



BOARD OF REGENTS

SUMMARY OF ITEM FOR ACTION
INFORMATION OR DISCUSSION

TOPIC: BioHealth Innovation -- Maryland's Commercialization Collaborative

COMMITTEE: Economic Development and Technology Commercialization

DATE OF COMMITTEE MEETING: March 29, 2012

SUMMARY: The Committee will be updated on the status of the Maryland BioHealth Innovation Initiative.

ALTERNATIVE(S): This is an information item.

FISCAL IMPACT: This is an information item.

CHANCELLOR'S RECOMMENDATION: This is an information item.

COMMITTEE RECOMMENDATION:

DATE:

BOARD ACTION:

DATE:

SUBMITTED BY: Joseph F. Vivona (301) 445-2783



BioHealth Innovation

Maryland's Commercialization Collaborative

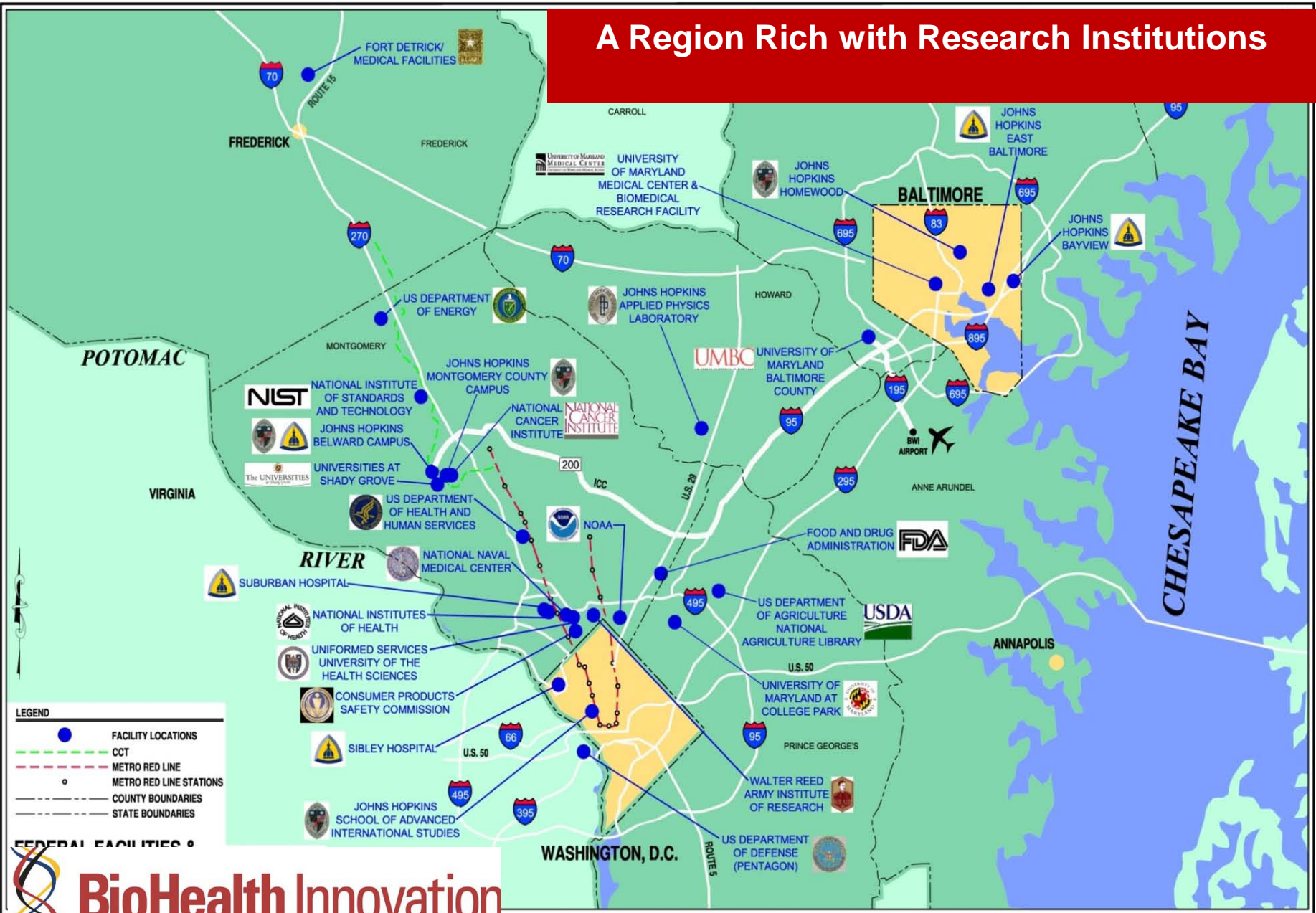
www.biohealthinnovation.org

“The Region”--Central Maryland

Unrivaed Research Assets
Unfulfilled Commercial Promise



A Region Rich with Research Institutions



The Problem--A National Challenge

America is falling behind the world it invented because we are:

