

altimmune

# CORPORATE PRESENTATION

July 2017

# FORWARD-LOOKING STATEMENT DISCLOSURE

Any statements made in this presentation relating to future financial or business performance, conditions, plans, prospects, trends, or strategies and other financial and business matters, including without limitation, the prospects for commercializing or selling any products or drug candidates and available cash and cash commitments, are forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. In addition, when or if used in this press release, the words “may,” “could,” “should,” “anticipate,” “believe,” “estimate,” “expect,” “intend,” “plan,” “predict” and similar expressions and their variants, as they relate to Altimmune, Inc. (the “Company”) may identify forward-looking statements. The Company cautions that these forward-looking statements are subject to numerous assumptions, risks, and uncertainties, which change over time. Important factors that may cause actual results to differ materially from the results discussed in the forward-looking statements or historical experience include risks and uncertainties, including risks relating to: realizing the benefits of the merger between Altimmune, Inc. and PharmAthene, Inc.; clinical trials and the commercialization of proposed product candidates (such as marketing, regulatory, product liability, supply, competition, dependence on third parties and other risks); the regulatory approval process; dependence on intellectual property; the Company’s BARDA contract and other government programs, reimbursement and regulation; and the lack of financial resources and access to capital to fund proposed operations. Further information on the factors and risks that could affect the Company’s business, financial conditions and results of operations are contained in the Company's filings with the U.S. Securities and Exchange Commission, which are available at [www.sec.gov](http://www.sec.gov).

The statements made herein speak only as of the date stated herein, and any forward-looking statements contained herein are based on assumptions that the Company believes to be reasonable as of this date. The Company undertakes no obligation to update these statements as result of new information or future events.

# ALTIMMUNE INVESTMENT HIGHLIGHTS

<b>Company</b>	<ul style="list-style-type: none"><li>• NASDAQ: ALT</li><li>• HQ in Gaithersburg, MD, currently employs 27 FTEs in Gaithersburg and London</li></ul>
<b>Products</b>	<ul style="list-style-type: none"><li>• A portfolio of promising clinical and preclinical product candidates targeting attractive commercial markets</li><li>• Product candidates with clear advantages over current std of care</li></ul>
<b>Platforms</b>	<ul style="list-style-type: none"><li>• Innovative platform technologies for continued growth</li></ul>
<b>Additional Opportunities</b>	<ul style="list-style-type: none"><li>• The opportunity to leverage existing government contracting expertise to provide current and near-term revenue</li><li>• A strong competitive position in the anthrax vaccines market – \$230 million in annual sales</li></ul>
<b>Financial Details</b>	<ul style="list-style-type: none"><li>• Approx. \$20M cash and cash commitments at merger closing, sufficient well into 2Q18, through multiple clinical milestones</li></ul>

