMH97X (type 19F), imaged twice daily for AOM and sinusitis

A. The proportion of mice developing infection of ear or sinus by Xenogen imaging PPV23 was used as a negative control

B.,C. Representative pictures from bioluminescent imaging with (B) AOM and (C) both AOM and sinusitis.

D-I. Representative histopathology at 4x (top row) and 40x (bottom row) of (D,G) normal ear, (E,H) mouse with mild AOM and (F,I) marked AOM

Pre-Clinical Data: Mouse Model*



Vaccine protection against heterologous challenge

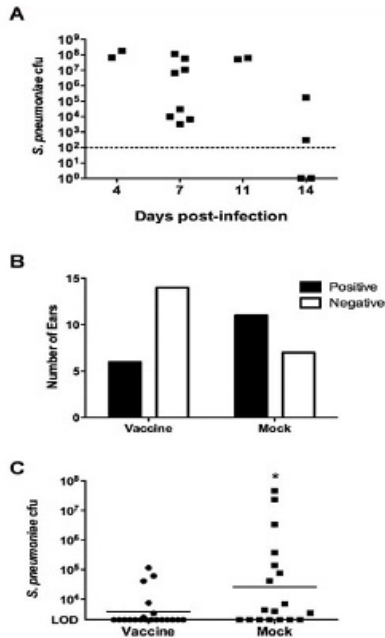
- Mice were mock-vaccinated with PBS (Mock) or vaccinated with PCV13 or a live attenuated vaccine deleted for FtsY on a type 19F background (BHN97ΔftsY).

A. Mice were challenged with a bioluminescent version of *S. pneumoniae* strain BNH54 (type 7F) and assessed by imaging for development of otitis media over 72 h (24 h time point is pictured).

C. Weight loss observed in the animals further supported the observed protection. PCV13 contains type 7F antigen, so this was a homologous challenge for the PCV13 group but a heterologous challenge for the BHN97ΔftsY group.

22 Rosch, Jason W et al. "A live-attenuated pneumococcal vaccine elicits CD4+ T-cell dependent class switching and provides serotype independent protection against acute otitis media." *EMBO molecular medicine* vol. 6,1 (2014): 141-54. doi:10.1002/emmm.201202150

Pre-Clinical Data: Chinchilla Model*



Vaccine protection in chinchilla model of AOM

A. The BHN97 strain is capable of causing AOM in chinchillas via intranasal administration as observed by recoverable bacterial colony forming units (CFUs) from the middle ear (A) following challenge.

B.,C. 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).



S&P Nanoparticle VLP

BWV 301: Norovirus-Rotavirus



We aim to mitigate the global abundance of pathogen mediated digestive tract infections via our novel norovirus/rotavirus chimeric vaccine.

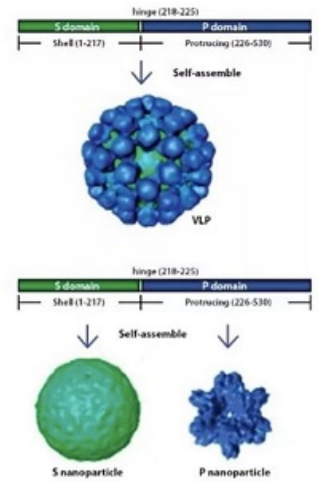
Versatile Nanoparticle VLP Vaccine Platform

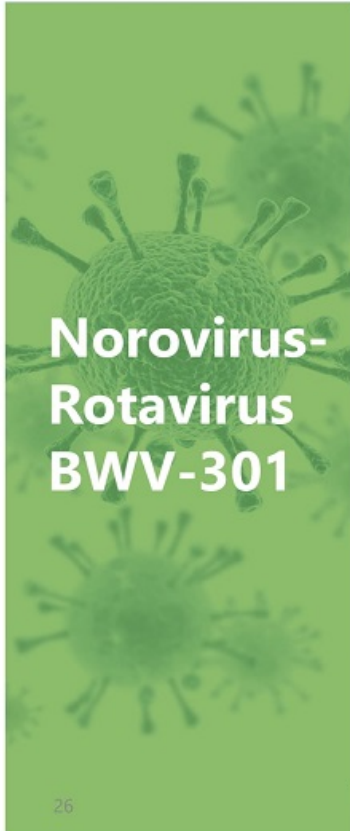
Our novel Shell and Protrusion (S&P) norovirus platform
combines 2 or more immunogenic components:
a norovirus antigen + at least one additional antigen = novel vaccines