- **Out-educated**
 - **Out-built in infrastructure**
 - **Out-invested in R&D**
- by countries in both Europe and Asia.

--“*That Used to Be Us*” by Thomas Friedman, 2011

The Reverse Brain Drain

- ***“Opportunities in China Lure Scientists Home”*** --The Washington Post, February 20, 2008
- American returnees to India cited as reasons for going “back” to where they came from:
 - ***better economic opportunities***
 - ***family ties***
 - ***better access to markets***

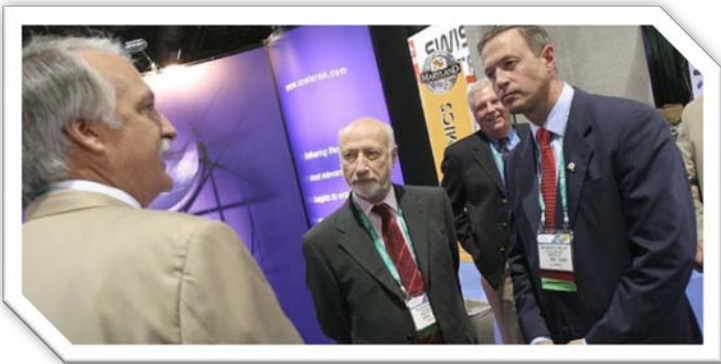
National Leadership



President Obama's Bioeconomy Initiatives & America Invents Act (2011)

- **America Invents Act**
- **Center for Advancing Translational Sciences** in NIH to advance commercialization (NCATS)
- Develop a **National Bioeconomy Blueprint** by January 2012
- **Presidential Memo** *“Accelerating Technology Transfer and Commercialization of Federal Research in Support of High-Growth Businesses”*
 - Establish goals and measure progress
 - Streamline the federal government’s technology transfer and commercialization process
 - Facilitate commercialization through local and regional partnerships

State Leadership



Maryland Governor O'Malley:

- **BioMaryland 2020**
- **Invest Maryland**

- **Maryland Biotechnology Investment Tax Credit (\$6 m/yr)**
- **BioMaryland 2020** blueprint
- **Invest Maryland** (\$70 million)
- Maryland Life Sciences Advisory Board
- **The Maryland Venture Fund**
- **Maryland Innovation Initiative**

