



# The Regional Innovation Imperative

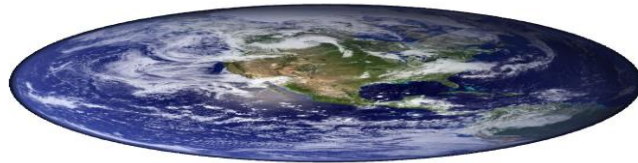


Ray Leach | Richard Bendis  
CEO, JumpStart Inc. | President & CEO, Innovation America



# 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



**OPEN INNOVATION  
MATTERS**



# 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.....



# 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)



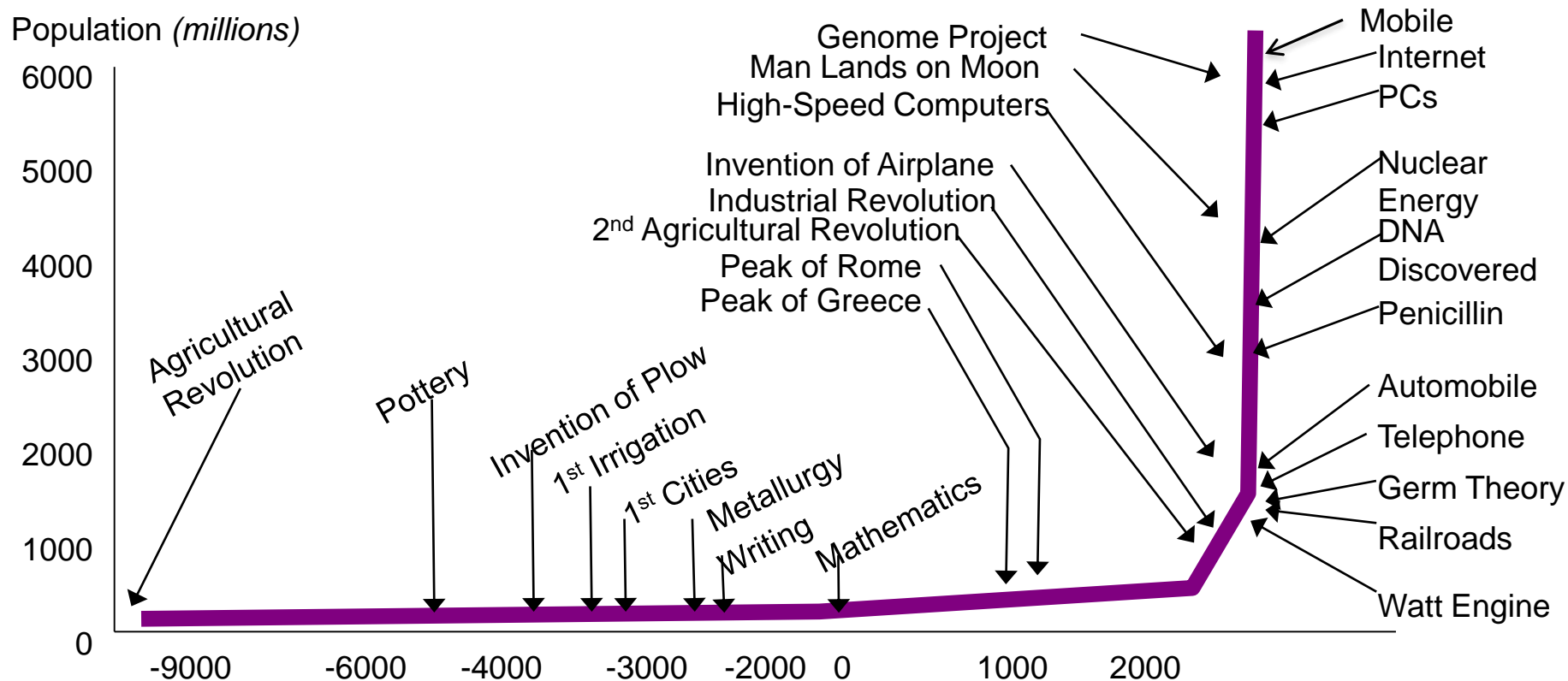
# How Leading **Regions** Respond to the Innovation Imperative

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

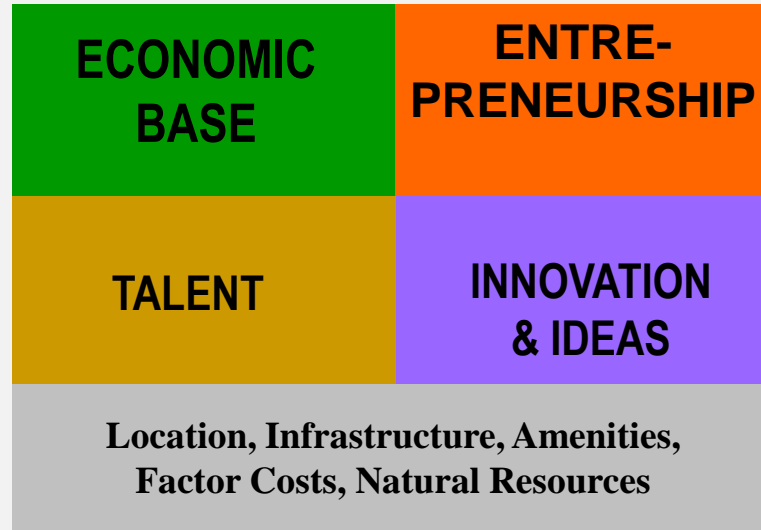
**INNOVATION** is the creation and transformation of knowledge into new products, processes, and services that meet market need.....and interactions, entertainment forms, and ways of communicating and collaborating



# Five Key Components to Consider When Defining Unique Regional Assets

*What you make, including  
your existing &  
prospective industry  
clusters*

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



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

*Your capacity to innovate  
and generate new ideas*

*The basic conditions defining the  
economic milieu of the region*

# Generation Innovation Report for NWPA

Boosting Innovation -> Higher real wages -> more Jobs

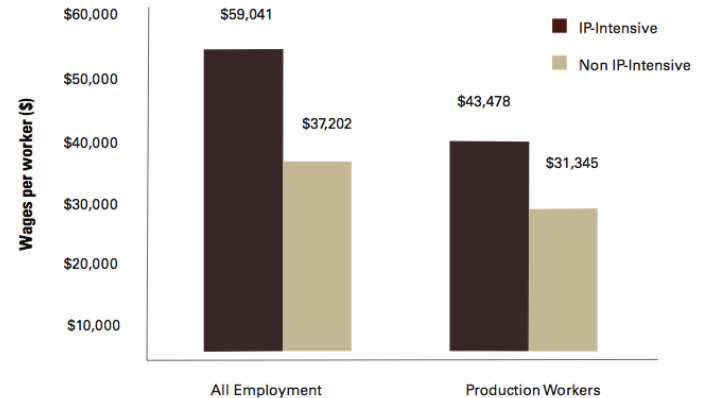
## Current:

- NWPA is lagging behind
  - Declining population
  - **Young People are leaving**
  - High percentage of low-income individuals
  - 50% below High-tech employment average

## Need to focus on improving:

- Human Capital, Patents, Innovation, Entrepreneurial Climate & Resources

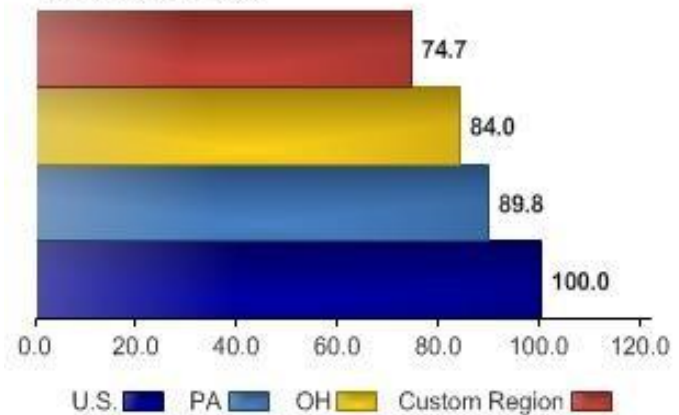
Figure 13. Annual Average Wage per Worker in IP-Intensive and Non-IP-Intensive Industries, All Employment and Production Workers, 2000-07<sup>25</sup>



# NWPA Innovation Index

The Innovation Index consists of five components.

1. Human Capital: 30%
2. Economic Dynamics: 30%
3. Productivity and Employment: 30%
4. Economic Well-Being: 10%
5. State Context (for reference only)



## Why This Index Is Useful

The Innovation Index takes a broad look at indicators related to innovation from both the input and output perspectives.

## What the Research Shows

Based on statistical analysis, several factors appear to be especially important for increasing economic growth: educational attainment; young-adult population growth; high-tech employment growth; and the number of small establishments.

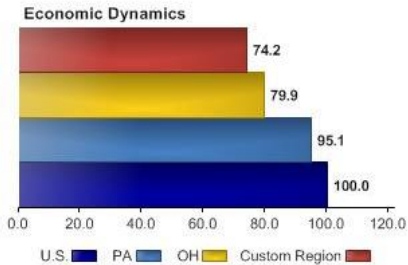
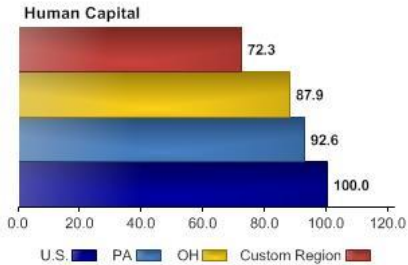
## Using This in Your Region

Economies do not recognize political boundaries used in governing, such as counties and states. Each region will have a different mix of qualities that can boost its overall innovation score, and no 2 regions will be exactly alike. The practitioner's guide can help users get started using this tool.