Discovery Engine:
potentially stable,
flexible,
cost-effective
nanoparticles

POC:
animal models
showed strong
enhanced
immunogenicity

Broad therapeutic
capabilities
&
Partnering
opportunities





Norovirus- Rotavirus BWV-301



Impact / Need

- Norovirus is the most common cause of acute gastroenteritis, 700 million global annual cases
- Rotavirus causes an estimated 111 million annual episodes of diarrhea
- Rotavirus is the most common cause of diarrheal disease among infants and young children
- No norovirus vaccine is available to date

BWV's Differentiated Approach

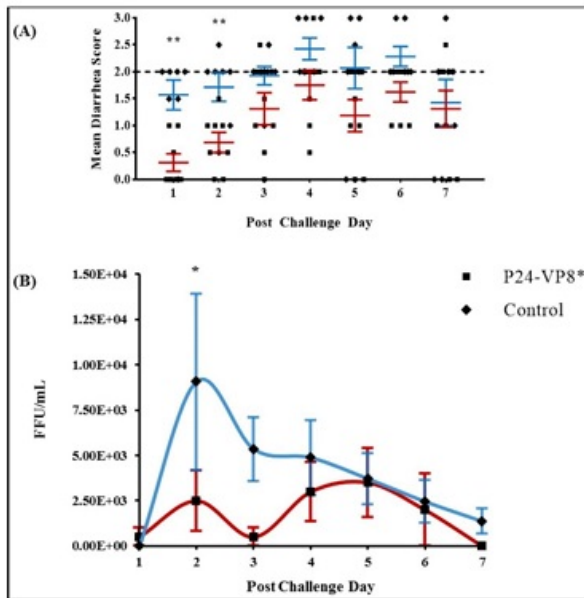
- Our S&P platform was co-invented by Xi Jason Jiang, Ph.D., and Ming Tan, Ph.D., of the Division of Infectious Disease at the Cincinnati Children's
- ELV's are ideal vaccine targets for broad long-term protection

Current Status

- Preclinical data from gnotobiotic pig studies showed BWV-301 prevented severe gastroenteritis and reduces viral shedding.
- Identification of S₆₀ - VP8 (rotavirus spike protein)
- Preclinical mouse sera after immunization with the S₆₀-VP8* nanoparticle exhibited higher neutralizing activity

