Entrepreneurs in Residence: Not Just for VCs

Rich Bendis
The Region:

Central Maryland

Unrivaled Research Assets

- 59 Federal Laboratories, Centers, and Institutes

Annual Maryland R&D Investment

- Federal: $12 billion
- JHU/USM: $3.5 billion
An Innovation Intermediary

Align local technologies, assets and resources to advance innovation

Regionally-oriented
Private-public partnership
501(c)(3) nonprofit
Market-driven
Private sector-led

Technology Focus
E-Health
Therapeutics
Mobile Health
Medical Devices
Healthcare Services
Electronic Medical Records
BioHealth Cyber Security
Health Informatics
Diagnostics
Partners and Sponsors
BHI Commercialization Model

PROOF OF COMMERCIAL RELEVANCE

UNIVERSITIES, FEDERAL GRANTS, PRIVATE R&D, BASIC RESEARCH, INVENTIONS

1. PROOF OF CONCEPT
2. PRODUCT DEVELOPMENT RESEARCH
3. PROTOTYPE PRODUCT
4. SBIR/STTR
5. PROOF OF COMMERCIAL RELEVANCE
6. MAKE TECHNOLOGY INVESTMENT GRADE
7. TRANSFER TECHNOLOGY TO INDUSTRY
8. GENERATE EQUITY, ROYALTIES, & LICENSE FEES
9. NEXT GENERATION PRODUCTS
10. REINVESTMENT

FUNDING & ENTREPRENEURIAL RESOURCES

PUBLICATIONS
PhD's
TENURE
PATENTS

WEALTH CREATION: COMPANIES, JOBS, PRODUCTS & PROFITS

SPINOFF COMPANIES
TRANSFER TECHNOLOGY TO INDUSTRY
MAKE TECHNOLOGY INVESTMENT GRADE
Innovation Paradigm Shift

Proof of CONCEPT
(Technological Feasibility)
Laboratory Push
“It Works!”

→

PROOF OF COMMERCIAL RELEVANCE
(Market Pull)
“It Works To Solve A Problem”
“I’ll Buy It”

→ $
What is an Entrepreneur in Residence?

An active partner with research institutions

Source
Fund
Grow Businesses
Served in a **business development role**
Experience in Seed **Venture Capital Firm**
Senior Management in a life sciences **Startup**
Our Entrepreneur in Residence:

Todd Chappell

- Scientific
  - 13 Years
- Financial / Venture Capital
  - 4 Years
- Entrepreneurial Management
  - 13 Years
"I thought that the BHI EIR experience would lead me to my next startup... but instead I now feel like a kid in a scientific candy store with the unlimited opportunities of the EIR program becoming its own interesting startup."

Todd Chappell
Our Entrepreneur in Residence:

Todd Chappell

+ 30 NIH Postdocs and Interns

Identify → Evaluate → Transfer / Startup

+ Drugs
+ Vaccines
+ Health IT
+ Diagnostics
+ Therapeutics
+ Medical Devices
"The NIH OTT/BHI EIR program helps our 150 technology transfer professionals gain access to real-time needs of industry, the market, and the investment community."

Mark Rohrbaugh
Director of the NIH Office of Technology Transfer
NIH/OTT:
First Year Outcomes

97 Innovations identified
63 Innovations progressed
12 Innovations in Primary Analysis

5 Client Relationships
1 NCI Startup
1 Industry License Pending
Client Companies

- Advanced Personalized Diagnostics, LLC
- Ahead Research, Inc.
- Mimetas
- Perceptive Navigation, LLC
Client Companies

Advanced Personalized Diagnostics, LLC

- Personalized Cancer Care
- Offers chemosensitivity profiling services to provide personalized treatment plans
- Dr. Cuttitta (NCI) and Dr. Fang (NIH)
Client Companies

- Personalized Diagnostics
- Web/Mobile application that matches patients to high quality healthcare providers
- Craig Monsen
Paul Vulto and Jos Joore

Organ-on-a-Chip solutions as an early screening model to predict toxic side effects and drug efficacy

Pharmaceutical

Mimetas
Client Companies

Perceptive Navigation, LLC

- Medical Device
- Develops medical devices related to image-guided, minimally-invasive markets
- Dr. Ted Abraham
Potential Future Expansion

- National Institutes of Health
- National Heart Lung and Blood Institute
- National Cancer Institute
- University EIR
- Health Information Technology EIR
- Industry EIR
BHI Global Expansion

North America
Netherlands
Germany
China
Korea
Portugal
Innovation Capital Valley of Death

Stage
- Pre-Seed: Founders, FFF, Bootstrapping, Crowdfunding
- Seed/Start-Up: Angels, IBED, SBIR, Accelerator Seed Funds
- Early: Venture Funds, M&A, IPO
- Later