# Measuring Innovation NWPA

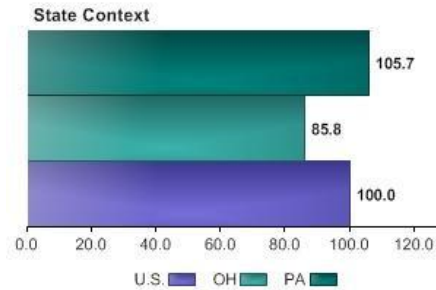
## Inputs and Capacity

The ability of the population and labor force to innovate is captured in 2 component indexes that include inputs into local economies.



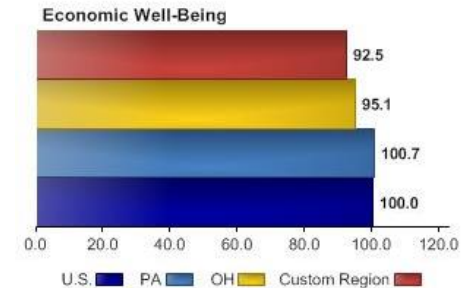
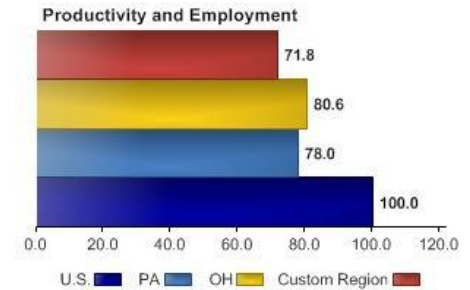
## State Context

A measure of the resources available in a state to entrepreneurs and businesses.



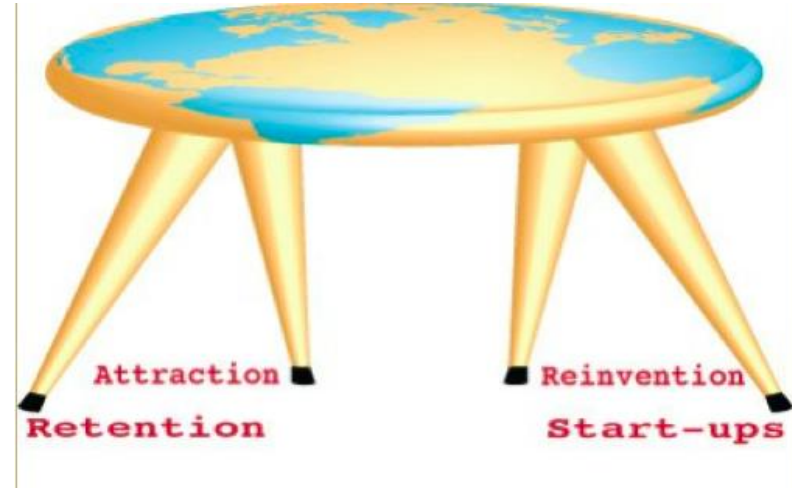
## Outputs

Direct outcomes and economic improvements of innovative activities are displayed in the output indexes.



# 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!






# Economic Gardening



**Economic Gardening** is a philosophy to support local businesses that centers on emerging Stage One companies and Second Stage growth companies through the support of the entrepreneurs who run them. Specific tools are applied that are most relevant to the needs of these entrepreneurs to find new customers, increase revenue, share best practices and ultimately create primary jobs that support the local economy.

# Convergence of Traditional Economic Development & Innovation-Based Economic Development

	<u>Traditional</u>		<u>Innovation</u>
Assets:	PHYSICAL		KNOWLEDGE
Competitive Basis:	Natural Resources Highways/Rail Proximity Costs		Specialized talent networks, Clusters, University research industry partnerships, Commercialization, Market Positioning Globalization
Key values/offerings:	University Research Parks, Incentives		Research Parks, Workforce Competencies, Lifestyle, Economic Gardening, Economic Developers
Lead Organization:	Chambers/EDCs		<b>INNOVATION INTERMEDIARIES</b>

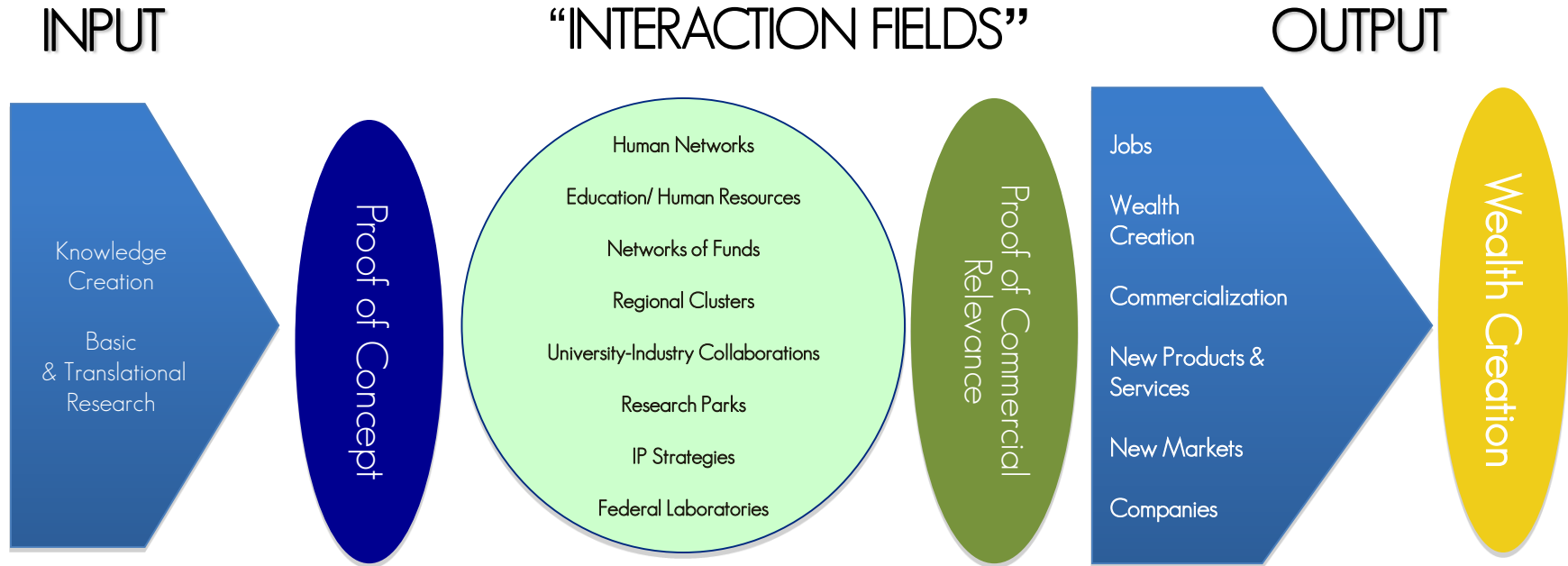
# Goals of Innovation-Based Economic Development

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



# Innovation Ecosystem



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.

# Innovation Ecosystem of NWPA

Professors + Entrepreneurs + Economic Development Professionals + IP & Business Attorneys  
Philanthropists + Government Representatives + Private Industry Individuals

**Mission:** Improve the Region's Economic Position

Attract more successful startup and existing business  
growth with diverse sources of capital