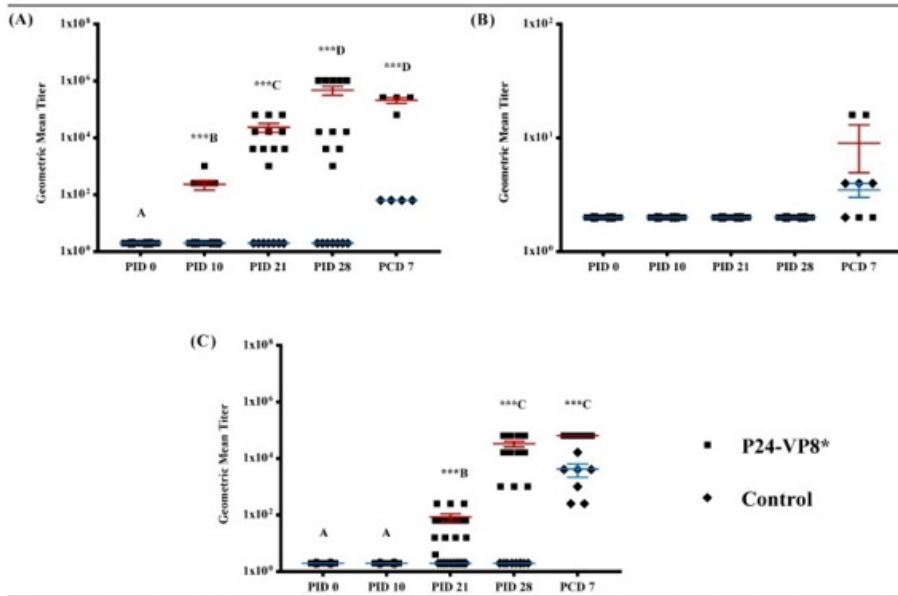


Pre-clinical Data: Gnotobiotic Pig Model*



P₂₄-VP8* vaccine protected against VirHRV diarrhea and reduced overall viral shedding.

Pre-clinical Data: Gnotobiotic Pig Model*



Vaccine provided neutralizing antibodies in serum collected from gnotobiotic pigs

Pre-clinical Data: Mouse Model*

- Vaccination of mice with vaccine candidate P₂₄ particle presenting the small domain of the CS protein (3D7-PP) and two controls. Mice were immunized three times with the chimeric nanoparticle using aluminum hydroxide as an adjuvant. Sera was collected and evaluated.
- Data demonstrate vaccine candidate produces a higher titer

Antibody titer after 2nd immunization

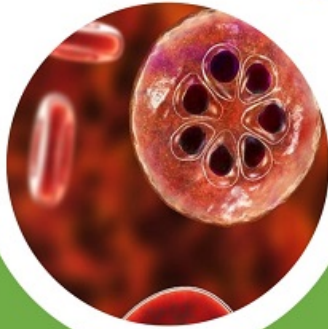
	3D7-PP	3D7-His	3D7-GST
Mouse-1	25600	800	400
Mouse-2	51200	<100	400
Mouse-3	25600	400	400
Mouse-4	25600	<100	800

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



BWV 302: Norovirus-Malaria



We aim to mitigate the global abundance of pathogen mediated digestive tract infections via our novel norovirus/malaria chimeric vaccine.

Norovirus-Malaria

Overview

Worldwide estimates each year:

Caused by protozoan parasites from the Plasmodium family:

- About 219 million cases were reported in 2019 leading to an estimated 409,000 deaths globally.*
- Approximately 67% of the deaths can be attributed to children.*

Economic Impact

- Direct cost of \$12 billion worldwide each year**

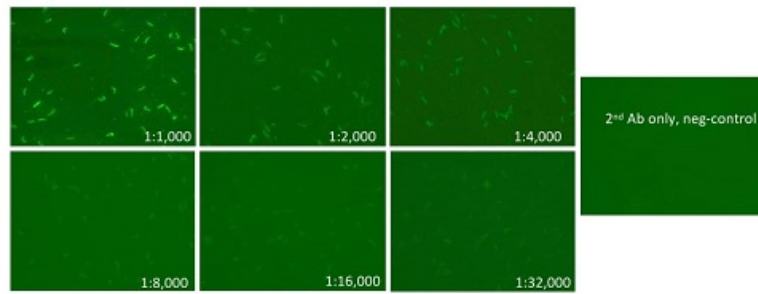
Current Treatment limitations^{*,***,****}

- One vaccine currently available for treatment with limited authorization by the EMA in high transmission regions, outside of the of the European Union.
- The two most common treatments are Chloroquine phosphate and Artemisinin-based combination (ACT) therapies

There is growing concern about resistance to mosquito control pesticides and existing malaria treatment^{,****}*

Pre-clinical Data: Mouse Model*

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



- The antibodies were also shown to recognize the plasmodium falciparum 3D7 strain using immunofluorescence assays