Source
- $0K
- $500K
- $2.5M
- $5.0M

Demand

Supply

Valley of Death

Funding Gap
Maryland Statistics:
Venture Capital Dollars Invested

- PricewaterhouseCoopers
- Moneytree

2007: $800,000,000
2008: $600,000,000
2009: $400,000,000
2010: $600,000,000
2011: $200,000,000
2012: $100,000,000
# Central Maryland Innovation Capital Map

## Capital Sources by Investment Stage

<table>
<thead>
<tr>
<th>Stage</th>
<th>Pre-Proof of Concept</th>
<th>Translational Research / Proof of Concept</th>
<th>Proof of Commercial Relevance / Pre-Seed</th>
<th>Seed / Start-Up</th>
<th>Early Stage</th>
<th>Later Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>$25K - $1.5M</td>
<td>$15K - $750K</td>
<td>$3K - $500K</td>
<td>$50K - $1.5M</td>
<td>$250K - $2M</td>
<td>$2M+</td>
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<tr>
<td>NIH R01</td>
<td>NCATS Cures Acceleration Network (CAN)</td>
<td>Maryland Industrial Partnerships (MIPS @ UMD)</td>
<td>Dingman Center Angels (UMD)</td>
<td>Maryland Health Care Product Development Corporation</td>
<td>Maryland Venture Fund Authority</td>
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<tr>
<td>NIH R03</td>
<td>SBIR/STTR Grant Phase I</td>
<td>Maryland Biotechnology Center's Translational Research Award</td>
<td>Propel Baltimore Fund</td>
<td>Invest Maryland: Maryland Venture Fund</td>
<td>ABS Capital Partners</td>
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<tr>
<td>NIH R21</td>
<td>Maryland Stem Cell Research Fund (MSRCF)</td>
<td>TEDCO Technology Commercialization Fund</td>
<td>SBIR / STTR Phase II</td>
<td>Maryland Biotechnology Center's Biotechnology Commercialization Awards</td>
<td>Greenspring Associates</td>
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<tr>
<td>Maryland Innovation Initiative (MII) (Managed by TEDCO)</td>
<td>TEDCO Technology Validation Program</td>
<td>MII Phase 2 Grant</td>
<td>BHI Central Maryland Angel Fund</td>
<td>Abell Venture Fund</td>
<td>Novak Biddle Venture Partners</td>
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<tr>
<td></td>
<td>JHU-Coulter Translational Research Partnership</td>
<td>MII Phase 3 Grant</td>
<td>BHI Commercial Relevance Fund (CRF)</td>
<td>MMG Ventures LP</td>
<td>Sterling Venture Partners</td>
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<td></td>
<td>BHI SBIR/STTR Commercial Relevance Program (CRP)</td>
<td>BHI Commercial Relevance Fund (CRF)</td>
<td>TDF</td>
<td>Harbert Venture Partners</td>
<td></td>
</tr>
</tbody>
</table>

### Associations
- Association of University Resource Parks (AURP)
- Association of University Technology Managers (AUTM)
- Licensing Executive Society (LES)
- Angel Capital Association (ACA)
- Mid-Atlantic Venture Association (MAVA)
- National Venture Capital Association (NVCA)

### Funding Type Key
- Academic
- Accelerator
- Associations
- Federal
- BioHealth Innovation, Inc.
- Innovation-based Economic Development (IBED)
- State of Maryland
- Venture Capital

### Tax Credits
- Maryland Biotechnology Investor Tax Credit
- Montgomery County Biotechnology Investor Tax Credit
Innovation Capital Programs

**SBIR/STTR Assistance Program**
Help companies prepare high-quality SBIR/STTR grant proposals.

**BHI Angel Fund**
Bridge the gap between pre-seed investments and institutional venture capital.

**BHI Commercial Relevance Investment Fund**
Pre-seed and early-stage, equity-based innovation capital fund to help grow companies
BioHealth Innovation, Inc.
Innovation Capital

Central Maryland SBIR Candidates

1. Phase I Awardees
2. Pre-Phase I (Phase Zero) – Early Commercial Relevance Indication

BHI Online Review System

- Companies Invited by BHI to submit SBIR concept
- Scientific Experts
- SBIR Consultants
- BHI

Reviews, Feedback, Troubleshooting, Strategy

Full Proposal Preparation Assistance

Mentoring $$$
New BHI Health IT Accelerator

An intensive 16-week program for top-recruited companies and entrepreneurs

- Provides a network of experienced mentors in:
  - Business
  - Marketing
  - Product Development

No HIT accelerators currently in Maryland
Public Private Partnerships

**ACADEMIA**
- Research/T2
- Lifelong Learning
- Economic Development

**INDUSTRY**
- Profit
- Process
- Product

**GOVERNMENT**
- Sustainability
- Infrastructure Support
- Economic Policy

**FOUNDATIONS**
- Economic Growth
- Community Investment
- Regional Collaboration

**INSEPARABLE MISSIONS**
"The BHI EIR program represents a significant paradigm shift in the way NIH hopes to advance commercially relevant science."