# STRONG EXECUTIVE MANAGEMENT TEAM

## Bill Enright

*President and Chief Executive Officer*



## Elizabeth A. Czerepak

*Chief Financial Officer and Executive Vice President of Corporate Development*



## Scot Roberts, Ph.D.

*Chief Scientific Officer*



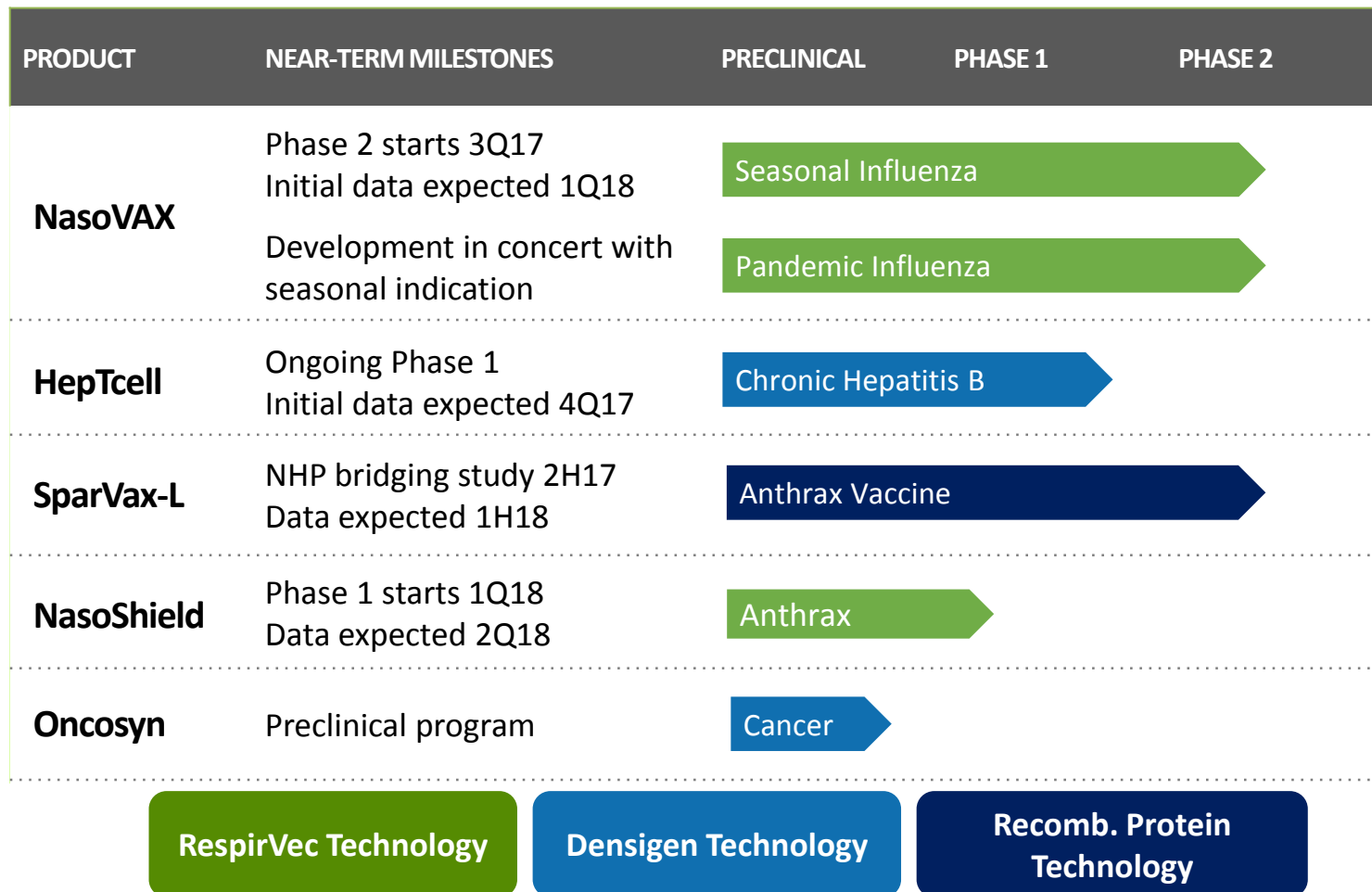
## Sybil Tasker, M.D., MPH, FACP, FIDSA

*Chief Medical Officer*



# PRODUCT PIPELINE

Novel product candidates utilizing **new approaches** to engage the immune system, offering fundamental advantages over competing therapies



# PROPRIETARY PLATFORM TECHNOLOGIES

**Two distinct, complementary vaccine platform technologies activate the immune system in different ways than traditional vaccines**

## RespirVec

- Replication-deficient adenovirus delivered intranasally to upper respiratory tract
- Early and broad activation of the immune system including antibody, cellular, mucosal and innate arms
- Rapid production cycle
- Product Candidates
  - **NasoVAX**
  - **NasoShield**

## Densigen

- Activation of T cells to kill diseased cells
- Innovative peptide modification improves immunogenicity (fluorocarbon tail)
- Ability to target multiple pathogen antigens simultaneously
- Strong, directed cellular responses without HLA restriction
- Product Candidates
  - **HepTcell**
  - **Oncosyn**

# NasoVAX SEASONAL INFLUENZA VACCINE

NasoVAX

<b>MARKET</b>	<ul style="list-style-type: none"><li>• Global influenza market to reach \$10.2 billion by 2022<sup>1</sup></li><li>• \$2.0 billion annual U.S. flu vaccine market<sup>2</sup></li><li>• Annual deaths on par with breast cancer in the U.S.<sup>3</sup> with average annual vaccine efficacy of 40% between 2005-2015<sup>4</sup></li><li>• FluMist \$288M in 2015<sup>5</sup></li></ul>
<b>NASOVAX KEY DIFFERENTIATORS</b>	<ul style="list-style-type: none"><li>• Broad cross-protection against mis-matched virus strains</li><li>• Rapid protection (days rather than weeks)</li><li>• Mucosal immunity at site of infection</li><li>• Use in special populations, including the young and old</li><li>• Faster, cheaper manufacturing cycle</li></ul>
<b>UPCOMING MILESTONES</b>	<ul style="list-style-type: none"><li>• Phase 2 enrollment expected to start 3Q17</li><li>• Initial data expected 1Q18</li></ul>