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 a STEM Workforce

BHI Value Proposition

Connects regional innovation
assets

Develops an entrepreneurial
talent and support pipeline

Attracts funding for technology
commercialization

Develops a continuum of
innovation workforce

BioHealth Regional Innovation Cluster Assets

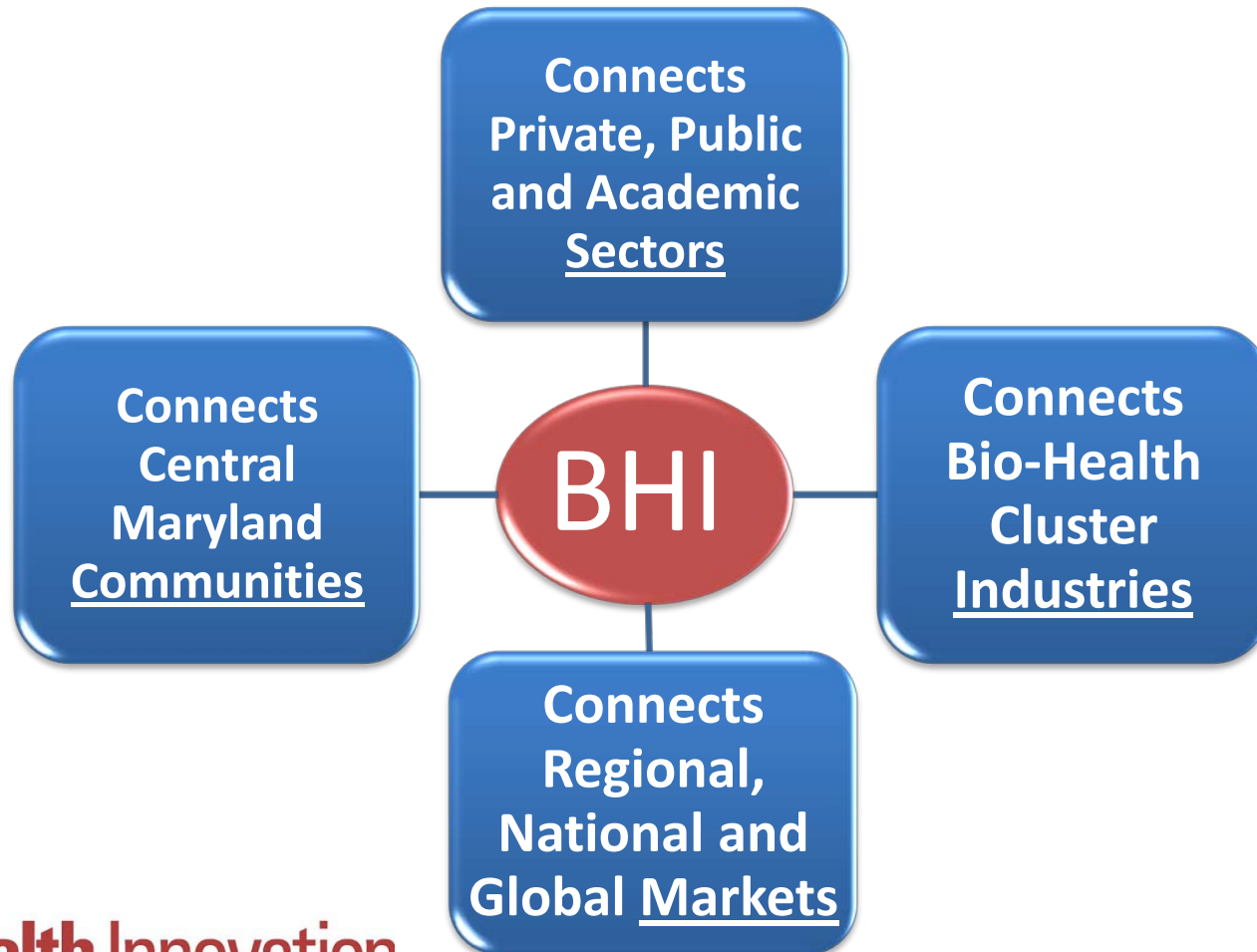


What is A Regional Innovation Intermediary?