Ben Franklin  
Technology Partners  
Central & Northern PA



Destination Erie:  
A Regional Vision



Innovation Collaborative

ADREAMZ INSTITUTE



pennsylvania  
DEPARTMENT OF COMMUNITY  
& ECONOMIC DEVELOPMENT



E·C·G·R·A  
ERIE COUNTY GAMING REVENUE AUTHORITY

# The Secret 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

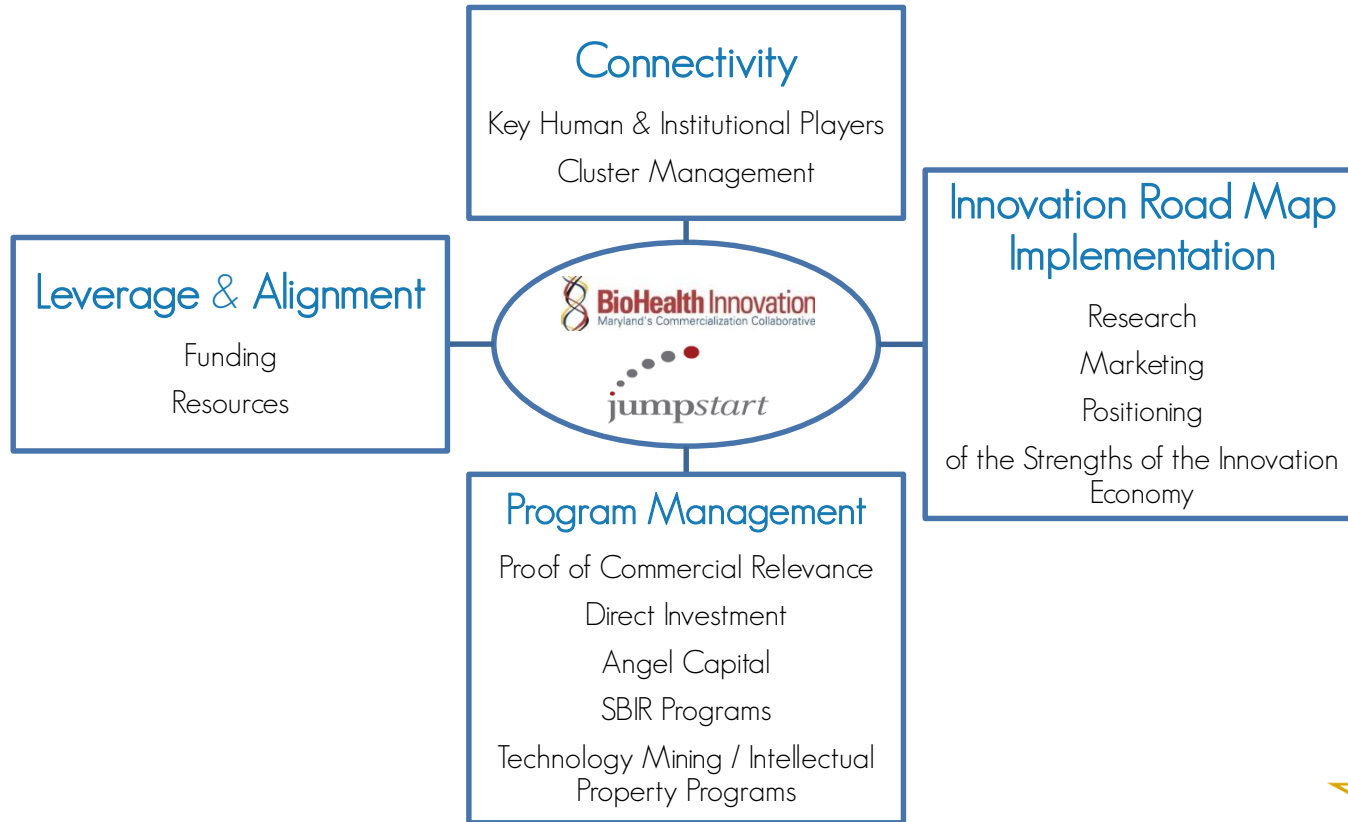


# Intermediary Best Practices

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



# 21<sup>st</sup> Century Intermediary



# US Regional IBED Intermediaries





# Northeast Ohio Innovation Intermediaries



# What Transforming Looks Like

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*What To Expect From Efforts to  
Transform a Regional Economy Via  
Innovation & Entrepreneurship*




# NEO Had Lost Real Ground

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## ENTREPRENEUR 2002 RANKINGS (61 METRO AREAS)

Beginning in 1991,  
Cleveland ranked  
**in the bottom 3  
cities** for 12  
straight years for  
**“friendliness for  
entrepreneurs.”**

- 
- 1 Washington, D.C.
  - 2 Dallas, TX
  - 3 Raleigh/Durham, NC
  - 4 Middlesex/Somerset/Hunterdon, NJ
  - 5 Fort Lauderdale, FL
  - 6 Fort Worth/Arlington, TX
  - 7 Orlando, FL
  - 8 Houston, TX
  - 9 Monmouth/Ocean, NJ
  - 10 Nashville, TN
  - ...
  - 15 Columbus, OH
  - 15 Minneapolis, MN
  - ...
  - 30 Baltimore, MD
  - ...
  - 46 Pittsburgh, PA
  - ...
  - 51 Indianapolis, IN
  - ...
  - 54 Cincinnati, OH
  - ...
  - 61 Cleveland/Lorain/Elyria, OH**



In the past 30 years,

**all net  
new job  
growth**

stemmed from  
high growth  
entrepreneurial  
companies.

# Roles JumpStart Plays in NEO

## Direct Entrepreneurial Advisor

Deliver **high-impact business assistance** directly to entrepreneurs.

## Direct Investor in High-Potential Co's

**Invest directly** in early stage, high growth Northeast Ohio companies.

## Partner/Advocate of Network

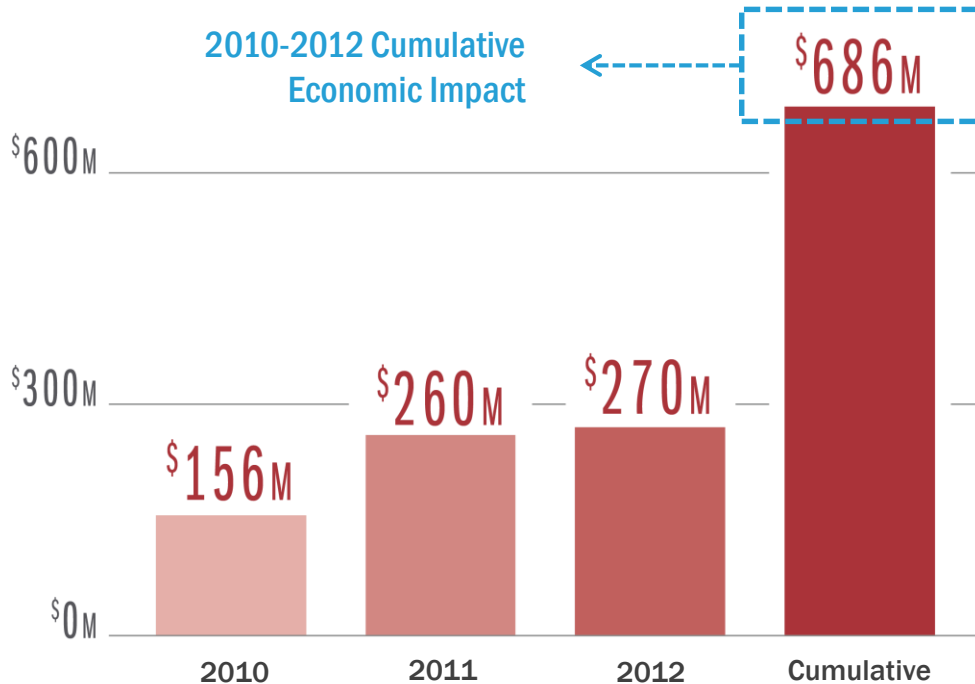
**Champion new regional resources** and programs via a combination of promotion and advocacy.

## Resource Manager

**Manage a Network** of nearly 30 entrepreneurial resources to deliver efficient and effective support to entrepreneurs.

# Real Economic Impact

*JumpStart Clients*



Economic Impact is the economic benefit generated for the State of Ohio (total change in value of goods and services) due to the activity of the companies and is calculated independently by the Center for Economic Development at the Maxine Goodman Levin College of Urban Affairs at Cleveland State University.

# The JumpStart Network's Impact



BOLD Guidance | Cleveland, Ohio



SironRX Therapeutics | Cleveland, Ohio



Sociagram | Independence, Ohio

**\$229M**

In revenues generated by  
client companies in 2012

**5,500**

jobs created and sustained by  
client companies

**\$1.3B**

follow-on capital collectively  
raised by clients

ECONOMIC  
DEVELOPMENT

LIVABILITY &  
ATTRACTIVENESS

ARSENAL

WORKFORCE

CHAMBER



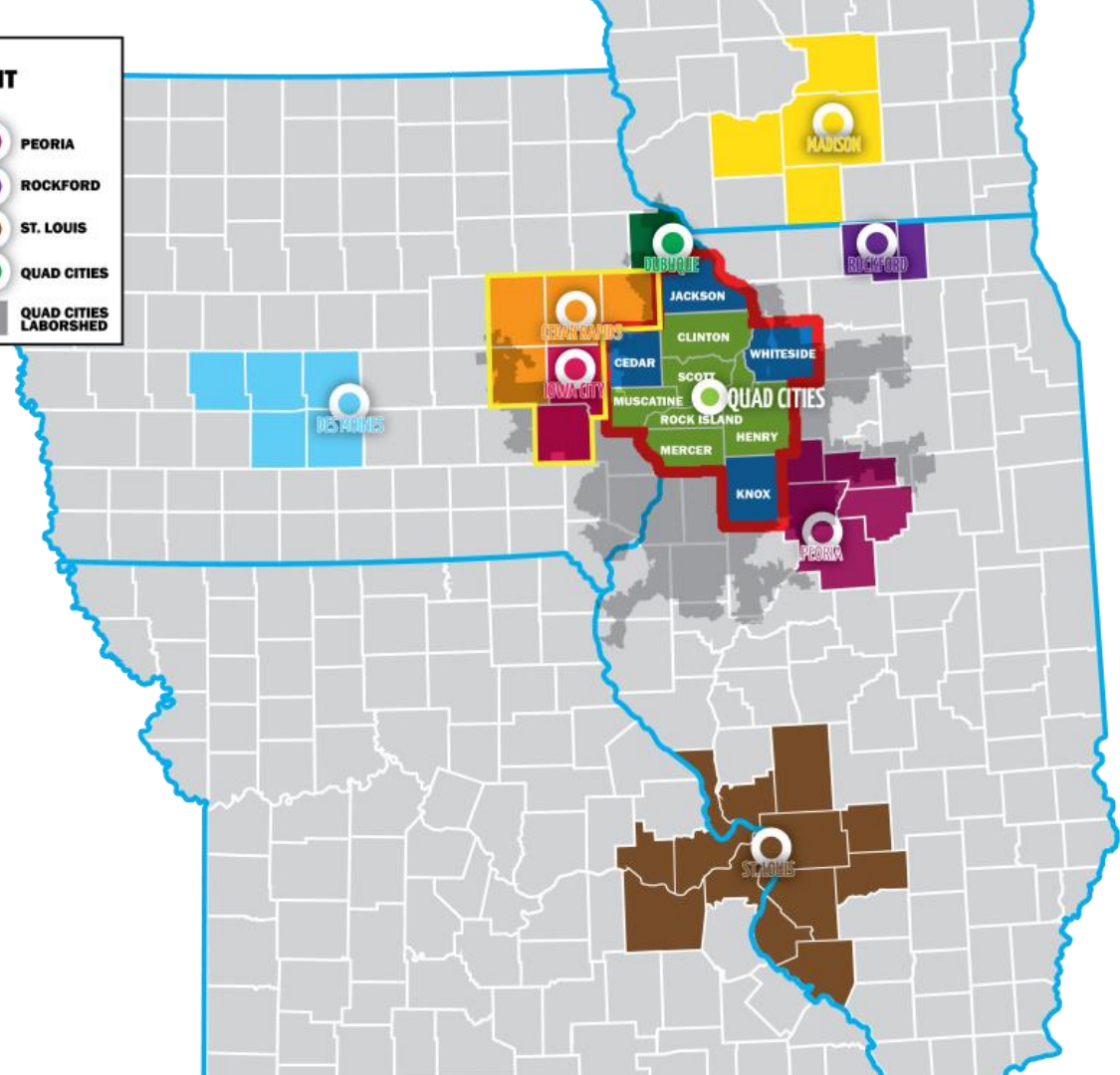
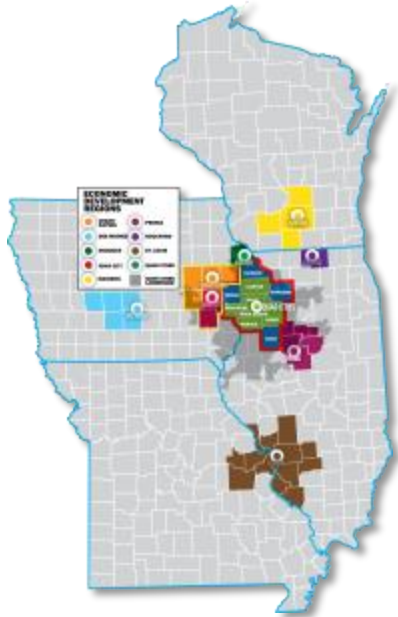
Regional Opportunities Council