<sup>1</sup>Research and Markets: Trends and Opportunities Report, <sup>2</sup>World Health Organization, <sup>3</sup>Journal of Epidemiology <sup>4</sup>CDC,

<sup>5</sup>AstraZeneca FY15 financial results

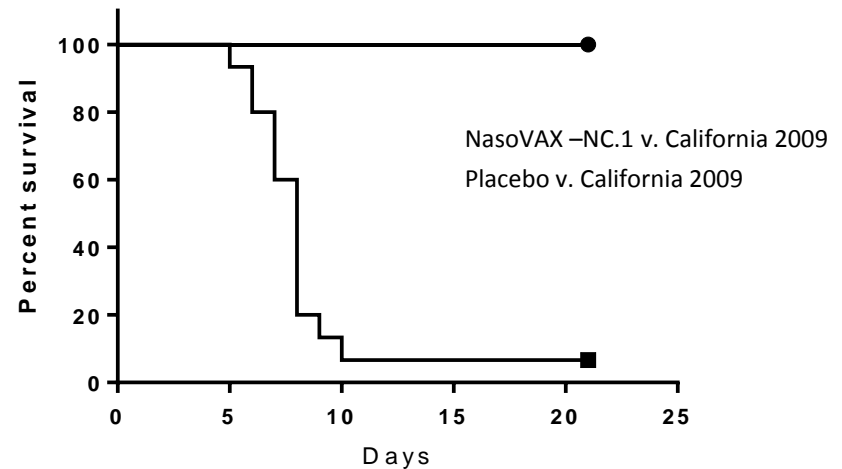
# NasoVAX PRECLINICAL DATA

NasoVAX

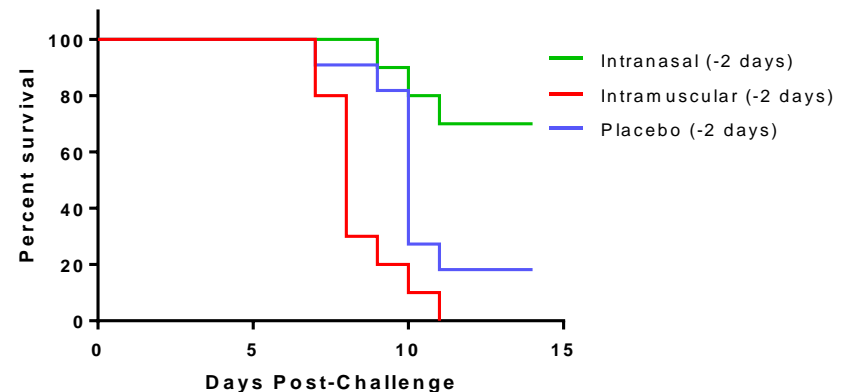
## Influenza candidate based on RespirVec platform

- Vaccination led to cross-protection across multiple influenza strains in mice
  - Expected to protect even if virus changes after vaccine manufactured
- Intranasal route provides rapid protection
  - Superior protection in 2 days
  - Rapid protection indicates activation of innate immune system, not just antibody-development