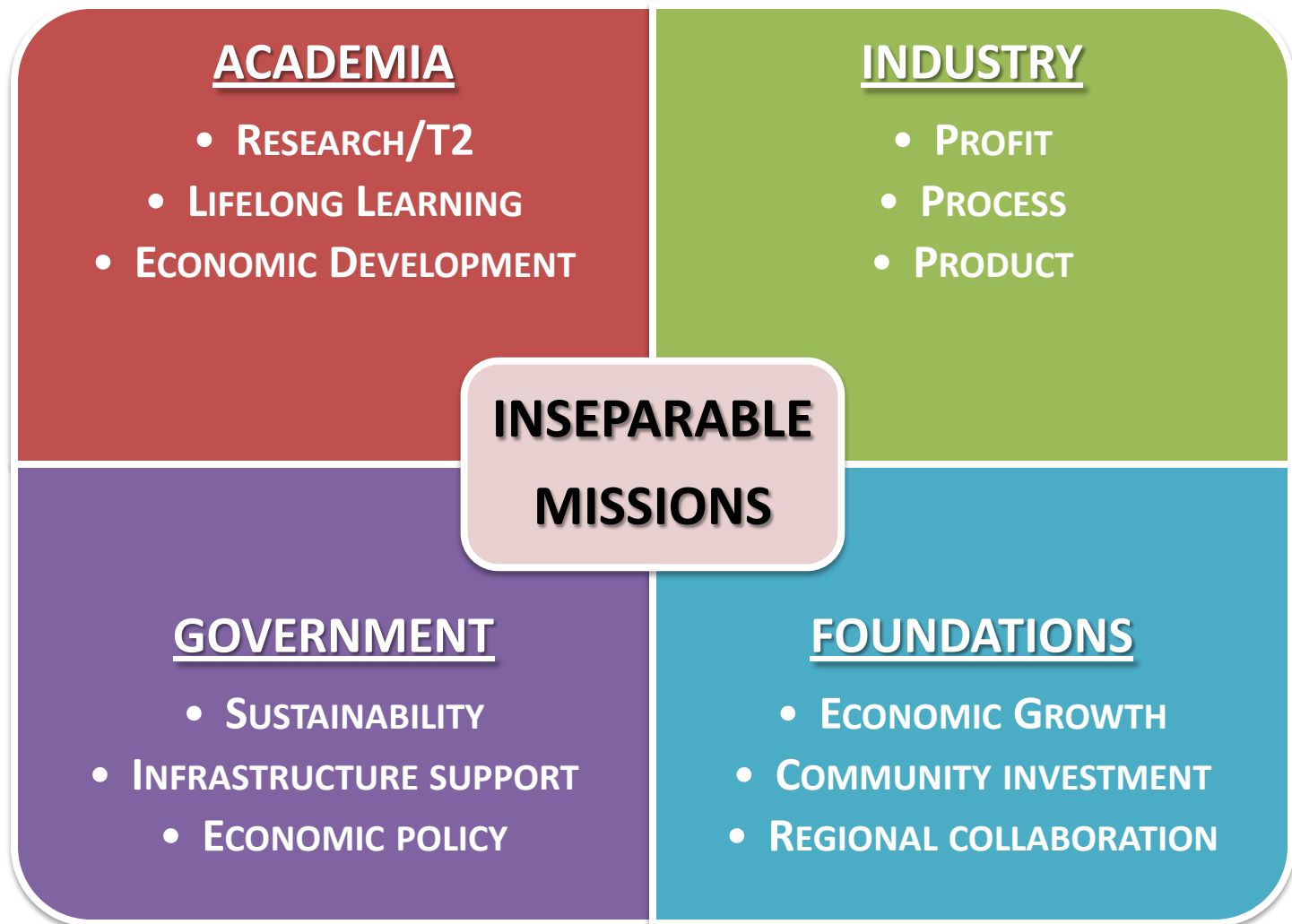
- An organization at the Center of the region's, state's and country's efforts
 - Align local technologies, assets and resources
 - Advance Innovation
- Regionally-oriented
- Private-public partnership, 501(c)(3) nonprofit
- Market-driven, private sector-led
- Not a government initiative, nor a membership organization



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



Regional BioHealth Ecosystem Partners



BHI Founding Partners and Sponsors



JOHNS HOPKINS
UNIVERSITY



NEA[®]



BHI Funding Sources:

- private sector
- universities and foundations
- public sector

VENABLE[®]LLP

Economic
Alliance of
**GREATER
BALTIMORE**



Cassidy
Turley / Commercial
Real Estate Services

BHI Board of Directors

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Managing Director, Venable LLP

Richard Bendis

Interim CEO, BioHealth Innovation, inc.

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Executive Vice President of
Commercial Operations, MedImmune

Kenneth Carter

Chair, Noble Life Sciences

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Vice President, Corporate Communications and
Public Policy, Human Genome Sciences

William G. Robertson (Treasurer)