# Quad Cities

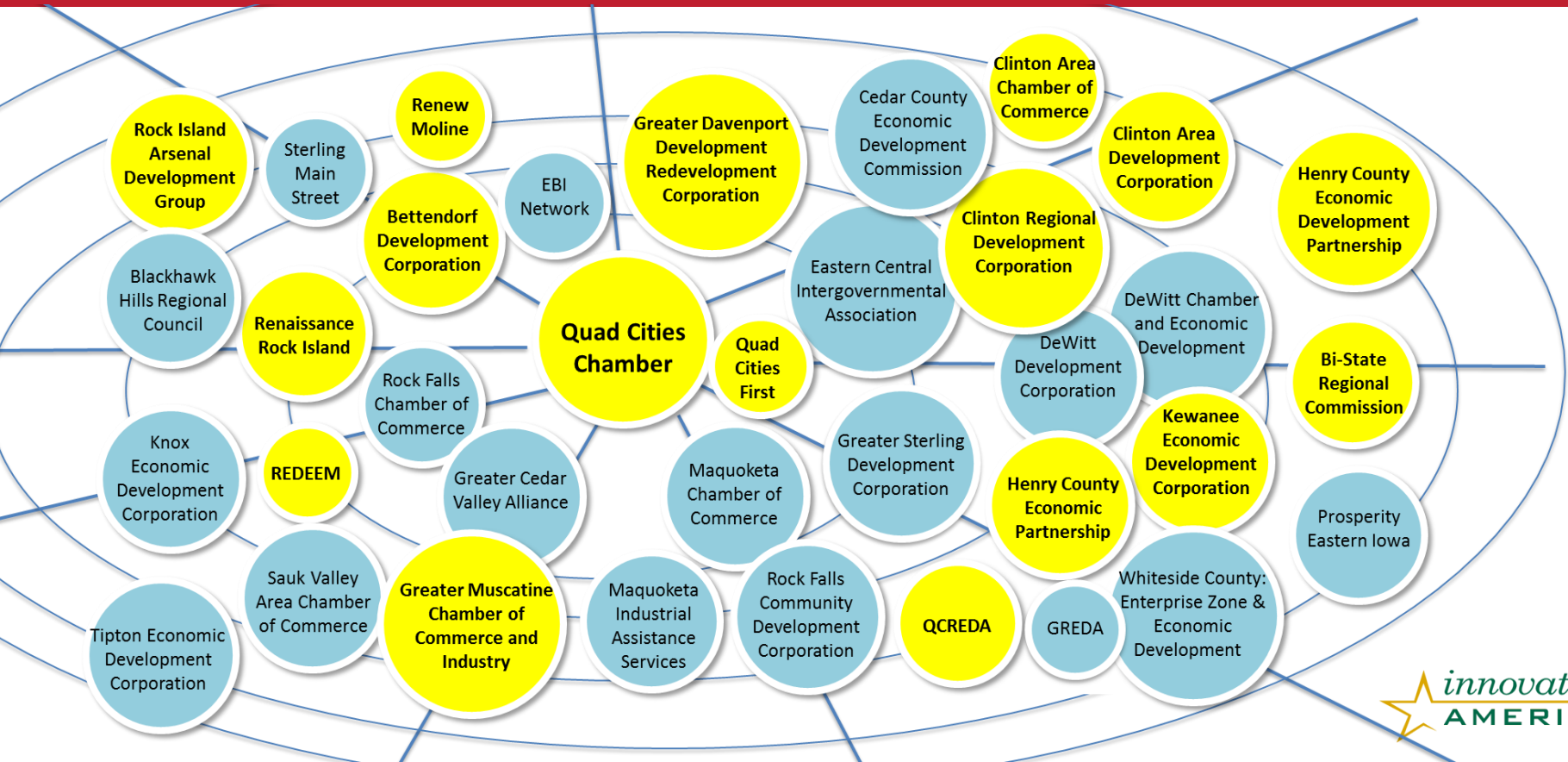
Metro Population:  
380,000



# Use the Mississippi River as our Unifying Principle and Differentiator



# Connect the Quad Cities Region



# Key Points, Gaps and Findings of the Asset Mapping and Opportunity Analysis

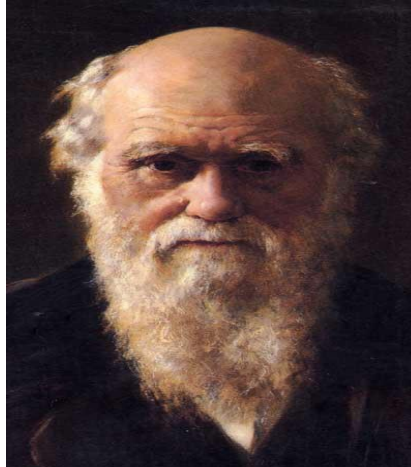
1. Human Capital: Including K-12 and higher education institutions
2. Research and Development Institutions
3. Financial Capital
4. Industrial Base
5. Legal and Regulatory Environment
6. Physical Infrastructure
7. Quality of Life



# 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



# Innovation Paradigm Shift

## PROOF OF CONCEPT

(Technological Feasibility)

“It Works!”



## PROOF OF COMMERCIAL RELEVANCE

(Market Pull)

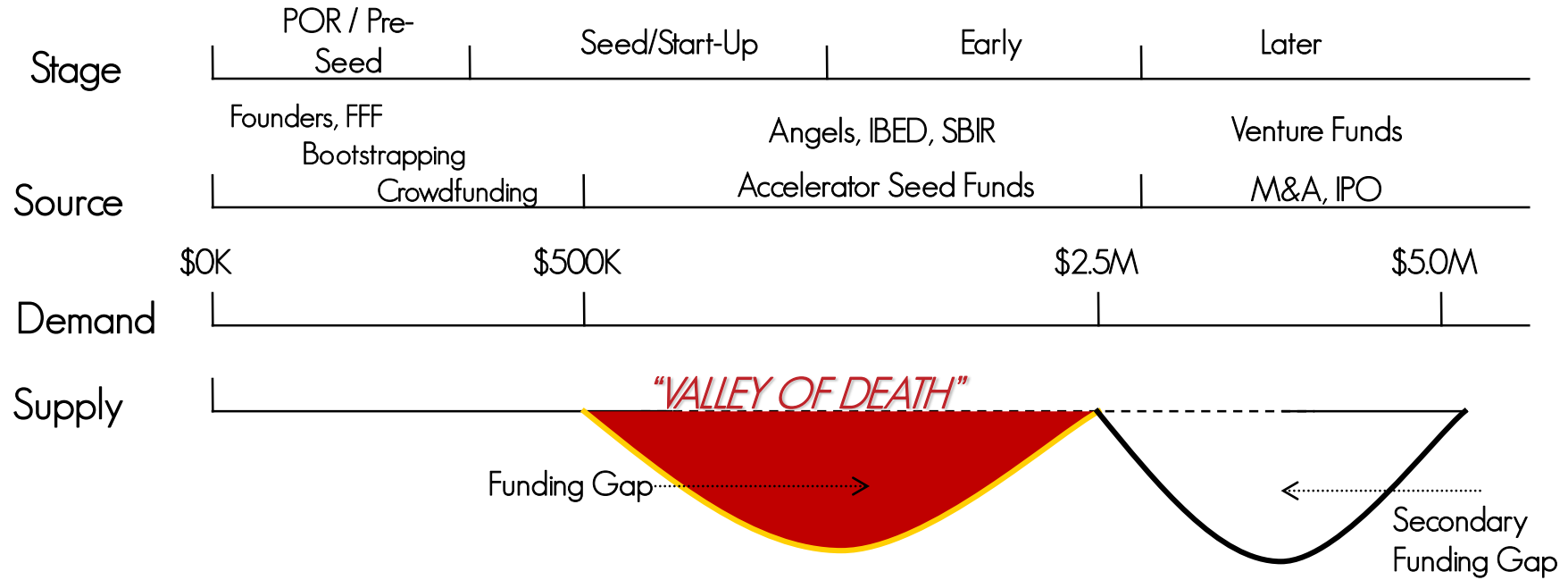
“I’ll Buy It!”