### Protection against divergent influenza strain



### Rapid protection within 2 days





# NasoVAX: PHASE 2 CLINICAL DEVELOPMENT

NasoVAX

<p><b>Monovalent H1 Proof of Concept Study</b></p> <p><i>Initial data 1Q 2018</i></p>	<p>Part A– safety &amp; immunogenicity of single intranasal dose (3 dose levels) – 60 healthy adult volunteers</p> <ul style="list-style-type: none"><li>• Evaluation of antibody response to both matched and divergent strains</li><li>• Cellular, innate and mucosal immunity</li></ul> <p>Part B starts mid-year 2018 – influenza challenge study – 60 volunteers</p> <ul style="list-style-type: none"><li>• Half challenged at day 4, remainder at standard 28 day interval</li><li>• Endpoints = signs/symptoms of influenza; viral shedding</li></ul>
<p><b>Quadrivalent Dose Ranging Study</b></p> <p><i>FPI 2H 2018</i></p>	<ul style="list-style-type: none"><li>• 3 cohorts of healthy adults including healthy elderly</li><li>• Will include active comparator with licensed seasonal vaccine</li><li>• Antibody response and other measures of immunogenicity assessed one month post-vaccination and at later timepoints to assess durability</li></ul>
<p><b>Quadrivalent Dose Confirmation</b></p>	<ul style="list-style-type: none"><li>• Approximately 500 subjects to collect additional safety and immunogenicity data on chosen dose in prep for EOP2</li><li>• Timing to overlap influenza season so that initial look at protective efficacy may be feasible</li><li>• May run parallel studies in high risk special populations</li></ul>



## Phase 1 Chronic Hepatitis B immunotherapeutic using the Densigen technology

- T cell activating approach offers potential for disease cure
- Ongoing Phase 1, initial data expected 4Q17
- Coverage against all known HBV strains expected
- Designed for genetically diverse populations (Asian, African, etc.)
- 240 million people chronically infected worldwide with >1 million HBV-related deaths/year<sup>6</sup> and a ~\$3 billion global market<sup>7</sup>
- Currently licensed therapies control but do not eliminate chronic infection

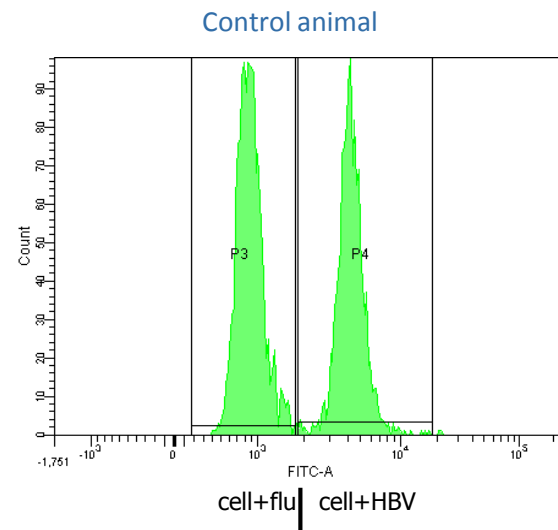
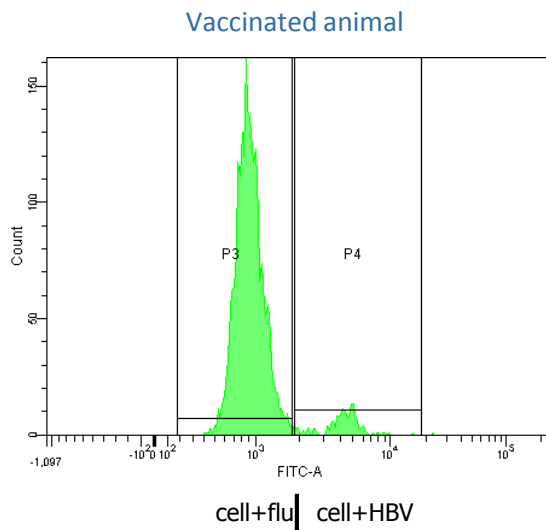
<sup>6</sup> Hepatitis B Foundation

<sup>7</sup> Hepatitis B Therapeutics in Major Developed Markets to 2021, GBI Research, Sep. 2015

# HepTcell: PRECLINICAL DATA

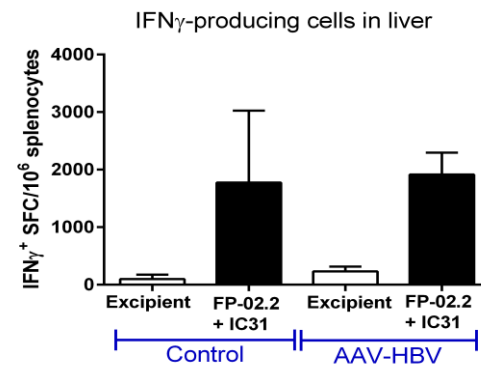
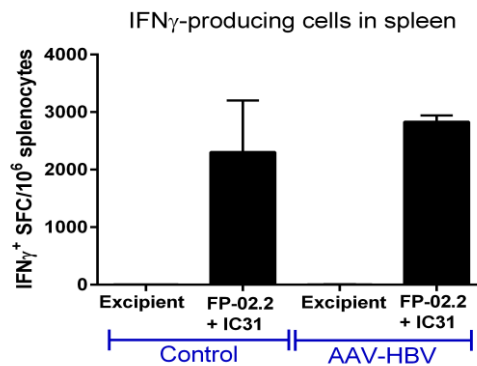
- **Elicits killing of autologous cells 'infected' with HBV**