BWV: Highlights

1

Developing a broad portfolio of vaccine candidate

Influenza, AOM induced s. pneumo, noro-rotavirus

2

New ELV data for universal influenza

Presented at WVC

3

Recent expansion of St. Jude Research for BWV-201

Potential to provide broad coverage of AOM causing antigens

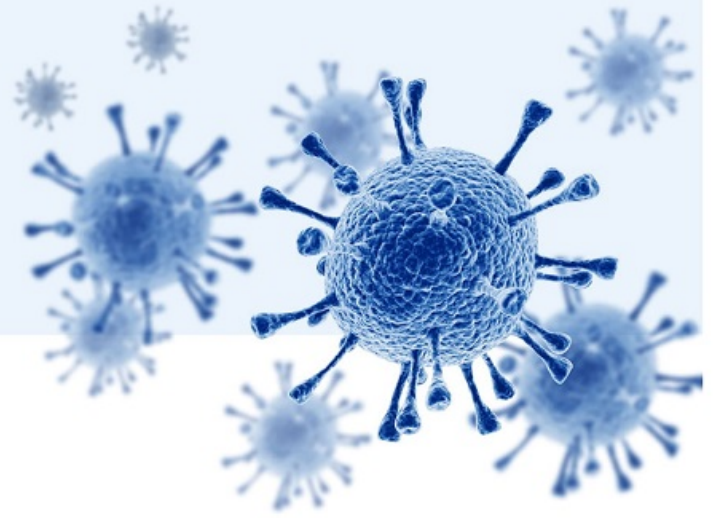
4

Secured Cash Runway to continue ongoing development

\$20m IPO and \$8m PIPE



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v a c c i n e s



Appendix

- Intellectual Property
- Influenza: background, data
- *S. pneumo* induced AOM: background/data
- S&P Nanoparticle VLP Platform
- Norovirus-Rotavirus
- Norovirus-Malaria

Our U.S. IP Portfolio

S&P Platform¹:

- US Patent 8,486,421: "Antigen-Norovirus P-Domain Monomers and Dimers, Antigen-Norovirus P-Particle Molecules, and Methods for Their Making and Use"
- US Patent 9,096,644: "Antigen-Norovirus P-Domain Monomers and Dimers, Antigen Norovirus P-Particle Molecules, and Methods for Their Making and Use"
- US Patent 9,562,077: "Protein Complex System For Increased Immunogenicity and Functionality, and Methods Making and Use"
- U. S. patent pending application no. 16/489,095: "Norovirus S Particle Based Vaccines and Methods of Making and Using Same"
- U.S. pending provisional application nos. 63/149,742 & 63/162,369: "S60-HA1 pseudovirus nanoparticles as a new influenza vaccine tactic and candidate"

Influenza²:

- US Patent 11,123,422: "Immunogenic composition"
- US patent application no. 17/458,712: "Immunogenic composition"

*S. pneumonia*³:

- US Patent 9,265,819: "Live, attenuated *Streptococcus pneumoniae* strain and vaccine for protection against pneumococcal disease"

In Process IP⁴:

- OUI project 16867 – Influenza A haemagglutinin antigen Group 2 (H3)
- OUI Project 16870 – Influenza Group B haemagglutinin antigen
- OUI Project 16872 – VLP delivery system for influenza vaccine

Influenza Viruses⁶

Influenza A: epidemic and pandemic

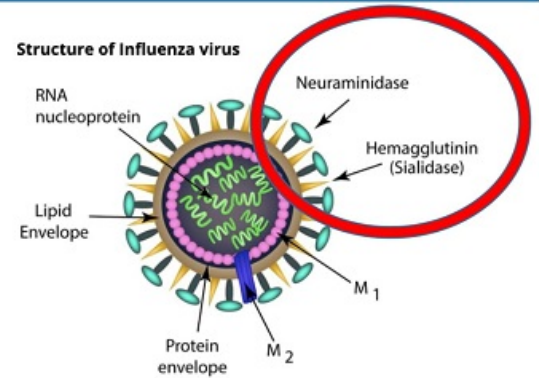
Influenza B: epidemic, slower mutations

Influenza C: mild, non-pandemic, vaccine not needed

Influenza D: animals only

Subtypes based on two viral proteins:
H: hemagglutinin (HA)
N: neuraminidase

Lineages
B: Victoria
B: Yamagata



Influenza A&B cause most of human illness and the flu season

18 different hemagglutinin subtypes (H1-H18)

11 different neuraminidase subtypes (N1-N11)