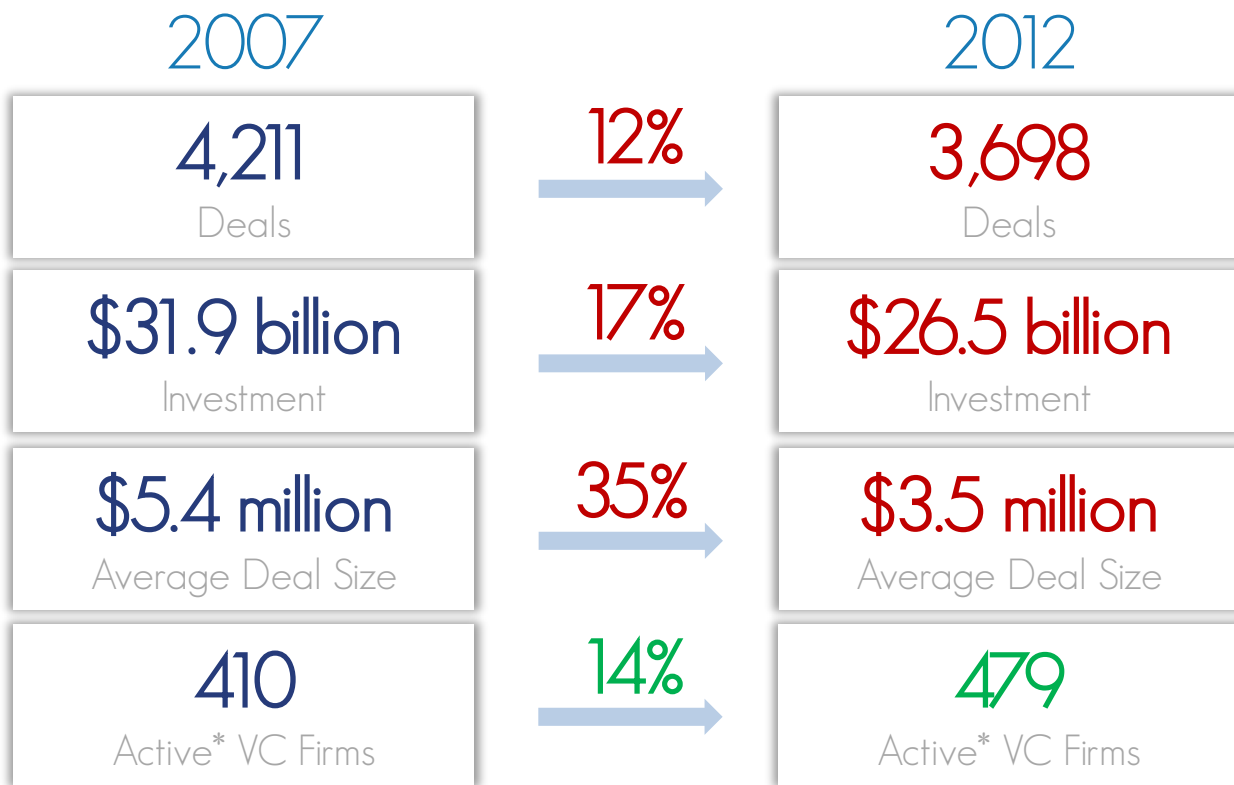
The Historic  Garage  
invent

**CASH IS KING!**

# Innovation Capital Valley of Death



# US Venture Capital Investment



\*VC firms completing 4 or more deals per year



# Bootstrapping

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



- > 200 accelerators exist & spreading rapidly
- > 1,250 incubators exist in the US
- Could grow > 400 to 500 in 5 years
- Focus on emerging tech sectors

# European Seedcamp Accelerator Numbers



- To date invested in a total of 93 companies (10 so far in 2013)
- More than 7876 applications
- Backed founders from 36 different countries
- Companies raise between \$330,000 and \$2 million within 3-6 months
- 80% of companies in 2012 have raised follow up funding

# Crowdfunding

**Crowdfunding** – as its name implies—aims to reach a funding goal by getting many investors to put in small amounts.



# Leading Crowdfunding Organizations

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

**KICKSTARTER**



 **MicroVentures**

 **profounder**

 **peerbackers**  
crowdfunding big ideas

**FundWeaver**

**STARTUPFUEL** 

# The Increasing Importance of Angels

- 300,000+ angels are investing \$22 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

# Angel Fund Competitive Advantages

Individual Angels	Angel Groups	Angel Funds
<ul style="list-style-type: none"><li>▪ Typically poor returns</li><li>▪ Why:<ul style="list-style-type: none"><li>▪ Lack of expertise</li><li>▪ Generally weak due diligence</li><li>▪ Less eyes on deal</li><li>▪ Intensive workload</li><li>▪ Inadequate diversification</li></ul></li></ul>	<ul style="list-style-type: none"><li>▪ Performance - a bit better:<ul style="list-style-type: none"><li>▪ Increased chance of an expert at the table</li><li>▪ More people available to share due diligence</li><li>▪ More eyes on deal</li></ul></li></ul>	<ul style="list-style-type: none"><li>▪ <b>Competitive</b> advantages to get attractive returns:<ul style="list-style-type: none"><li>▪ Only do deals where expert is leading deal</li><li>▪ Higher quality due diligence</li><li>▪ More eyes on deal</li><li>▪ Vote process selects only the best deals</li><li>▪ Professional Administration</li><li>▪ Diversification</li><li>▪ Follow-on reserves</li></ul></li></ul>



# Angel Fund Competitive Advantages

2007

258,200

Angel Investors

57,120

Companies Financed

\$27.3 billion

Angel Investment

\$478,000

Avg. Deal Size

4%

17%

20%

32%

2012

268,160

Angel Investors

67,030

Companies Financed

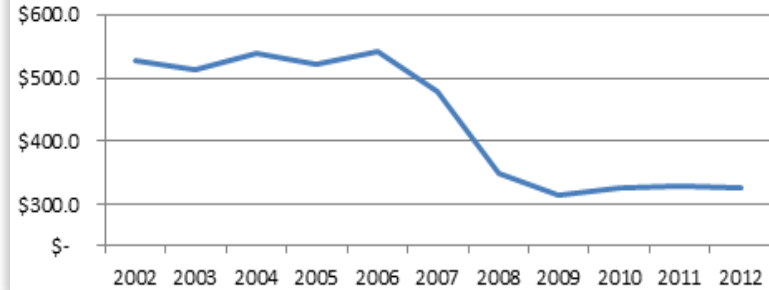
\$21.8 billion

Angel Investment

\$325,000

Avg. Deal Size

Average Size Investment (thousands)



Small Business Trends

# What is a Roadmap and 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 Roadmap Process

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



# Bill Gates

“Never before in history has innovation offered promise of so much to so many in so short a time.”





**BioHealth Innovation**<sup>SM</sup>

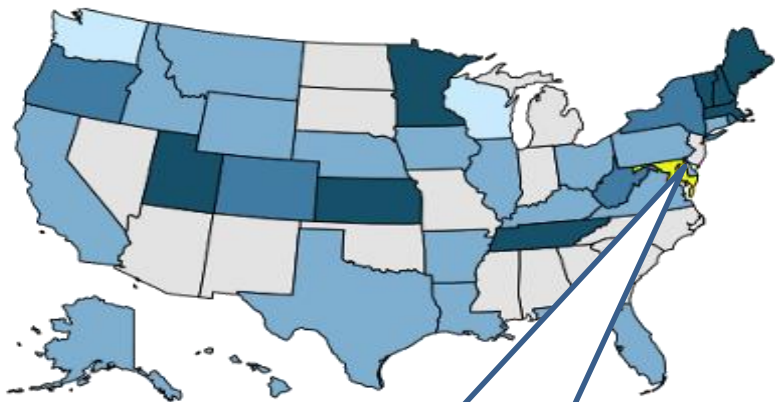
Maryland's Commercialization Collaborative