- Mouse cells with either HBV proteins or unrelated viral proteins injected into mice vaccinated with HepTcell
- Within 1 day, 91.7% of HBV loaded cells were eliminated



- **Surmounts HBV-induced immune tolerance**

- Immunized mice generated robust T cell response in presence of HBV infection





# HepTcell: CLINICAL DEVELOPMENT

## Phase 1

## Phase 2

Initial data available 4Q 2017,  
late safety and quant sAg in 1H 2018

2018

### Double-blinded, placebo-controlled trial in 60 patients

- Chronic Hepatitis B disease population controlled with tenofovir or entecavir
- Dosing at Days 1, 29, and 57
- Low vs high dose HepTcell ± IC31 adjuvant
- Controlled for placebo and IC31 effects

### Study Objectives

- Primary: Assess safety and tolerability
- Secondary: T cell response
- Exploratory: Quantitative HBsAg levels

- Confirm dose and explore schedule based on P1 results
- Global study under IND to start 4Q 2018
- Anticipate 120 - 200 patients

# FUTURE GENERATION ANTHRAX VACCINES



<b>BioThrax (Anthrax Vaccine Adsorbed, Emergent BioSolutions)</b>	<ul style="list-style-type: none"><li>• Only anthrax vaccine with FDA approval</li><li>• \$237 million in sales in 2016<sup>8</sup></li></ul>
<b>Important Limitations of BioThrax</b>	<ul style="list-style-type: none"><li>• Protection requires 6 months and 3 injections<sup>9</sup></li><li>• Injection site local adverse reactions in 60-80% of subjects after first dose<sup>9</sup></li></ul>
<b>AltImmune: two government funded, complimentary, next generation anthrax vaccines</b>	<ul style="list-style-type: none"><li>• SparVax-L – \$15M NIAID contract</li><li>• NasoShield – \$127M BARDA contract</li><li>• <i>No additional investment by AltImmune in either of these programs</i></li></ul>

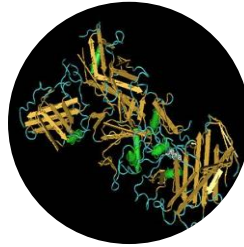
<sup>8</sup> Emergent BioSolutions Inc. website; <sup>9</sup> BioThrax MSDS

# FUTURE GENERATION ANTHRAX VACCINES

Naso  
Shield

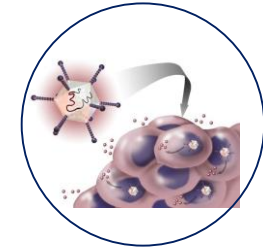
SparVax-L

## SparVax-L Recombinant Protective Antigen (rPA) Anthrax Vaccine



- Next generation lyophilized anthrax vaccine (NIAID funded)
- Highly purified recombinant protective antigen
- Non-human primate bridging study could be initiated 2H17
- Enhanced convenience and cost-effectiveness (PEP regimen)
  - 2 dose IM regimen
  - Enhanced convenience (prefilled syringe)
  - >6 year shelf life
- Vaccine efficacy equal to or better than the licensed product
- SparVax-L suited to fulfill stockpile requirement

