Accelerating Entrepreneurial Innovation in Mexico

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Innovation America

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The World According to Friedman: Hot, Flat, and Crowded
The Global Innovation Imperative

- Innovation is Key to Growing and Maintaining a Country’s **competitive** Position in the Global Economy and to address Global Challenges
- **Collaboration** among Small and Large Businesses, Universities, and Research Institutes is Essential for Innovation & Commercialization
- **New Institutions and New Incentives**, are increasingly important to support collaboration and foster innovation
- Competitive advantages are increasingly tied to human capital and innovation
- **Economic growth** is closely related to education/workforce, energy, climate change, environmental, natural resource, geopolitical issues & entrepreneurship
The New Locational Competition

**Definition:** The competition for economic activity

Intense and growing competition among nations and regions for well paid jobs and improving living standards........
The Six Driving Forces of Change

- Commoditization
- The Digital Revolution
- Social Media-ization throughout society
- Global Open Innovation
- The Turbulent World
- Acceleration (or running faster to stay in the same place)
## Countries by Innovation Index

### Top 10 Countries

<table>
<thead>
<tr>
<th>Rank</th>
<th>Country</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Switzerland</td>
<td>68.24</td>
</tr>
<tr>
<td>2</td>
<td>Sweden</td>
<td>64.77</td>
</tr>
<tr>
<td>3</td>
<td>Singapore</td>
<td>63.47</td>
</tr>
<tr>
<td>4</td>
<td>Finland</td>
<td>61.78</td>
</tr>
<tr>
<td>5</td>
<td>United Kingdom</td>
<td>61.25</td>
</tr>
<tr>
<td>6</td>
<td>Netherlands</td>
<td>60.55</td>
</tr>
<tr>
<td>7</td>
<td>Denmark</td>
<td>59.93</td>
</tr>
<tr>
<td>8</td>
<td>Hong Kong (China)</td>
<td>58.72</td>
</tr>
<tr>
<td>9</td>
<td>Ireland</td>
<td>58.68</td>
</tr>
<tr>
<td>10</td>
<td>United States of America</td>
<td>57.69</td>
</tr>
</tbody>
</table>

### Top 10 Latin-American Countries

<table>
<thead>
<tr>
<th>Rank</th>
<th>Country</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>39</td>
<td>Chile</td>
<td>42.66</td>
</tr>
<tr>
<td>58</td>
<td>Brazil</td>
<td>36.58</td>
</tr>
<tr>
<td>60</td>
<td>Costa Rica</td>
<td>36.33</td>
</tr>
<tr>
<td>65</td>
<td>Colombia</td>
<td>35.49</td>
</tr>
<tr>
<td>67</td>
<td>Uruguay</td>
<td>35.13</td>
</tr>
<tr>
<td>70</td>
<td>Argentina</td>
<td>34.43</td>
</tr>
<tr>
<td>75</td>
<td>Peru</td>
<td>34.07</td>
</tr>
<tr>
<td>77</td>
<td>Guyana</td>
<td>33.67</td>
</tr>
<tr>
<td>79</td>
<td>Mexico</td>
<td>32.86</td>
</tr>
<tr>
<td>80</td>
<td>Belize</td>
<td>32.52</td>
</tr>
</tbody>
</table>
They are providing four things:

- High-level Focus
- Sustained Support for R&D: Leveraging Public and Private Funds
- Support for Innovative SMEs
- New Innovation **Partnerships** to bring new products and services to market
Growth of World Population and the History of Technology

Source: Milken Institute, Robert Fogel/University of Chicago
Why Is Innovation Essential?

“INNOVATION DISTINGUISHES BETWEEN A LEADER AND A FOLLOWER.”