# The Region - Central Maryland

Unrivaled Research Assets  
Unfulfilled Commercial Promise



# 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



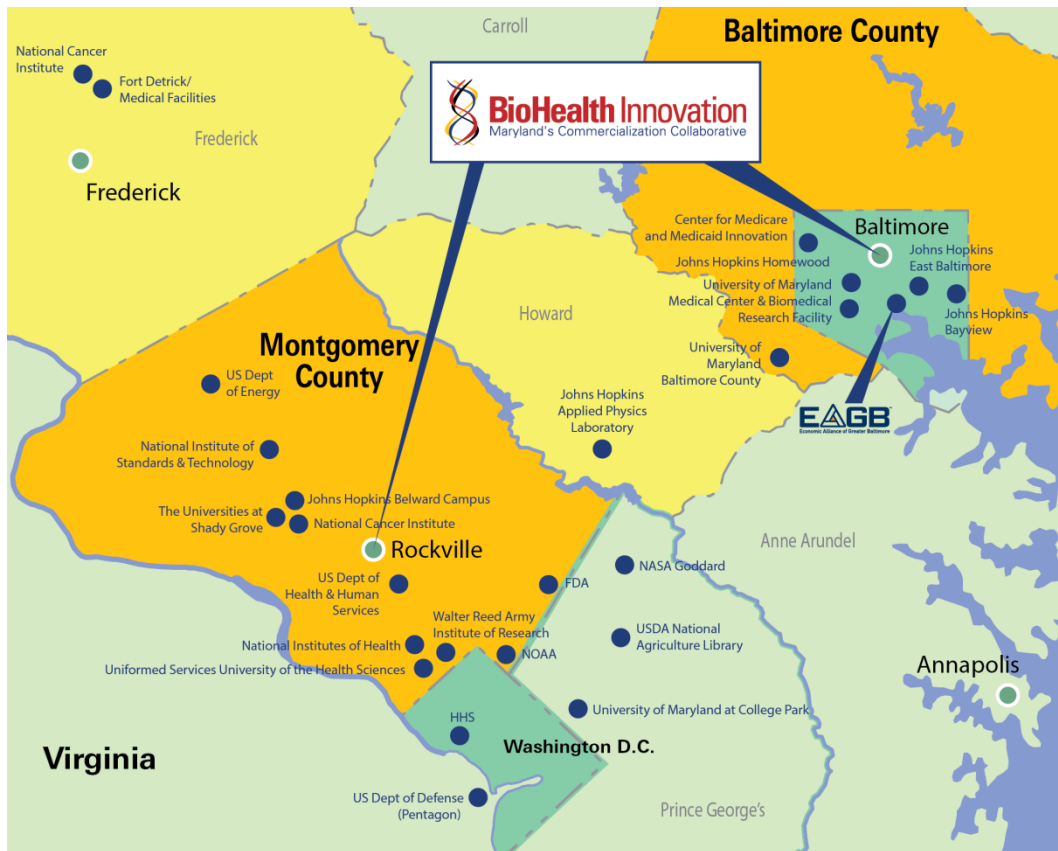
JOHNS HOPKINS  
UNIVERSITY



JHU and USM represent another \$3.5 billion in annual R&D



# A Region rich with Research Institutions



# Alignment of National, State, and Regional Policies



**Obama  
Administration**



**Governor  
O'Malley  
(Maryland)**



**County Executive  
Ike Leggett  
Montgomery County**



**Stephanie Rawlings -  
Blake  
Mayor of Baltimore**

- 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

Connects regional innovation assets

Develops an entrepreneurial talent and support pipeline

Attracts funding for technology commercialization

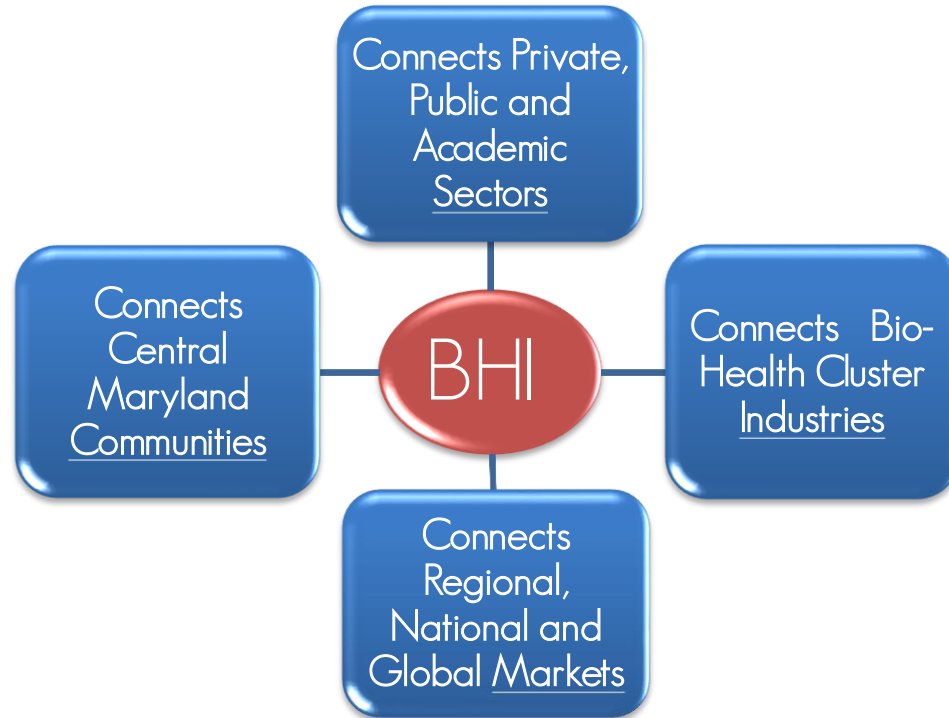
Evaluate commercially relevant federal and university technology for new spin-offs

# 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



# BHI: An Innovation Intermediary that Connects Sectors, Industries, Communities & Markets



# Regional BioHealth Ecosystem Partners

## ACADEMIA

- RESEARCH/T2
- LIFELONG LEARNING
- ECONOMIC DEVELOPMENT

## INDUSTRY

- PROFIT
- PROCESS
- PRODUCT

INSEPARABLE  
MISSIONS

## GOVERNMENT

- SUSTAINABILITY
- INFRASTRUCTURE SUPPORT
- ECONOMIC POLICY

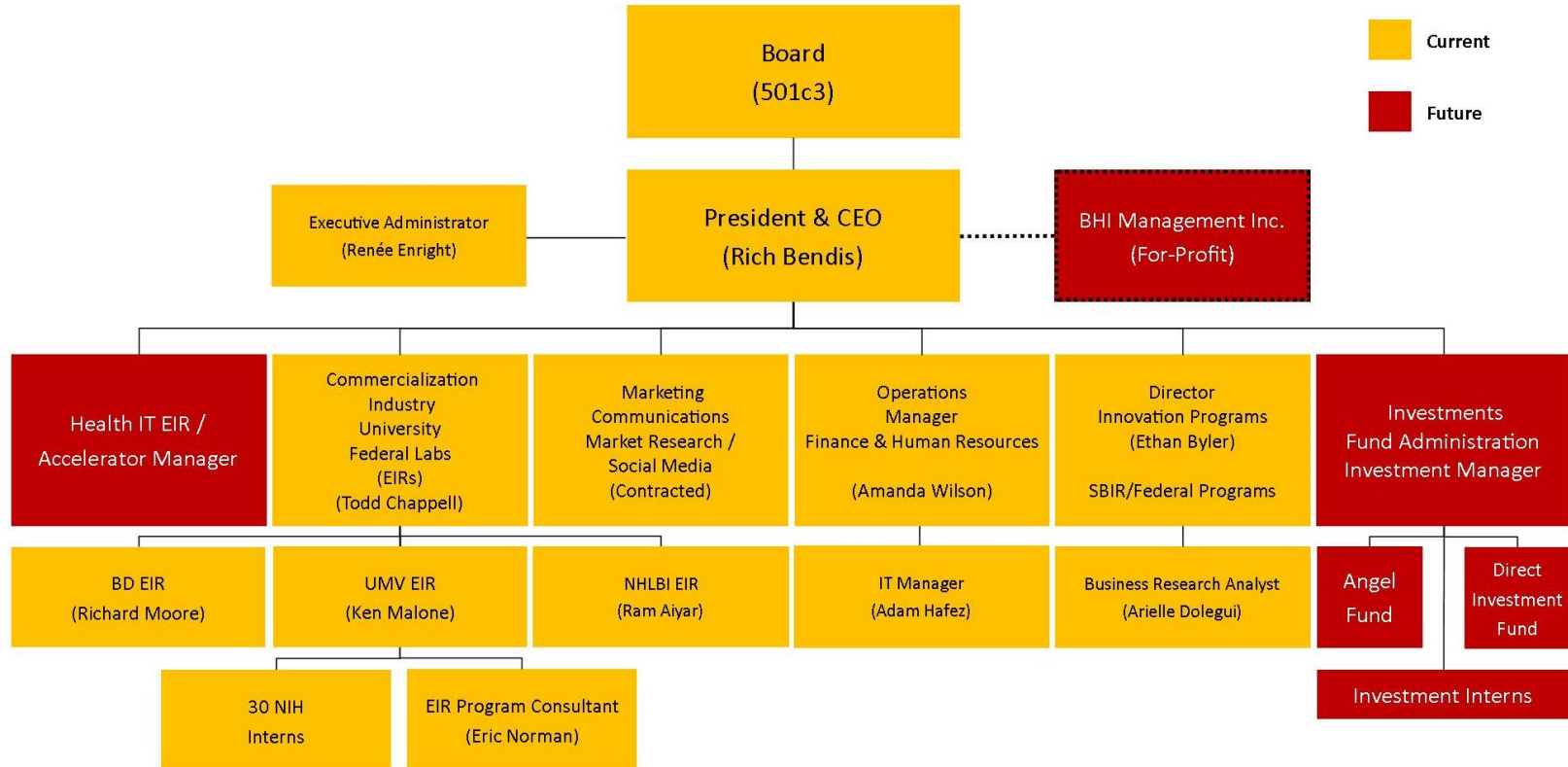
## FOUNDATIONS

- ECONOMIC GROWTH
- COMMUNITY INVESTMENT
- REGIONAL COLLABORATION

# BHI Partners and Sponsors



# BHI Organizational Chart





# BHI/EIR Technology Focus

- Therapeutics
- Diagnostics
- Medical Devices
- Healthcare Services
- E-Health
- Mobile Health
- Electronic Medical Records
- Health Informatics
- BioHealth Cyber Security

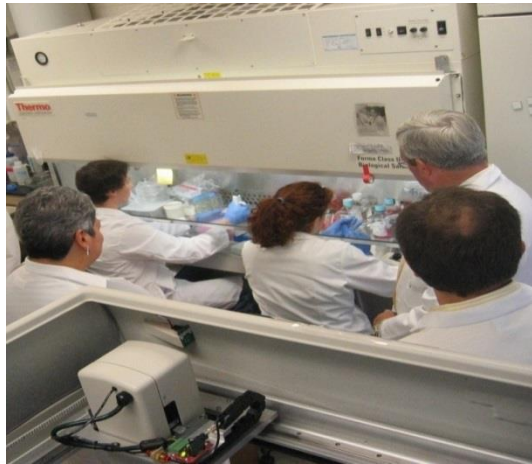


# Innovation Paradigm Shift

## PROOF OF CONCEPT

(Technological Feasibility)

Laboratory Push



## PROOF OF COMMERCIAL RELEVANCE

(Market Pull)