## NasoShield Recombinant Vector Anthrax Vaccine



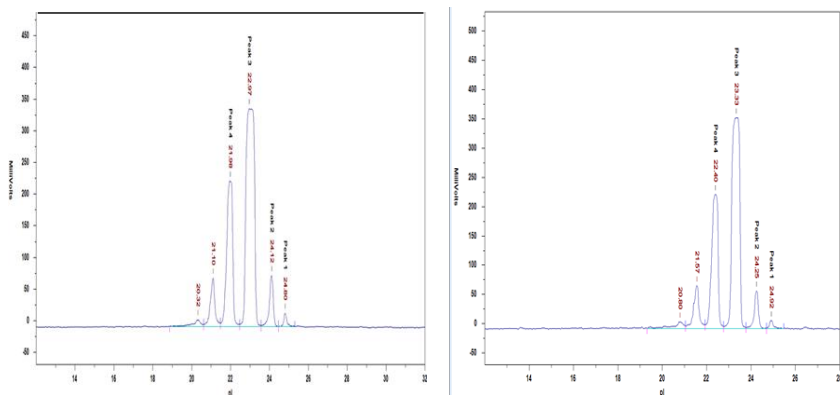
- Next generation anthrax vaccine (BARDA funded)
- First-in-class virally vectored recombinant PA vaccine
  - Safe viral vector cannot replicate
- Efficacy of single intranasal dose non-inferior to multiple injections of approved vaccine (BioThrax)
- Protective immunity threshold reached in half the time and more durable than rPA-based vaccines
  - Protection predicted in 2 versus 5 weeks
- Intranasal route for convenience and simplicity
- Highly stable at refrigerated and ambient temperatures
- NasoShield suited to fulfill stockpile requirement

# SPARVAX-L AND NASOSHIELD: PRECLINICAL DATA



## SparVax-L has Maximum Stability

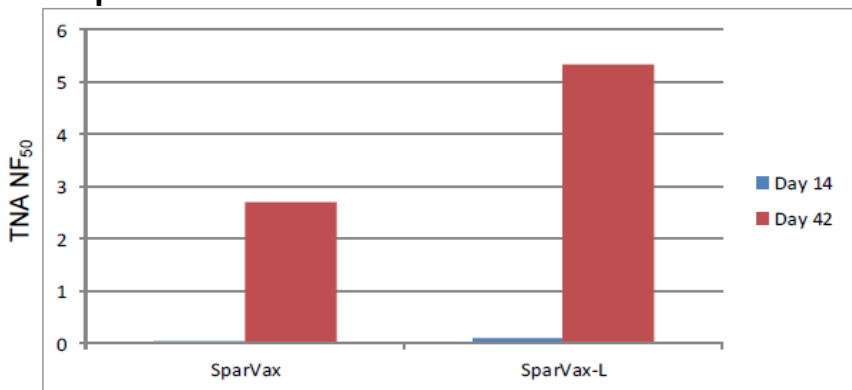
Storage at refrigerator temperature



Reference Standard

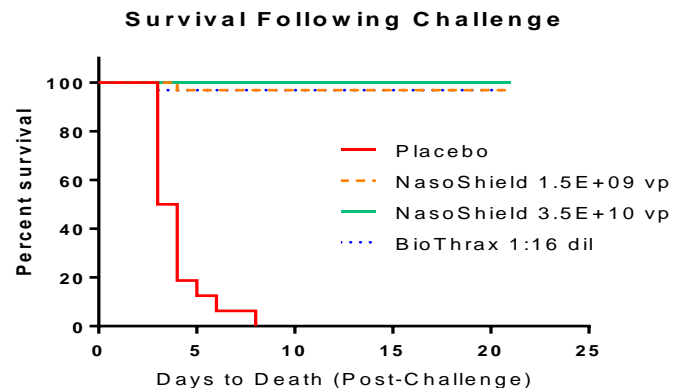
Lyophilized 6 years at 2-8° C

## Superior immunogenicity of SparVax-L vs SparVax

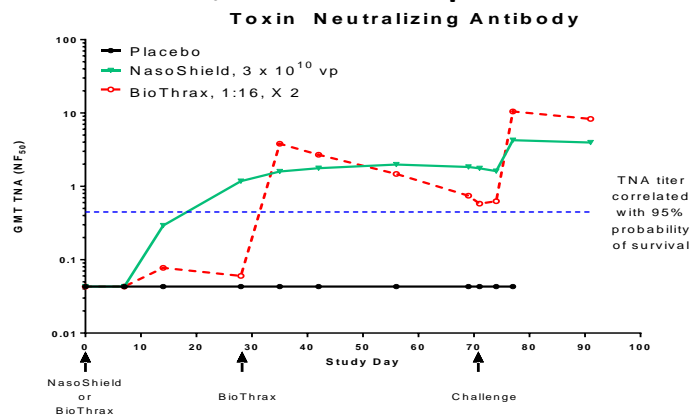


## NasoShield— Single Dose

Non-inferiority vs BioThrax



## Faster, more durable protection



# ANTHRAX VACCINE PROGRAMS



## NasoShield, Phase 1

N=145

Q1 2018

### Design:

- 4 escalating dose cohorts with single intranasal dose
- 1 cohort with highest dose repeated at day 21
- Intranasal placebo control for each cohort
- Also randomized to open label AVA comparator