- STEVE JOBS

INNOVATION is the creation and transformation of knowledge into new products, processes, and services that meet market need......and interactions, entertainment forms, and ways of communicating and collaborating.
Science, Technology & Innovation in Mexico

Startup Boot Camp
Iniciativa Emprende
WeConnect International
Cleantech Challenge Mexico
Enterprise Development Network
Development Innovation Ventures
Peace Corps Technology Transfer Program
Partnerships for Enhanced Engagement in Research
Mexico’s Small Business Development Center (SBDC) Network
Fortune/U.S. State Department Global Women’s Mentoring Partnership

US Embassy Mexico
Economic Growth in Mexico

• Mexican Economy valued at $1.47 trillion
  – Among 15 largest in the world -> by 2050 will be 6th largest

• On present trends, by 2018 the US will import more from Mexico than from any other country

Could “Made in China” give way to “Hecho en México”?
How Mexico Got Back in the Game

- Signed 44 free trade agreements
  - More than any other country in the world
- Increased number of engineers and skilled laborers graduating from schools
- Three major political parties signed a “Pact for Mexico”
  - Fight big energy, telecom, and teacher monopolies holding back Mexico
Mexico boosts Innovation Funding for Private Sector

- Mexican Government increased research firm funding from $150 mil to $230 mil
- Small and Medium Enterprises
- Reinforces link between academic and private sectors
  - 473 of 500 companies have worked with universities
- Expanding the program would cost the US only an extra $10-15 million a year
Strategies to catalyze Enterprise Growth in Mexico

Provide access to capital
Increase loans to private sector

Level the playing field
Streamline current laws and enforce them strictly

Reduce frictions in the supply chain

Enable SME access to performance bonds
Entrepreneurship in Mexico

- Companies under 250 employees comprise 99% of companies in the country
- Missing: Investments in the range of $100,000 to $3 million
- More than 500 incubator programs in 190 cities in Mexico
- Venture Capital: Issues due to poor infrastructure, laws, and poor legal documentation
Enabling Entrepreneurship

- Remove barriers to growth
- Discriminate in favor of entrepreneurs.
- Develop a clear, right-sized and strictly enforced tax system.
- Pay suppliers on time.
- Unjam the exit if you really want to improve entrance and scale-up.
- Stay off of ventures' balance sheets — and get onto their income statements.
- Convene, celebrate, catalyze.
“Never before in history has innovation offered promise of so much to so many in so short a time.”

Bill Gates - Microsoft
Five Key Components to Consider When Defining Unique Regional Assets

- **ECONOMIC BASE**
  - What you make, including your existing & prospective industry clusters
  - Location, Infrastructure, Amenities, Factor Costs, Natural Resources

- **ENTREPRENEURSHIP**
  - Your capacity to create companies wholly new or from existing firms

- **TALENT**
  - What you do: your workforce skills & human capital base

- **INNOVATION & IDEAS**
  - Your capacity to innovate and generate new ideas

The basic conditions defining the economic milieu of the region
Economic Development

- Economic Development is like a 4-legged stool:
  - Attraction
  - Retention
  - REINVENTION
  - Grow Your Own

- IBED requires patience and persistence, continuity and consistency
- Working with early-stage companies takes time
- A balanced portfolio economic development strategy is best!
## Convergence of Traditional Economic Development & Innovation-Based Economic Development

<table>
<thead>
<tr>
<th></th>
<th>Traditional</th>
<th>Innovation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Assets:</strong></td>
<td>PHYSICAL</td>
<td>KNOWLEDGE</td>
</tr>
<tr>
<td><strong>Competitive Basis:</strong></td>
<td>Natural Resources</td>
<td>Specialized talent networks,</td>
</tr>
<tr>
<td></td>
<td>Highways/Rail</td>
<td>Clusters, University research</td>
</tr>
<tr>
<td></td>
<td>Proximity</td>
<td>industry partnerships,</td>
</tr>
<tr>
<td></td>
<td>Costs</td>
<td>Commercialization, Market</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Positioning Globalization</td>
</tr>
<tr>
<td><strong>Key values/offerings:</strong></td>
<td>University Research</td>
<td>Research Parks, Workforce</td>
</tr>
<tr>
<td></td>
<td>Parks, Incentives</td>
<td>Competencies, Lifestyle,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Economic Gardening, Economic</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Developers</td>
</tr>
<tr>
<td><strong>Lead Organization:</strong></td>
<td>Chambers/EDCs</td>
<td>INNOVATION INTERMEDIARIES</td>
</tr>
</tbody>
</table>
Goals of Innovation-Based Economic Development