Influenza

Overview*

Worldwide estimates each year:

- **1 billion cases** of influenza infection
- **3-5 million severe cases**
- **290,000-650,000 deaths**

Economic Impact**

- **\$4 billion** is spent annually on influenza vaccines worldwide
- **\$87 billion** estimated lost productivity in the US alone

Current Treatment limitations***

- Target regions of the virus that is highly variable
- Annual flu vaccine effectiveness at preventing disease ranges between 20 and 60%
- Updated annually and reformulated 6-months prior to flu season and may not protect against subsequent strains

Our mission is grounded in the belief that vaccines are the best way to protect against the flu

S. pneumo induced AOM

Overview

Worldwide estimates each year:

- **709 million cases** per year, with 51% occurring in children under 5 years old^{*,10}
- By 3 years of age, 80% of children are expected to have at least one episode^{*}
- AOM due to *S. pneumoniae* is estimated to be 30-50%^{**}

Impact

- **\$4.3 billion USD** is spent on AOM treatment each year in the U.S. alone^{***}

Current Treatment limitations

- Current treatment for AOM is by antibiotic prescription, with more than 80% of all consultations resulting in a prescription ^{***}
- Even with introduction of the Prevnar13 in 2010, 26-36% of cases of AOM in U.S. were caused by *S. pneumoniae*¹⁰

Current treatments have limited effect on prevention of AOM due to *S. pneumoniae****

39 * Monsata 2012 2012; 7(4): e36226.

** Dagan et al. *The Journal of Infectious Diseases*, Volume 181, Issue 4, April 2000.***. Tong et al BMC Health Serv Res. 2018; 18: 318.

Our Approach

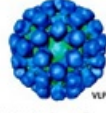
- In-licensed the novel attenuated *S. pneumoniae* strain from St. Jude Children's Research Hospital
- Our BWV-201 vaccine candidate is a live attenuated serotype-independent vaccine
- Long-term preventive intranasal vaccine for *S. pneumoniae* induced acute otitis media (AOM)
 - Potential short-term pain and/or long-term harmful side effects
 - Complications from AOM include sensorineural hearing loss (SNHL)
- Production of vaccine is straightforward
 - Utilizes the entire bacterium with purification and concentration steps only in the downstream process
 - Reduces the time and cost of production significantly compared to the commonly used vaccines

Versatile Vaccine Platform^{*, **}



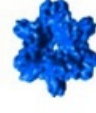
S-domain

- 60 freely exposed C-termini = S_{60} nanoparticle
- Foreign antigens fused to the end of the S domain via flexible linker
- Uniform 60-valent NoV VLPs via an expression system
 - never been produced before.
- S_{60} n nanoparticles maintained uniform complexity and size of vaccine particles



S&P Platform Characteristics

- Unique capsid dual-domain properties: S&P
- Stable, subviral nanoparticles
- Scalable, flexible discovery engine
- Multi-antigen and pathogen capabilities
- Broad therapeutical potential
- Cost-effective and Rapid Production of Novel Vaccines
- *E.coli* expression system



P-domain

- 24 valent P nanoparticles = P_{24}
- Three loops = multi-antigen potential
- Nanoparticles without adjuvant produce innate, humoral, and cellular immunity
- inter-P domain disulfide bonds significantly stabilizes P_{24}

Norovirus-Rotavirus

Overview

Worldwide estimates each year:

Norovirus is the most common cause of acute gastroenteritis, 700 million cases.****

- About 200 million cases are seen among children under 5 years old, leading to an estimated 50,000 child deaths every year.*

Rotavirus causes an estimated 111 million episodes of diarrhea*

- 2 million hospitalizations, and 352,000–592,000 deaths in children <5 years of age.*

Economic Impact

- **Norovirus:** \$60.3 billion worldwide each year**

Current Treatment limitations*

- Norovirus: No vaccine is available
- Rotavirus: Current vaccines exist. Two vaccines are authorized for use in infants in the U.S. with a reported efficacy of 85–95%.****

*Rotavirus is the most common cause of diarrheal disease among infants and young children**