President & CEO, Adventist Healthcare

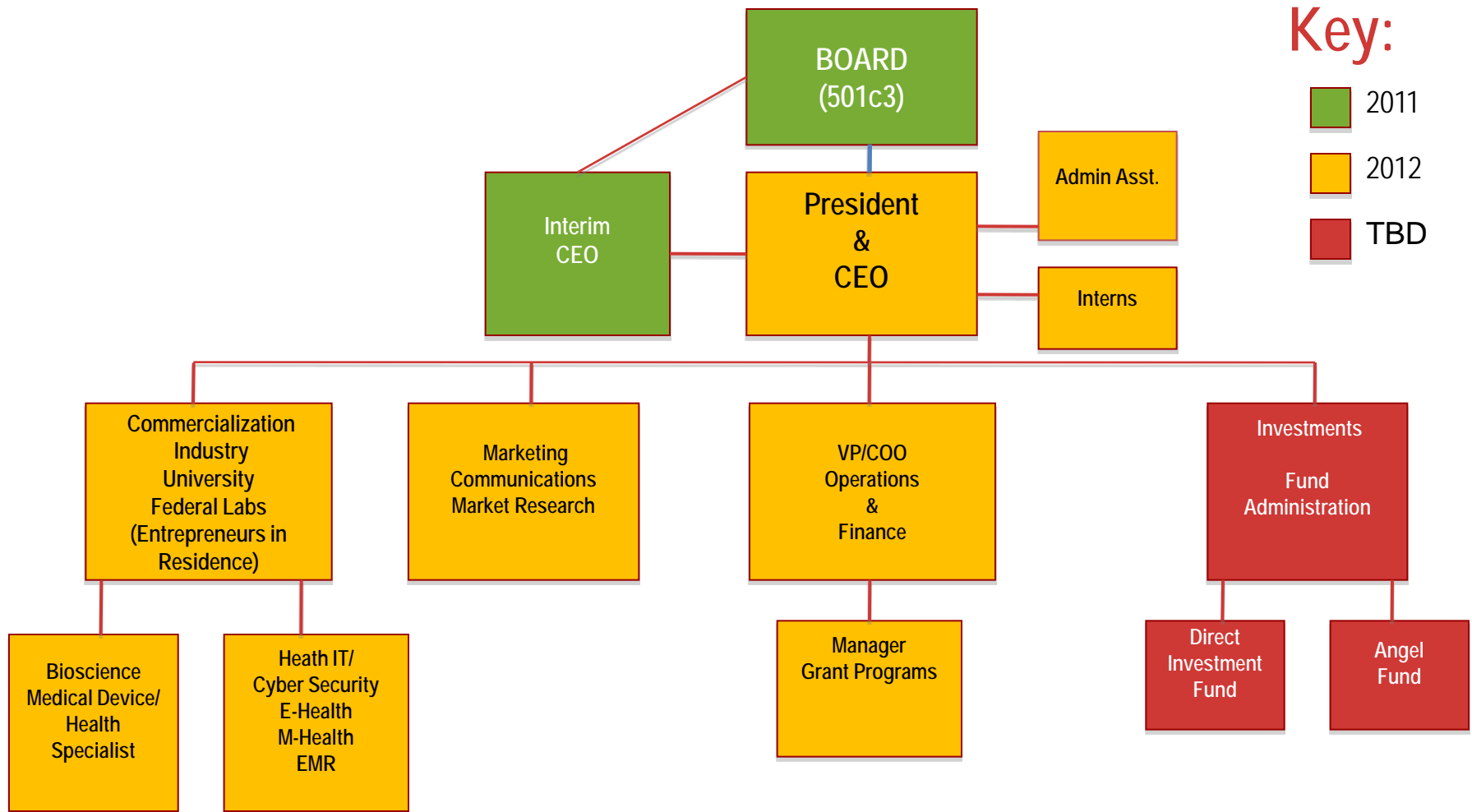
J. Thomas Sadowski

President & CEO, Economic Alliance of Greater
Baltimore

Thomas Street

Assistant Chief Administrative Officer,
Montgomery County Government

BHI Organizational Chart



BHI Industry Focus

- Biotechnology
- 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

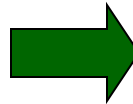
“It Works!”

PROOF OF COMMERCIAL RELEVANCE

(Market Pull)