Intervene at the margins of private sector investment flows of capital (financial and intellectual) to:

- Address economic transition
- Capture the benefit of investments in research and development, higher education
- Build entrepreneurial cultures
- **Help existing companies grow**
- Diversify both rural and urban economies
- Develop global innovation network
The concept of the **Innovation Ecosystem** stresses that the flow of technology and information among people, enterprises and institutions is key to a vibrant innovation process.
The Secret Recipe to Building an Innovation Ecosystem

- There is none.
- Key Ingredients: Universities, Governments, NGOs, Incubators, and Startups
- These are nothing compared to: A committed group of people with a high degree of trust, collaboration, sharing, and interdependency
Implementing a New Innovation Paradigm

- Deviate from traditional perspectives
- Encourage public investment and risk taking
- Develop trust through collaboration
- Ensuring responsiveness to partners’ missions
- Build consensus of all constituents through education, participation, and positive outcomes
- Move from Tech-Based Economic Development (TBED) to.....

Innovation-Based Economic Development (IBED)
What is A Regional Innovation Intermediary?

- An organization at the Center of the region’s, state’s and country’s efforts
  - Align local technologies, assets and resources
  - Advance Innovation

- Regionally-oriented
- Private-public partnership, 501(c)(3) nonprofit
- Market-driven, private sector-led
- Neither a government initiative, nor a membership organization
Intermediary Best Practices

- Longevity
- Bipartisan Support & Champions
- Independent Organizations
- Continuous Reinvention
- PRIVATE SECTOR LEADERSHIP
- Understand Return On Investment
- Sustainability In Funding
- Accountable
- Innovative
- Effective Leadership
21st Century Innovation Intermediary

Leverage & Alignment
Funding Resources

Connectivity
Key Human & Institutional Players
Cluster Management

Program Management
Proof of Commercial Relevance
Direct Investment
Angel Capital
SBIR Programs
Technology Mining / Intellectual Property Programs

Innovation Road Map Implementation
Research Marketing
Positioning of the Strengths of the Innovation Economy
US Regional IBED Intermediaries
Small Business Facts

- SME’s employ over 50% of the country’s private sector workforce, hire 40% of high tech workers, such as scientists, engineers, and computer workers.
- The number of women-owned firms continues to grow at twice the rate of all U.S. firms (23% vs. 9%)
- 70% of SME’s say retaining customers cheaper than getting new customers.
- 7 out of 10 new employer firms last about two years and about half survive five years.
Never to late!

A survey of 549 successful business owners found that most founders were middle-aged when they started their business.

Average Age: 40

www.entrepreneur.com/dbimages/blog/entrepreneurship-risk.jpg
Six Distinct Organizational Paths for Entrepreneurs

- Lifestyle Business
- Small Business
- Scalable Startup
- Buyable Startup
- Large Company
- Social Entrepreneur
## Small Business Biggest Obstacles

- Lack of willingness or ability to take **risks**
- **Time and effort** required
- Raising **capital**
- **Business management** skills
- **Knowledge** about how to start a business
- **Industry and market** knowledge
- **Pressure** to keep a stable job

Keys to Small Business Success

**Courage**
The willingness to take risks

**Perseverence**
The capacity to power through tough times

**Ambition**
The insatiable drive to reach your goal

**Understanding**
The knowledge to make wise business decisions

**Innovation**
The ability to improve on existing ideas
“Treat others as you want to be treated.”

“Share life’s rewards with those who make them possible.”

“Give back to society”

Ewing Marion Kauffman
Innovation Paradigm Shift

**PROOF OF CONCEPT**
(Technological Feasibility)
“It Works!”

**PROOF OF COMMERCIAL RELEVANCE**
(Market Pull)
“I’ll Buy It!”

The Historic Garage

CASH IS KING!
Innovation Capital

“VALLEY OF DEATH”