It works to solve a problem



**CASH IS KING!**

Pre-Proof of Concept	Translational Research/ Proof of Concept	Proof of Commercial Relevance/Pre-Seed	Seed/ Start-Up	Early Stage	Later Stage
\$25,000 - \$1,500,000 (over 5 yrs)	\$15,000 - \$750,000 (over 3 yrs)	\$3,000 - \$500,000	\$50,000 - \$1,500,000	\$200,000 - \$2,000,000	\$2,000,000+
<ul style="list-style-type: none"> <li>NIH R01</li> <li>NIH R03</li> <li>NIH R21</li> </ul>	<ul style="list-style-type: none"> <li>SBIR/STTR Grant Phase 1</li> <li>NCATS Cures Acceleration Network (CAN)</li> <li>Maryland Stem Cell Research Fund (MSCRF) - Various</li> <li>TEDCO Technology Validation Program - Proof of Concept</li> <li>TEDCO Maryland Innovation Initiative - Phase 1</li> <li>JHU - Coulter Translational Research Partnership</li> </ul>	<ul style="list-style-type: none"> <li>Maryland Industrial Partnerships (MIPS @ UMD)</li> <li>TEDCO Maryland Innovation Initiative - Phase 2</li> <li>Maryland Stem Cell Research Fund (MSCRF) - Pre-Clinical</li> <li>TEDCO Technology Validation Program - Market Assessment</li> <li>★ BHI SBIR/STTR Commercial Relevance Program (CRP)</li> <li>★ BHI Commercial Relevance Fund(CRF)</li> </ul>	<ul style="list-style-type: none"> <li>Dingman Center Angels (UMD)</li> <li>BioMaryland Biotechnology Dev. Award - Translational Res.</li> <li>TEDCO Patent Assistance Program</li> <li>TEDCO Technology Commercialization Fund</li> <li>TEDCO Maryland Innovation Initiative - Phase 3</li> <li>SBIR/STTR Phase 2</li> <li>★ BHI Central Maryland Angel Fund</li> </ul>	<ul style="list-style-type: none"> <li>Propel Baltimore Fund</li> <li>TEDCO Veterans' Opportunity Fund</li> <li>Invest Maryland: Maryland Venture Fund</li> <li>BioMaryland Biotechnology Dev. Award - Commercialization</li> <li>Maryland Health Care Product Development Corporation</li> <li>Abell Venture Fund</li> <li>MMG Ventures LLP</li> <li>TDF</li> </ul>	<ul style="list-style-type: none"> <li>Maryland Venture Fund Authority</li> <li>ABS Capital Partners</li> <li>Greenspring Associates</li> <li>Novak Biddle Venture Partners</li> <li>Sterling Venture Partners</li> <li>Harbert Venture Partners</li> <li>JMI Equity</li> <li>New Enterprise Associates</li> </ul>

## Associations

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

## Funding Type Key

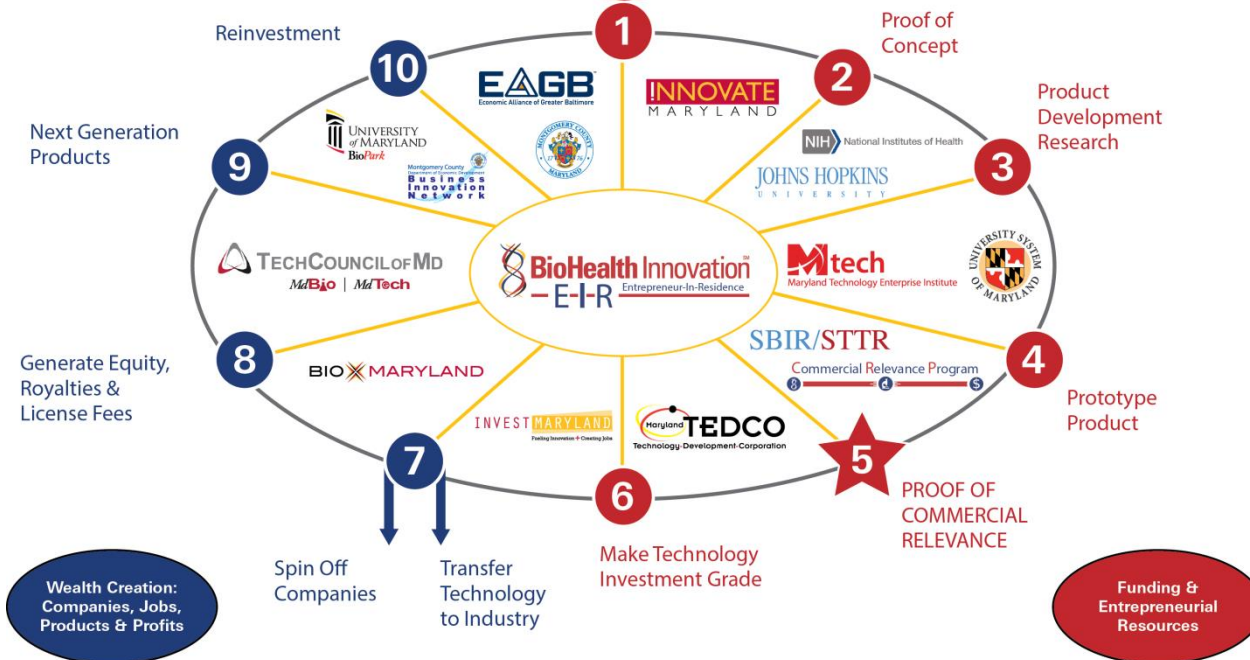
- Academic
- State of Maryland
- BioHealth Innovation, Inc.
- Federal
- Economic Development
- Private Capital

## Tax Credits

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

# BHI Commercialization Model

Inventions patented through Universities, Federal Labs, Private R&D, and Basic Research



# NIH-OTT Entrepreneur-in-Residence

- 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+ Years into Program)

- 97 Innovations identified and initially screened
- 65 NIH and 27 industry technology reviews conducted in 2013
- Entered into consulting agreement with Perceptive Navigation
- Entered into agreement with Ahead Research, Living Discoveries, Mimetas, N5 Sensors, and Perceptive Navigation
- Option Agreement for stem cell technology (JHU)
- Goal to fund the operation of more EIRs

Todd Chappell



# BHI Entrepreneurs-in-Residence



**Todd Chappell (NIH-OTT)**

Todd assists the Office of Technology Transfer (OTT) in the evaluation of existing technologies, provide an entrepreneurial perspective on new licensing proposals from start-up companies, advise on opportunities for new ventures, assist with developmental strategies, and mentor scientists to help ensure their research becomes commercially valuable.



**Ken Malone (UM Ventures)**

Ken has built his career on creating economic value from science. Whether it was developing new business lines for global corporations or spinning out new ventures from universities, he has engaged in the commercialization of hundreds of new products in advanced materials and life sciences.



**Ram Aiyar (NHLBI)**

Ram assists the National Heart Lung and Blood Institute (NHLBI) in translating disruptive science into commercially viable technologies. He works with the relevant stakeholders within the NIH to develop commercial plans and/or develop licensing opportunities such that the NIH technologies can be translated into commercially viable entities that will solve unmet medical needs of patients.



**Rich Moore (BD Diagnostics)**

Dr. Moore previously served as the Chief Scientific Officer for OpGen, Inc. In that role, Dr. Moore provided leadership over multiple R&D functions, and led the company's Scientific and Clinical Advisory Boards. Prior to that, he spent 12 years at BD Diagnostics holding various positions, most recently as R&D Director, Systems Integration and Advanced Technology.

# The Startup Company Spectrum

## Startup Spectrum

BHI Sweet Spot



Idea  
Technology



True NewCo  
Inventor  
IP



Early Stage  
Inventor  
IP  
Non-Dilutive Funding



Seed Stage  
Management Team  
IP Portfolio  
Seed Funding  
Proof-of-Principle



Series A  
Management Team  
IP Portfolio  
VC Funding  
Technology De-risked

# Early-Stage Analysis of Commercial Relevance

## Selected Criteria for Value Proposition

Differentiation

Efficacy Data

Market Size

Reimbursement

Safety Data

Unmet Medical Need

Stage of Development

Industry Interest

Intellectual Property

Competitive Landscape

Advantages for Clinical  
Development

Novelty

Identify Key Issues

Primary and secondary analysis

Can key issues be overcome by  
capital efficient investment?



# Small Business Innovation Research (SBIR)

- \$2.5 billion annual United States Government Program coordinated by the Small Business Administration
- Administration Provides grants or contracts to small businesses to spur technological innovation
- Grants awarded in 3 Phases between \$150,000 and \$1 million
- Non-dilutive