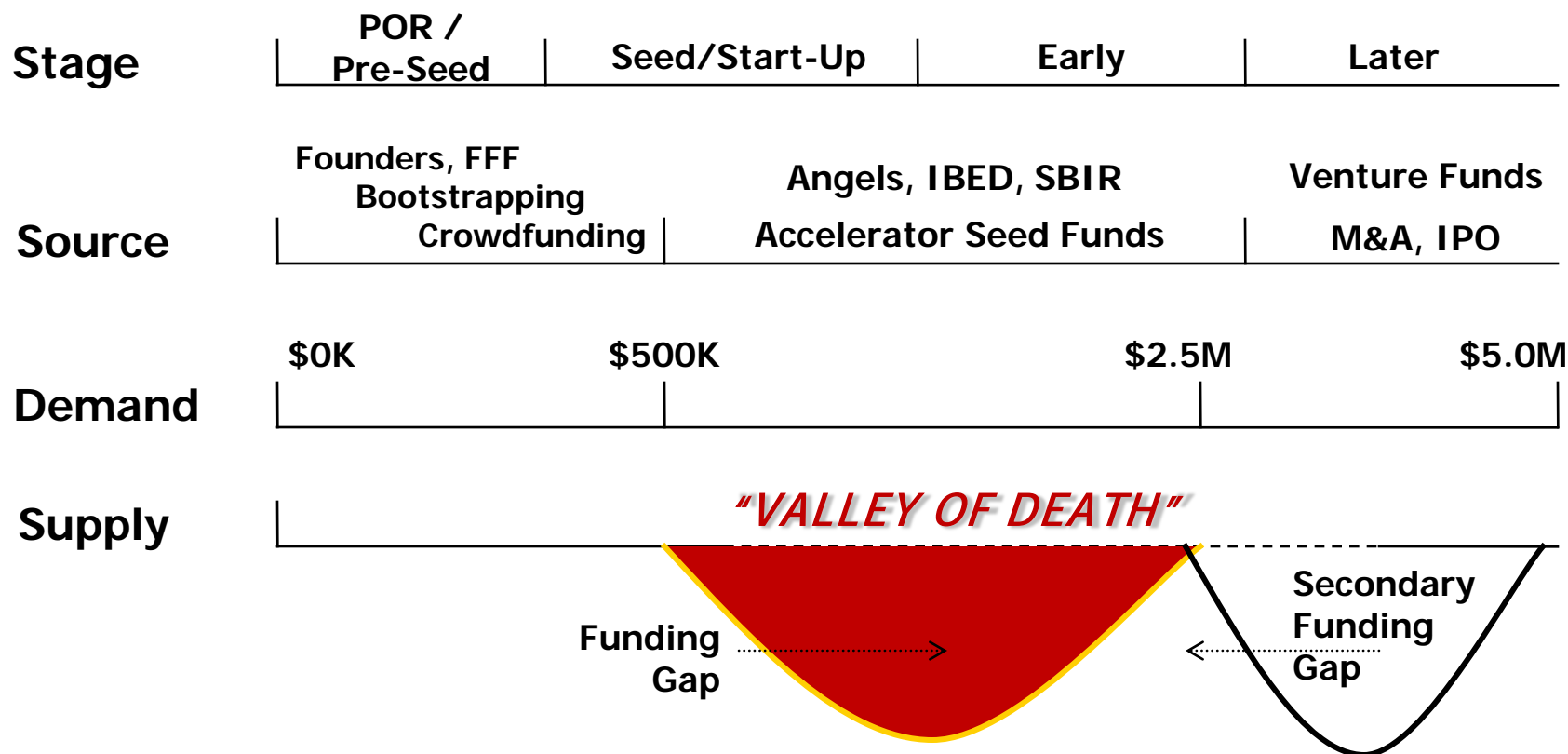
“It Works To Solve A Problem”

“I’ll Buy It”





























Innovation Capital

“VALLEY OF DEATH”