<table>
<thead>
<tr>
<th>Stage</th>
<th>POR / Pre-Seed</th>
<th>Seed/Start-Up</th>
<th>Early</th>
<th>Later</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source</td>
<td>Founders, FFF, Bootstrapping, Crowdfunding</td>
<td>Angels, IBED, SBIR, Accelerator Seed Funds</td>
<td>Venture Funds</td>
<td></td>
</tr>
<tr>
<td>Demand</td>
<td>$0K</td>
<td>$500K</td>
<td>$2.5M</td>
<td>$5.0M</td>
</tr>
</tbody>
</table>

"VALLEY OF DEATH"
### Mexico VC Index Ranking

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Score:</td>
<td>67</td>
<td>5</td>
</tr>
<tr>
<td>Regional Ranking:</td>
<td>3RD</td>
<td>3RD</td>
</tr>
</tbody>
</table>

**Strengths:** Tax treatment, corporate governance requirements, capital markets development, protection of minority shareholder rights, restrictions on local institutional investors

**Challenges:** Weak framework for fund formation, bankruptcy procedures, protection of IP rights, inefficient judicial system, negative perception of corruption
The term comes from the German legend of Baron Münchhausen pulling himself out of the sea by pulling on his own bootstraps.

**Definition:** “The act of starting a business with little or no external funding”
Accelerators Are the New B-school

As more young entrepreneurs find success from their business accelerator contacts, the usefulness of traditional business school is put into question.
Seed Accelerator Model May Be Relevant

- > 130 accelerators exist & spreading rapidly
- Could grow > 400 to 500 in 5 years
- Focus on emerging tech sectors
Crowdfunding—as its name implies—aims to reach a funding goal by getting many investors to put in small amounts.
## Leading Crowd Funding Organizations

<table>
<thead>
<tr>
<th></th>
<th>Traditional Angel Funding</th>
<th>CrowdFunding</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Investors</strong></td>
<td>Individual professional investor or a small team</td>
<td>Potentially hundreds of micro-investors</td>
</tr>
<tr>
<td><strong>Business Network</strong></td>
<td>Limited to Angel's network</td>
<td>Extended to all of the investors network</td>
</tr>
<tr>
<td><strong>Pre-Launch Buzz</strong></td>
<td>Usually nothing</td>
<td>Tremendous buzz potential</td>
</tr>
<tr>
<td><strong>Community</strong></td>
<td>Relies on company to create one</td>
<td>Built in seed community from investors and followers</td>
</tr>
<tr>
<td><strong>Strategic Coaching</strong></td>
<td>Usually very good</td>
<td>Over time will improve, but nothing structured now</td>
</tr>
<tr>
<td><strong>Process: Access to capital</strong></td>
<td>Usually slow to very slow</td>
<td>extremely fast</td>
</tr>
<tr>
<td><strong>Process: Transparency</strong></td>
<td>Usually very opaque</td>
<td>Transparent to everyone involved.</td>
</tr>
</tbody>
</table>

- Kickstarter
- INDIE GOGO
- MicroVentures
- Profounder
- peerbackers
- FundWeaver
- StartupFuel
- innovation AMERICA®
- TechBA
- 20 años FUMEC
Six Entrepreneur Skills That Angel Investors Love

1. Talks & writes well
2. Networked & connected
3. Full disclosure attitude
4. Values intellectual property
5. Not in a heated rush
6. Realist
3 Myths About Elevator Pitches

- **Myth #1:** An elevator pitch is a sales tool

- **Myth #2:** Pack your elevator speech with facts that will amaze the listener & demonstrate a mastery technical nomenclature

- **Myth #3:** Once you’ve written & practiced your elevator speech, you’re ready
The Art of the Escalator Pitch: 10 Great Tips

1. Keep it short
2. Have a hook
3. Pitch yourself, not your ideas
4. Don’t forget the pitch
5. Don’t overwhelm with technical or statistical terminology
6. Practice
7. Use the same tactics for print
8. Revise
9. Be involved in the startup community before you pitch
10. Listen
Bendis Pitch Do’s and Don'ts

**DO**
- Strong Opening
- Be Succinct
- Be Factual
- Prove Relevance
- Be Realistic
- Confident
- Ask for Order

**DON’T**
- Leave Them Guessing
- Ramble
- B.S./Guess
- Be Conceptual
- Over Commit
- Be Cocky
- Be Vague
Change Is Inevitable

“ It is not the strongest of species that survive, nor the most intelligent, but the ones most responsive to change.”

