GlimmerX: Global ImmunoDiagnostics

Game-Changing Diagnostics Development for Difficult-to-Diagnose and Difficult-to-Treat Bacterial Infections
GlimmerX: A holding company

Joe Vinetz, M.D.
Founder, Consultant
Professor, Yale School of Medicine
>$48 million in research funding to date; well connected in industry;
Expert in assay development, animal models, microbiology, immunology and human/field testing

Carla Devillers, M.B.A.
Founding Executive
Wharton M.B.A.
Highly experienced international finance, operations, and business development executive

Tsvi Goldenberg, Ph.D
Partner
Experienced innovator in start-ups
Serial entrepreneur

Legal
Wilson Sonsini Goodrich & Rosati:
Global intellectual property and corporate lawyers

Yale Accelerator for Innovation Development
Team:
Colleen Lopez, PhD
Eva Leung
Konstantine Drakonakis
A story ...
The Leptospirosis problem

Leptospirosis is the *Ebola virus* of the bacterial world

Current technology to diagnose leptospirosis in animals and humans performs poorly... can take weeks to identify a plan of action

With a 20% mortality rate, leptospirosis can be fatal if not diagnosed and treated in a timely manner
The Solution: GlimmerX

- Patent-pending IP/technology
- BETTER, FASTER platform for point-of-care diagnosis
- QUICK, RELIABLE diagnosis of hard-to-identify bacterial infections
The broader problem

Sepsis, Urinary Tract Infection, Meningitis

Delayed diagnosis ➔ FATAL
GlimmerX Technology

• Track record of discovery directed at unmet needs
  • Already done it
  • Newly applying it
  • Will apply it to new, untapped, vast opportunities

A Protein-Conjugate Approach to Develop a Monoclonal Antibody-Based Antigen Detection Test for the Diagnosis of Human Brucellosis
GlimmerDx Technology, newly applying it: LeptoX Proof-of-Principle

- New antigen discovery
- Uses novel immunochemical platform
- Develop ultrasensitive biosensors
- **Bottom line: we identify novel targets; from there, we make new diagnostics**

Previous work

Our novel IP
LeptoX: Initial focus; GlimmerX expanded scope

Scalable glycoconjugate platform with potential to capture **not only** HUMAN and ANIMAL segments for leptospirosis (LeptoX) but **will be applied** to vast new markets → SEPSIS, UTI, MENINGITIS, ANTIBIOTIC RESISTANT BACTERIA (GlimmerX)

**PREDICTED MARKET VALUE 2020 (THOUSANDS)**

- **HUMAN**: $5,000,000
- **LIVESTOCK**: $500,000
- **COMPANION ANIMALS**: $100,000
<table>
<thead>
<tr>
<th>Company</th>
<th>Diagnostic Method</th>
<th>Processing Time</th>
<th>Breadth of Diseases</th>
<th>Reliable Results</th>
<th>Affordable</th>
<th>Easy to Do</th>
</tr>
</thead>
<tbody>
<tr>
<td>GlimmerX/LeptoX</td>
<td>Antigen detection</td>
<td>15 minutes</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>ARUP</td>
<td>Molecular diagnosis</td>
<td>~1-5 days</td>
<td>❌</td>
<td>❓</td>
<td>❌</td>
<td>❌</td>
</tr>
<tr>
<td>PanBio, MRL Dx,</td>
<td>Antibody detection</td>
<td>1-6 weeks</td>
<td>❌</td>
<td>❌</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Linnodee</td>
<td>(ELISA, latex agglutination,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>hemagglutination)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hospital labs</td>
<td>Culture</td>
<td>2-3 months</td>
<td>❌</td>
<td>❌</td>
<td>✓</td>
<td>❌</td>
</tr>
</tbody>
</table>
Blavatnik Funds will enable GlimmerX

YEAR 1
- **Pilot $100,000**
  - Lepto: diagnostics prototypes
    - ELISA; POC device
  - Pilot testing in animals
- **Full $300,000**
  Above plus
  - UTI, drug-resistant bacteria:
    - diagnostics prototypes
  - *In vitro* testing
  - Pilot animal testing

YEAR 2 – 3
- **New**, nondilutive funding; early stage investment
- Create SOPs/protocols to enable pilot cGMP
  Diagnostic device/platforms scale up
  - For clinical testing in endemic sites
  - Licensing partners for manufacture/distribution

YEAR 4 – 5
- Early stage investment
- cGMP production
- Preclinical testing begins
- Veterinary trial testing
- Prepare for IND/Phase I human clinical trials
Questions?

Contact

Joe Vinetz, M.D.
joseph.vinetz@yale.edu
(858) 945-7550

Carla Devillers, M.B.A.
carladevillers@gmail.com
(917) 545-7262