**SBIR/STTR**  
SMALL BUSINESS INNOVATION RESEARCH  
SMALL BUSINESS TECHNOLOGY TRANSFER



# 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.

# 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

## 4 Mobile Sector Still Hot

Deals and Dollars



in Internet, Healthcare and Mobile

## % of deals



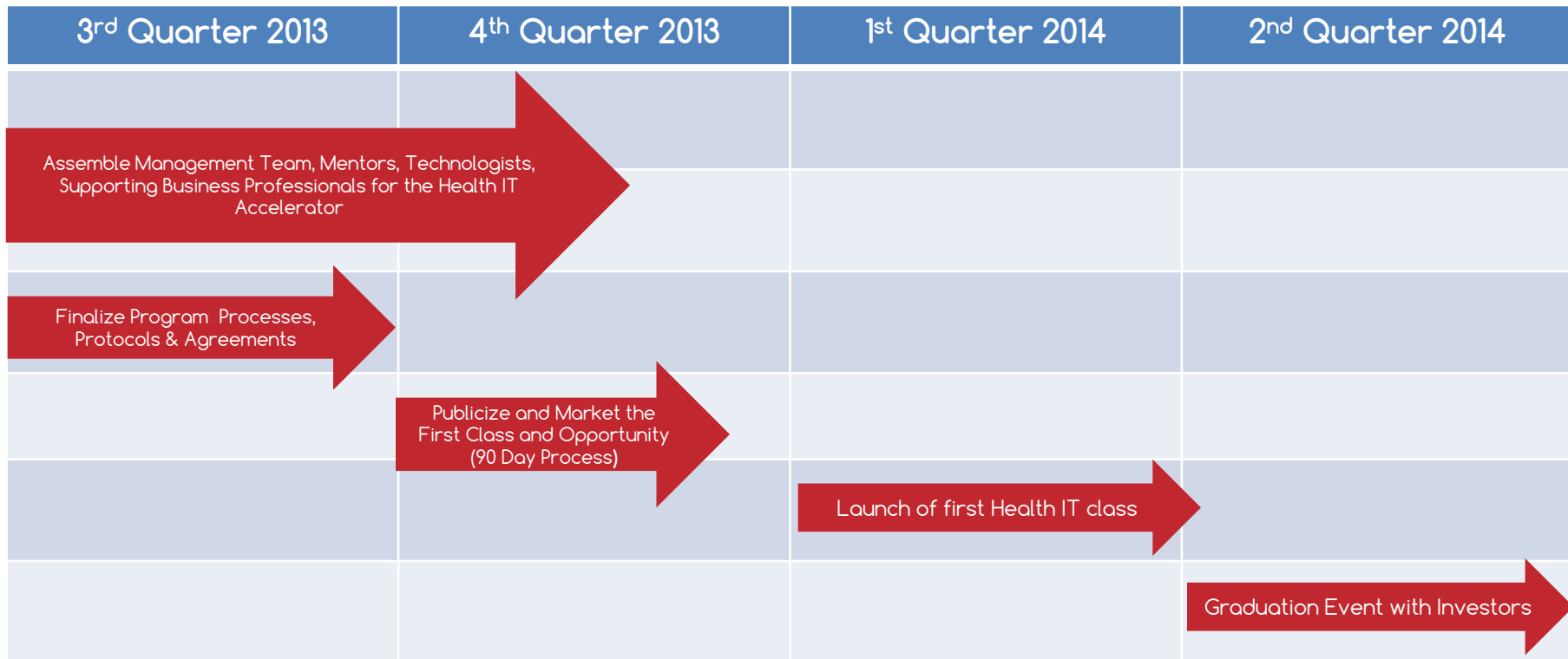
## \$m invested

- + Indicates an increase over Q1 2012
- Indicates a decrease from Q1 2012

# What is a Health IT Accelerator?

- ✚ 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

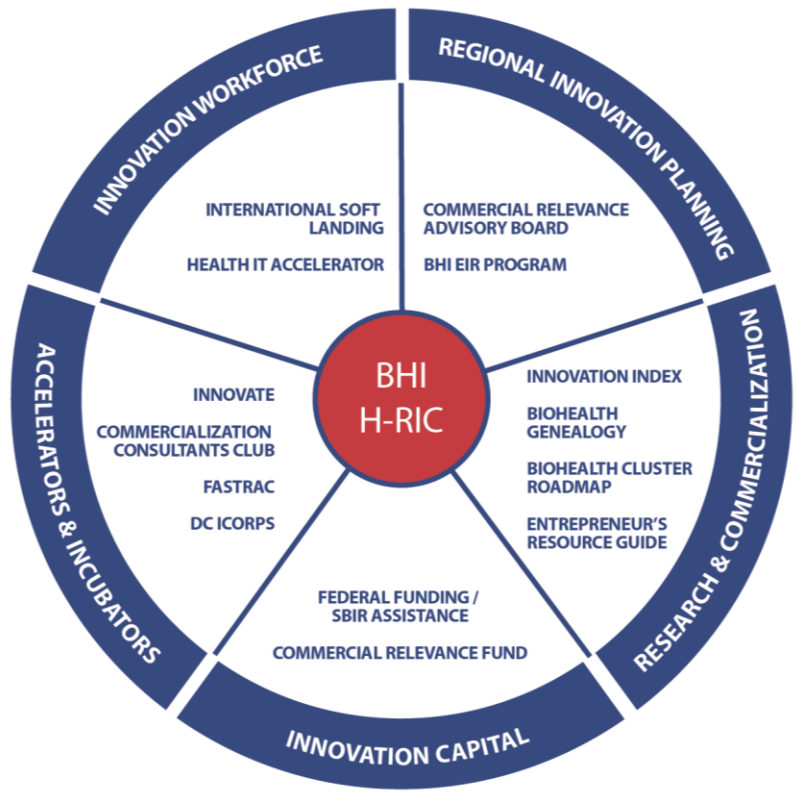
# DreamIt Health Baltimore Accelerator



# BHI Commercial Relevance 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 \$10M - \$20M
- ✚ 2013 - Assembling Private Placement Memorandum; Identify Investors
- ✚ 2014 - Launch Fund

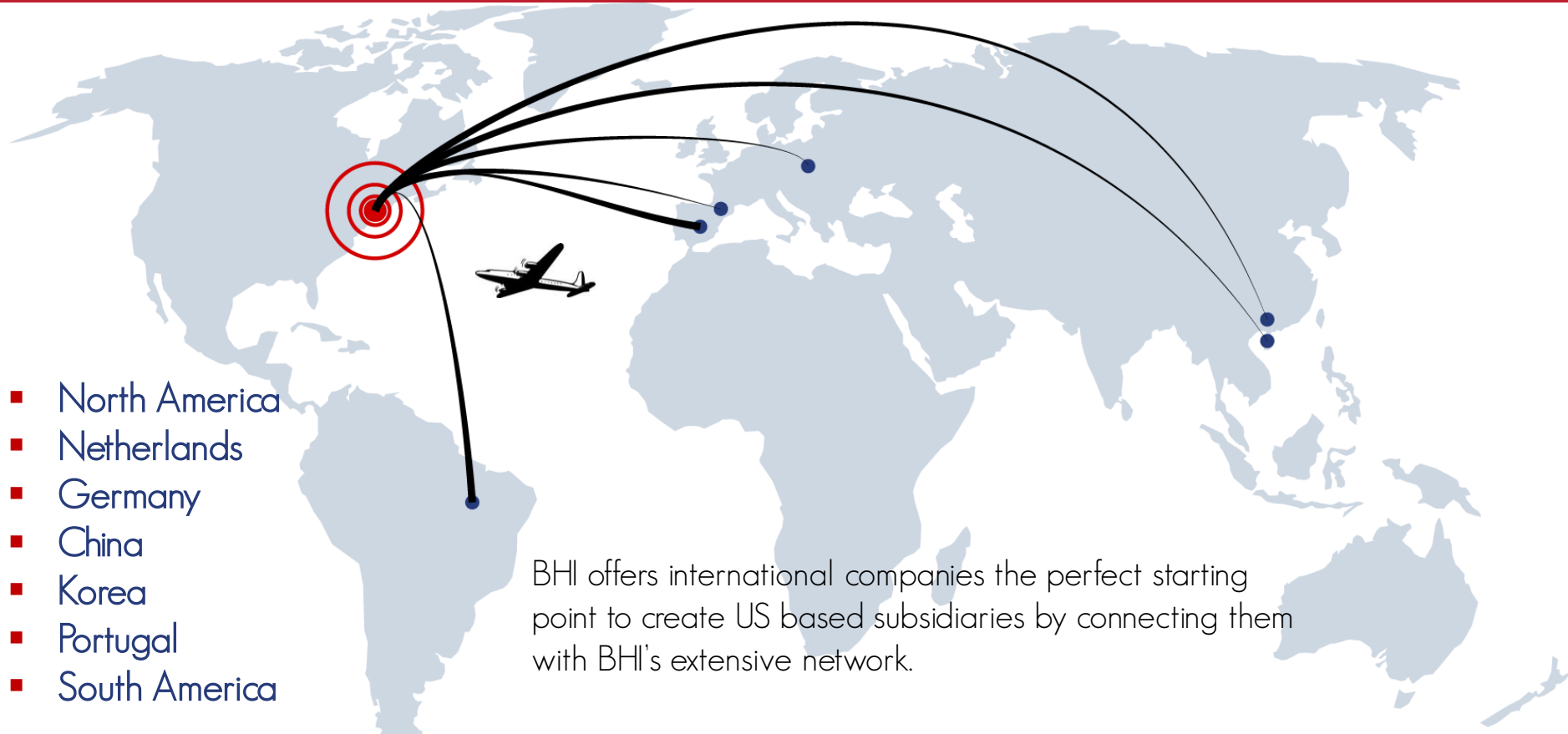
# BHI H-RIC Model



## 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 Soft Landing

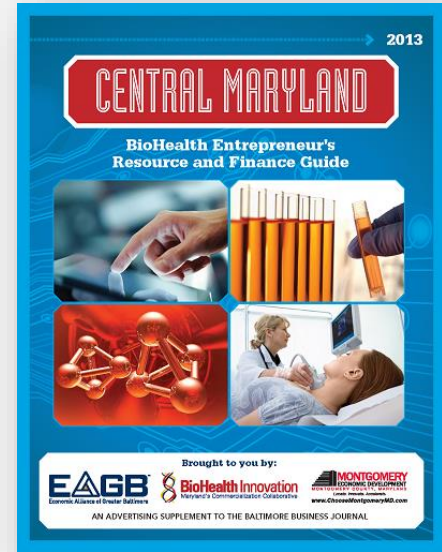




# Central Maryland Entrepreneur's Resource and Finance Guide

## “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 Website and News



## 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>

# BHI: The Triple Bottom Line

**Grows** high-paying jobs and businesses



**Expands** tax base; **improves** economic vitality



...and **Benefits** human health!

# What Should NWPA Do to Grow its Innovation Economy?

- 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



# 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



# Contact

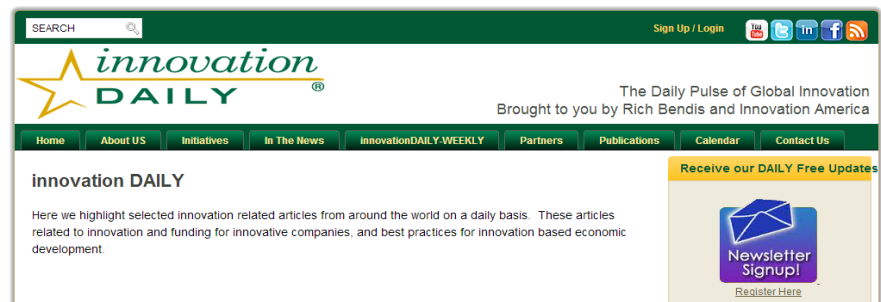
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