Charles Darwin
What Is A Road Map....Why Is It Needed?

- A roadmap answers the question “Where do we want to be and how to we get there?”
- A cluster roadmap provides strategies and action plans to best achieve a vision of the future shared by a critical mass of industry-related organizations.
- The strategies and action plans are developed according to the unique strengths of the cluster and region as compared to a global market opportunity.
Innovation America: Innovation Road Map

1. Literature Review of Comparables
2. Key Stakeholder Interviews/Recommendations
3. Asset & GIS Mapping/Cluster Analysis
4. Innovation Benchmarking/Index (Peer 2 Peer)
5. Innovation & Entrepreneurship Resource Guide
6. Innovation Economic Development Organizational Analysis
7. Innovation & Commercialization Program Gap Analysis
8. Innovation Ecosystem Public Policy Recommendations
9. Innovation Strategic and Organization Plan
10. Operations & Implementation Plan
11. Branding & Marketing Strategy
12. Economic Impact Analysis - Celebrate Your Success
“There’s No Good Idea That Cannot Be Improved Upon”

Michael Eisner
Maryland

Population: 5.828 million people
State of Maryland: Federal & University Resources

59 Federal Laboratories, Centers, & Institutes in Maryland
Maryland Federal R&D investment exceeding $12 billion annually

JHU and USM represent another $3.5 billion in annual R&D
Alignment of National, State, and Regional Policies

- Link Both State, County & City Strategies to Obama Administration Objectives
- Develop an integrated Regional BioHealth Economic Development and Transit Strategy
- Present the “Regional Job Generating BioHealth and Transit Plan” to the White House & partner with federal agencies and other stakeholder organizations as a “Showcase Model.”
- Develop structure & governance for the regional BioHealth innovation intermediary
- Obtain Priority Federal Funding for Region’s BioHealth Industry-Federal Labs-University Innovation Intermediary Pilot Plan
- Obtain Priority Federal Funding for the region’s Innovative “State of the Art” Comprehensive Rapid Transit Vehicle Plan (CCT et al)
- Develop a pilot BioHealth-Regional Innovation Cluster (H-RIC) program
Challenges to Innovation Economy

- Lack of connection of innovation resources
- Lack of an entrepreneurial culture and C-level executives
- Lack of early-stage funding for commercializing technologies
- Lack of spin-offs from federal and university R&D

BHI Value Proposition

- Connects regional innovation assets
- Develops an entrepreneurial talent and support pipeline
- Attracts funding for technology commercialization
- Evaluate commercially relevant federal and university technology for new spin-offs
BHI H-RIC Model

Health Regional Innovation Cluster (H-RIC)

- Regional, cluster-based economic development model
- Modeled after the Department of Energy’s Regional Innovation Cluster
- Connects innovation assets to related industries
- Advances human health and economic prosperity
BHI: An Innovation Intermediary that Connects Sectors, Industries, Communities, & Markets

- Connects Private, Public and Academic Sectors
- Connects Bio-Health Cluster Industries
- Connects Central Maryland Communities
- Connects Regional, National and Global Markets

BHI: Business, Health, Innovation
Regional BioHealth Ecosystem Partners

**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**
BHI Partners and Sponsors
BHI/EIR Technology Focus

- Therapeutics
- Diagnostics
- Medical Devices
- Healthcare Services
- E-Health
- Mobile Health
- Electronic Medical Records
- Health Informatics
- BioHealth Cyber Security
# Central Maryland Innovation Capital Map

## Capital Sources by Investment Stage

<table>
<thead>
<tr>
<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 (over 3 years)</td>
<td>$15K - $750K (over 3 years)</td>
<td>$3K - $500K</td>
<td>$50K - $1.5M</td>
<td>$200K - $2M</td>
<td>$2M+</td>
</tr>
</tbody>
</table>

- NIH R01
- NIH R03
- NIH R21
- Maryland Innovation Initiative (MII) (Managed by TEDCO)