### Endpoints:

- Safety and immunogenicity

## SparVax-L, NHP

2H 2017

### Design:

- Currently under discussion with NIAID



# Milestones

**We expect the \$20 million in cash and cash commitments at merger closing, plus BARDA and NIAID contract revenue, to be sufficient to fund milestones well into 2Q18.**

3Q 2017 NasoVAX Phase 2 trial initiation

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4Q 2017 SparVax-L NHP bridging study  
HepTcell initial Phase 1 data

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1Q 2018 NasoShield Phase 1 trial initiation  
NasoVAX initial Phase 2 data  
SparVax-L NHP data

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2Q 2018 NasoShield initial Phase 1 data

# BOARD OF DIRECTORS

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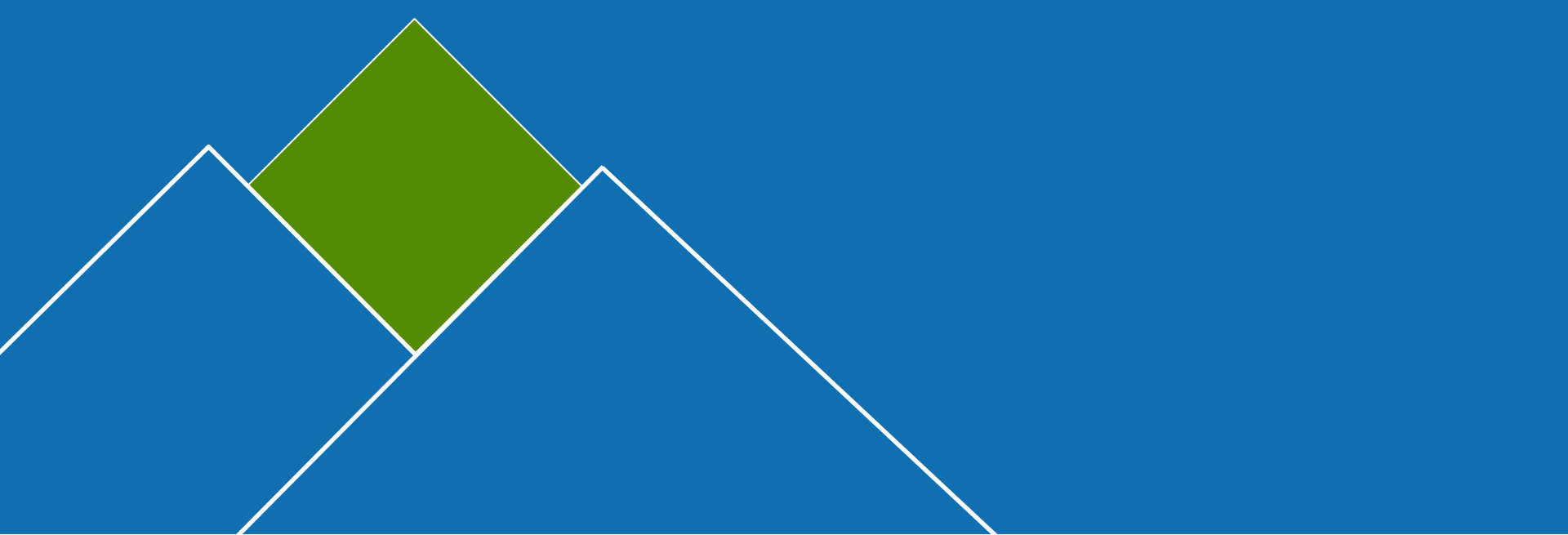
## Extensive Experience:

- Public company Board members in the life sciences industry
- Valuable guidance and relationships for ongoing efforts

David Drutz, M.D. (Chairman)	Chairman
Bill Enright	CEO and Director
Philip Hodges	Director
Klaus Schafer, M.D.	Director
Mitchel Sayare, Ph.D.	Director
John M. Gill	Director
Derace Schaffer, M.D.	Director

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