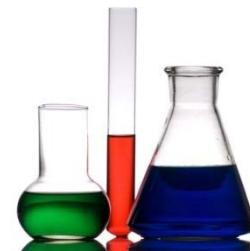
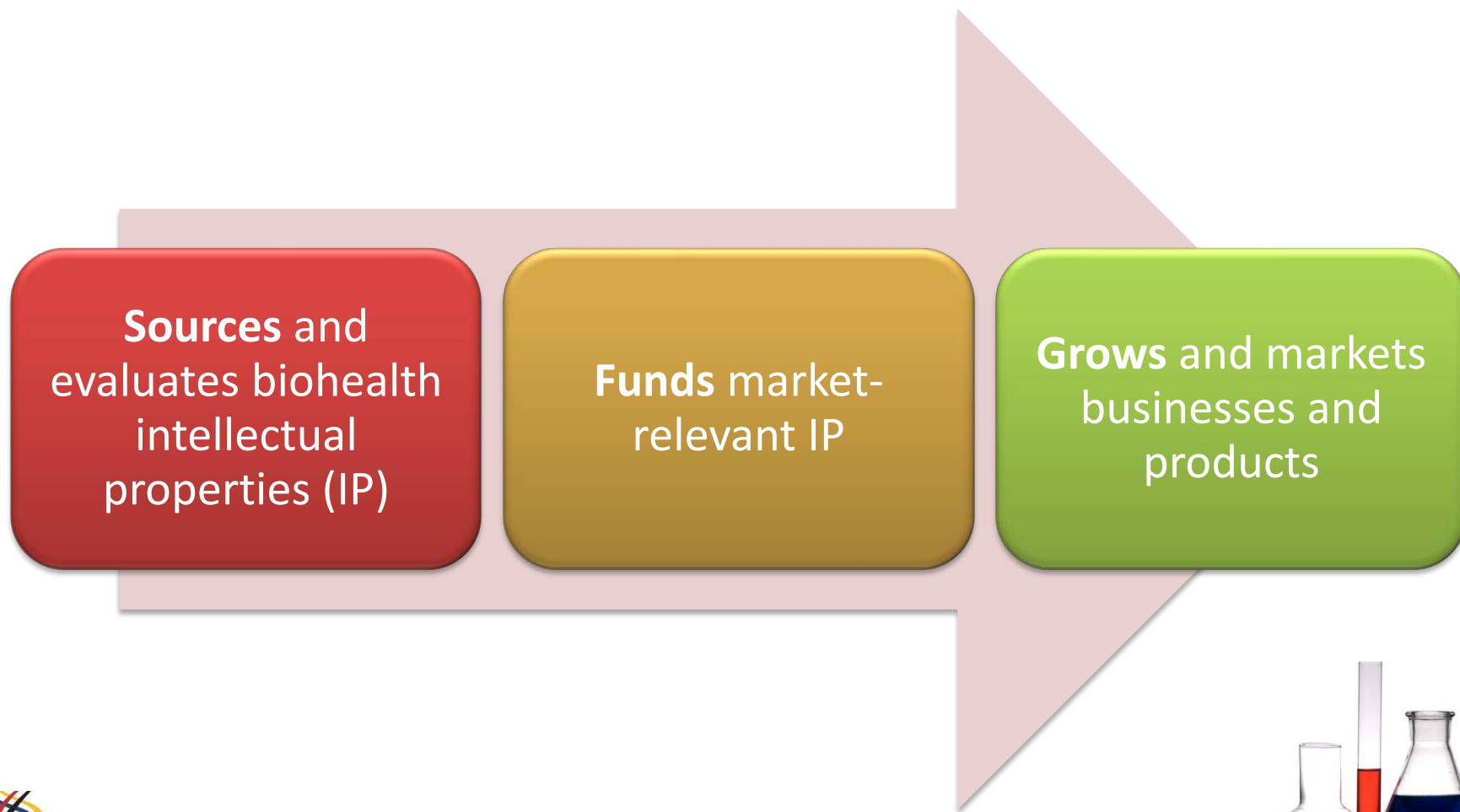


Connect Funding Sources at Every Stage to Fill Gaps

DREAM	CONCEPT	APPLIED	COMMERCIAL RELEVANCE	STARTUP	ROLL OUT	GROWTH
FoundersFFF Bootstrapping Crowdfunding	Seed	Accelerator	IBED	Federal	ANGEL	VC
      	 	 	   	   		  
	  					

How does **BHI** work?

Commercialization Pipeline



BHI Deal Goals

VC Regional History:

Last decade the region: ***\$79.8 million per year****
in biotechnology venture financing (2003-2010).

Goal:

150 prospective deals annually

Fund:

25% or 35 deals per year

Avg. Investment:

\$4.3 million per start-up

Targeted VC Annual Investment

\$150,000,000

*This includes an estimated \$57.7 million per year in Montgomery County, and \$22.1 million per year in the rest of the state.

SEED
CAPITAL



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

Partnership Intermediary Agreement (PIA)

- PIA between BHI and NIH's Office of Technology Transfer 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.