- NCATS Cures Acceleration Network (CAN)
- SBIR/STTR Grant Phase I
- Maryland Stem Cell Research Fund (MSCRF)
- TEDCO Technology Validation Program
- JHU-Coulter Translational Research Partnership

- Maryland Industrial Partnerships (MIPS @ UMD)
- TEDCO Technology Commercialization Fund
- MII Phase 2 Grant
- MII Phase 3 Grant
- BHI SBIR/STTR Commercial Relevance Program (CRP)
- BHI Commercial Relevance Fund (CRF)

- Dingman Center Angels (UMD)
- Propel Baltimore Fund
- BioMaryland Center Biotechnology Development Awards - Commercialization
- BHI Central Maryland Angel Fund

- Invest Maryland: Maryland Venture Fund
- BioMaryland Center Biotechnology Development Awards - Translational Research
- BHI SBIR / STTR Phase II
- MD Health Care Product Development Corporation
- Abell Venture Fund
- MMG Ventures LP
- TDF

- Maryland Venture Fund Authority
- ABS Capital Partners
- Greenspring Associates
- Novak Biddle Venture Partners
- Sterling Venture Partners
- Harbert Venture Partners
- JMI Equity
- New Enterprise Associates (NEA)

## 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
- State of Maryland
- Federal
- Private Capital
- Economic Development

## Tax Credits
- Maryland Biotechnology Investor Tax Credit
- Montgomery County Biotechnology Investor Tax Credit

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[innovation america]
[20 años]
[TechBA]
[20 años FUMEC]
How does **BHI** work?

**Commercialization Pipeline**

- **Sources** and evaluates biohealth intellectual properties (IP)
- **Funds** market-relevant IP
- **Grows** and markets businesses and products
BHI Commercialization Model

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

PUBLICATIONS
PhD's
TENURE
PATENTS

WEALTH CREATION:
COMPANIES, JOBS, PRODUCTS & PROFITS

FUNDING & ENTREPRENEURIAL RESOURCES

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PIA between BHI and NIH’s Office of Technology Transfer (OTT) that supports the 27 NIH institutes’ $3 billion intramural research and the Food and Drug Administration to promote and foster cooperative research and accelerate technology commercialization among NIH/FDA, businesses, and universities.
Entrepreneur-in-Residence (EIR)

- A team leader who combines scientific, financial/VC and entrepreneurial management experience to:
  - Perform due diligence
  - Develop biohealth project-focused companies

Proactively identifies and commercializes market-relevant intellectual properties from:
  - Federal Labs
  - Universities
  - Private Sector

Progress (1 Year into Program)

- 97 Innovations identified and initially screened
- 63 Progressed to Secondary Analysis (Safety & Efficacy Profiling, IP Diligence, Regulatory & Development Pathways) and 12 to Primary Analysis
- Entered into consulting agreement with Perceptive Navigation
- Entered into agreement with Advanced Personalized Diagnostics, LLC
- Option Agreement for stem cell technology (JHU)
- Goal to fund the operation of more EIRs
EIR Value Proposition

The Start-Up Company Spectrum

"True" NewCo
- Conceptual
- No Licensed IP
- 0 FTEs
- No Funds

"Shell" NewCo
- Licensed IP
- 0-1 FTEs: Scientist
- Funds from grants, friends and family

"SBIR" NewCo
- Licensed IP
- 1-10 FTEs: Some business experience
- Funds from SBIR, DoD, friends and family, etc

"Angel" NewCo
- Licensed IP
- 1-30 FTEs: C-level experience
- $1-3M in angel funds +/- grant money

"Series A" NewCo
- Licensed IP
- 5-30 FTEs: C-level experience
- $10-15M Venture Capital round
Different Technologies = Different Strategy

- Biomarker
- Imaging
- Diagnostic
- Therapeutic
- e-Health
- Research Tools
- Mobile Health
- Medical Device
- Personalized Medicine Service
EIR Expectations

- Assist OTT in the evaluation of existing technologies
- Provide an entrepreneurial perspective to OTT in its evaluation of new licensing proposals
- Advise OTT on opportunities for new ventures based on NIH/FDA technologies
- Assist with developmental strategies
- Mentor scientists to help ensure their research becomes commercially valuable

- Identify market viable innovations from NIH and other regional institutions
- Act as liaison among regional biohealth stakeholders and NIH
- Primary and secondary commercial analysis of lead technologies
- Develop novel technologies that are at conceptual stage
- Act as catalyst to license most interesting technologies and fund start-up companies

NATIONAL INSTITUTES OF HEALTH

BioHealth Innovation
Maryland’s Commercialization Collaborative

innovation AMERICA®

TechBA

20 años FUMEC
Maryland Universities/EIR Interaction

- $5.8M budget
- 5 University partners
- 5 University site miners
- 40 University pre proof-of-concept technologies funded
- $25-$150K funded per technology

- UMV EIR: Ken Malone
- Regular meetings between BHI/EIR and site miners
- BHI identifies most commercially relevant technologies
- BHI and INNOVATE MD partnership opportunities
- BHI Commercial Relevance Advisory Board (CRAB)
EIR Expansion 2013

- National Institutes of Health
- University of Maryland Ventures EIR
- National Heart Lung and Blood Institute
- National Cancer Institute
- Health Information Technology EIR
- Industry EIR
Key Considerations for Technology Focus

- Clear unmet need that benefits public health
- First-in-class, best-in-class therapies
- Target therapeutic areas that reflect strategic objectives
- Clinical development advantage
- Relevance to strategic needs
# BHI Client Companies

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Industry Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Advanced Personalized Diagnostics, LLC</strong></td>
<td>Personalized Cancer Care</td>
</tr>
<tr>
<td><strong>Mimetas</strong></td>
<td>Pharmaceutical</td>
</tr>
<tr>
<td><strong>Ahead Research, Inc.</strong></td>
<td>Personalized Diagnostics</td>
</tr>
<tr>
<td><strong>Perceptive Navigation, LLC</strong></td>
<td>Medical Device</td>
</tr>
</tbody>
</table>

- **Advanced Personalized Diagnostics, LLC** offers chemosensitivity profiling services to provide personalized treatment plans.
- **Mimetas** provides Organ-on-a-Chip solutions as an early screening model to predict toxic side effects and drug efficacy.
- **Ahead Research, Inc.** develops a Web/Mobile application that matches patients to high quality healthcare providers.
- **Perceptive Navigation, LLC** develops medical devices related to image-guided, minimally-invasive markets.
BHI Innovation Capital

• **SBIR/STTR Assistance Program** - The BHI SBIR/STTR Assistance Program (in development) will provide assistance to biohealth-driven companies in the Central Maryland region in preparing for high-quality SBIR/STTR grant proposals for submission to federal funding agencies.

  **Metrics:**
  - Review **60** federal funding proposals per year
  - Conduct **20** intensive assistance projects in 2013
  - Track success measures through scoring, dollars, and leverage assistance.

• **BHI Angel Fund** - The BHI Angel Fund (in development) will be a member-managed private equity investment fund serving the Central Maryland region entrepreneurial needs.

• **BHI Commercial Relevance Investment Fund** - The BHI Commercial Relevance Investment Fund (in development) will help grow, attract, retain and connect Central Maryland biohealth innovation-based companies that need financing to grow their enterprises.
BHI SBIR/STTR: Commercial Relevance Program (CRP)

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

Central Maryland SBIR Candidates

Companies Invited by BHI to submit SBIR concept

BHI Online Review System

Scientific Experts

SBIR Consultants

BHI

Full Proposal Preparation Assistance

Mentoring $$$

Reviews, Feedback, Troubleshooting, Strategy
The increasing importance of Angels

- 300,000+ angels are investing $30 billion per year in close to 50,000 ventures
- 100+ Angel Groups formed nationwide in last 5 years
- In many cases, Angel Groups are becoming alternatives to early stage VCs and incubators
- No dedicated Angel Funds in Maryland

Source: Angel Capital Education Foundation Website
# Angel Fund Competitive Advantages

<table>
<thead>
<tr>
<th>Individual Angels</th>
<th>Angel Groups</th>
<th>Angel Funds</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Typically poor returns</strong></td>
<td><strong>Performance – a bit better:</strong></td>
<td><strong>Competitive advantages to get attractive returns:</strong></td>
</tr>
<tr>
<td><strong>Why:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Lack of expertise</td>
<td>- Increased chance of an expert at the table</td>
<td>- Only do deals where expert is leading deal</td>
</tr>
<tr>
<td>- Generally weak due diligence</td>
<td>- More people available to share due diligence</td>
<td>- Higher quality due diligence</td>
</tr>
<tr>
<td>- Less eyes on deal</td>
<td>- More eyes on deal</td>
<td>- More eyes on deal</td>
</tr>
<tr>
<td>- Intensive workload</td>
<td></td>
<td>- Vote process selects only the best deals</td>
</tr>
<tr>
<td>- Inadequate diversification</td>
<td></td>
<td>- Professional Administration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Diversification</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Follow-on reserves</td>
</tr>
</tbody>
</table>
BHI Angel Fund

- Maryland has no organized, dedicated professionally managed biohealth angel fund

- Over the past 15 years, high-technology angel investing has become more professional, organized, and more visible.

- When angels co-invested with other investors, the median round size was nearly $1.6 million, the highest since the second quarter of 2011 (Halo Report)

- Planning a BHI managed accredited angel investor fund; Initial target fund size of $3M - $5M

- 2013 – Assembling Private Placement Memorandum; Identify Investors

innovation AMERICA®

TechBA

20 años FUMEC
Health IT....Booming

- Increased investments in the **mobile and healthcare sectors** helped boost the median size of angel and angel group syndicate rounds.

- Mobile health technologies projected to be worth **$11.8 billion by 2018**

Source: Q3 2012 Halo Report
A Health IT Accelerator is an intensive 12-16 week program that admits top-recruited companies and entrepreneurs, provides a curriculum and network of experienced mentors in business, marketing and product development in the Health IT arena to “accelerate” top companies.

- No HIT accelerators currently in Maryland
- Located in a Central Maryland Co-Working space
- Retain promising high growth HIT entrepreneurs in MD
### Health IT Accelerator

#### Year 1 Accelerator

<table>
<thead>
<tr>
<th>1st Quarter</th>
<th>2nd Quarter</th>
<th>3rd Quarter</th>
<th>4th Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete Market Analysis of Sector and Opportunity</td>
<td>Assemble Management Team, Mentors, Technologists, Supporting Business Professionals for the Health IT Accelerator</td>
<td>Finalize Program Processes, Protocols &amp; Agreements</td>
<td>Launch of first Health IT class</td>
</tr>
<tr>
<td>Publicize and Market the First Class and Opportunity (90 Day Process)</td>
<td>Launch of first Health IT class</td>
<td>Graduation Event with Investors</td>
<td></td>
</tr>
</tbody>
</table>
BHI offers international companies the perfect starting point to create US based subsidiaries by connecting them with BHI’s extensive network.
BHI News & Website

**BHI Web site**
The BHI Web site has news, an events calendar, research publications, regional organization feature stories and resources for the biohealth industry.
http://www.biohealthinnovation.org

**BHI News**
BHI’s weekly e-newsletter highlights the Central Maryland Region’s news articles, national biohealth trends and feature stories.
http://www.biohealthinnovation.org/news
Central Maryland Entrepreneur’s Resource and Finance Guide

“Financing and Entrepreneurial Resource for Montgomery County and the Greater Baltimore Region”

- Entrepreneur and Innovation Resource Network
- Innovator Financing Guide
- The Startup’s Guide to Intellectual Property
- Federal Labs Listing
BHI: The Triple Bottom Line

Grows high-paying jobs and businesses

Expands tax base; improves economic vitality

...and Benefits human health!
Are you pulling alone or...
Are we all pulling together for success?
"Coming together is a beginning, staying together is progress, and working together is success."

Henry Ford
What Should We Do To Grow Our Region?

- Think Globally – Act Locally
- Advanced Manufacturing Innovation
- Practice Collaborative Capitalism
- Build Upon Assets & Fill Gaps
- Grow Private-Public Partnerships
- Fully Engage Private-Sector
- Support Startups Growth into SME’s & Mid-Size Companies
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