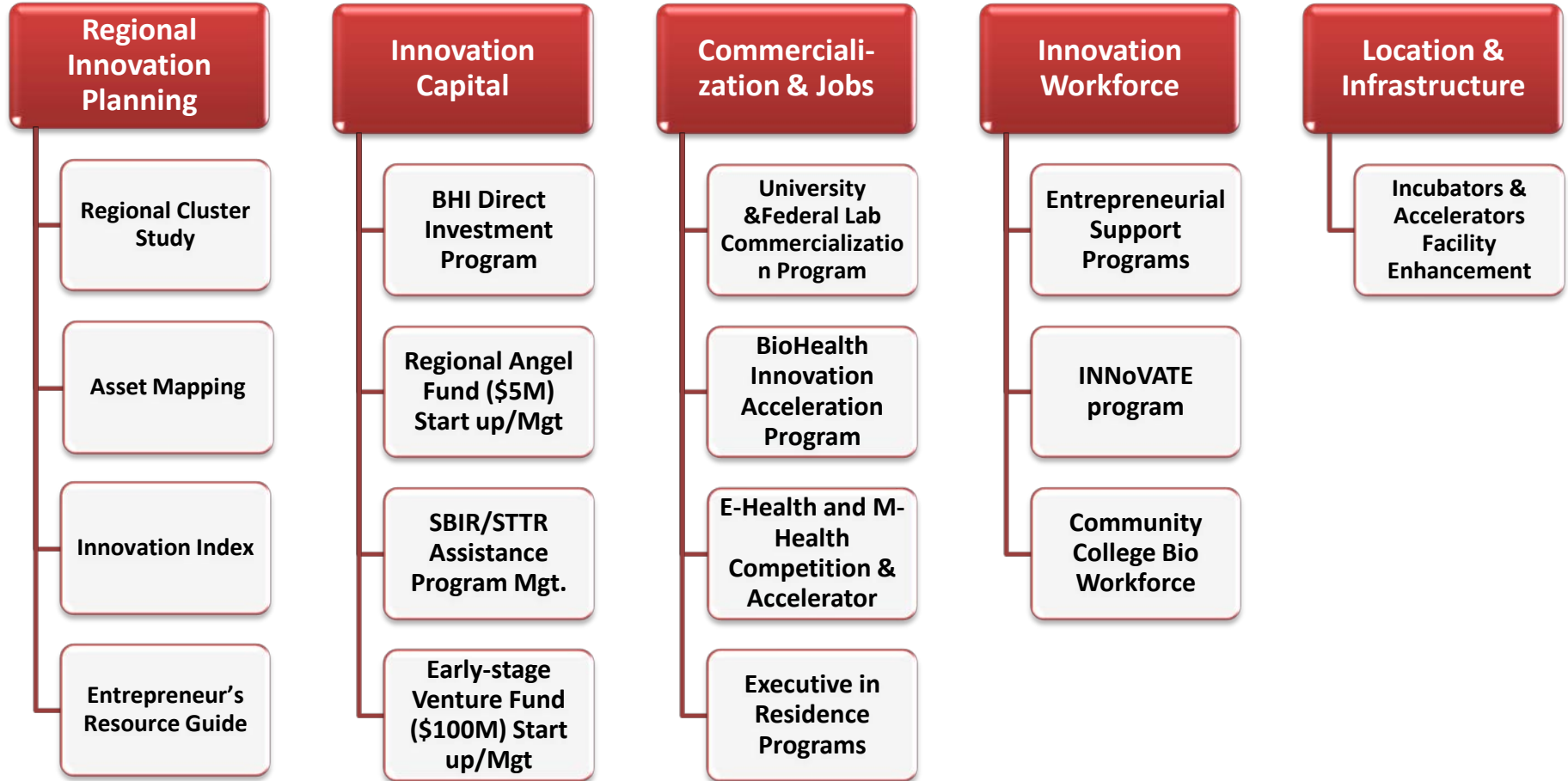
Innovation Resource Guide

“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

BHI Road Map & H-RIC

Implementation Strategy



BHI: Connecting Centers of Excellence in the Region

LifeSci Village™ at FDA



Great Seneca Science Corridor



Baltimore's Bayview
Research Cluster



University of Maryland bioPark



Science + Technology Park at JHU



1st Year Action Items

1. Generate an initial 1st year financial commitment - \$1.5M from public sector, academia, public foundations & industry.
2. Recruit Board Leadership, establish initial team & create a legal entity for BHI.
3. Develop specific metrics & outcome goals for BHI.
4. Source initial commercialization deal prospects locally, regionally, and globally.
5. Provide qualified candidate start-up firms with management counsel, business plan development support, network connection & access to early stage capital.
6. Create access to early stage capital through a network of existing funds & fund organizations.
7. Create an BHI early stage seed fund & angel fund.
8. Develop strategic partner relationships with existing regional organizations.
9. Apply for appropriate Global, Federal, Regional, State grant opportunities from Government, Foundation, & Industry sources.
10. Develop Strategic & operating plans for BHI.
11. Develop an electronic data base of all entrepreneurial, financial & innovation resources in the Region.

How is Success Measured?

BHI Metrics – First 5 Years

	Now	In 5 Years
VC Funding for Biotech	\$79 Million	\$150
Gov't Funding for Biotech	Increased SBIR proposals & success	Improve Maryland's ranking
Source Prospective Deals Annually	30	150

Improve return on R&D investment by leveraging equity investment

Create and retain 1,300 jobs

Recruit entrepreneurs, experienced managers and businesses

Commercialize biohealth technologies and create biohealth companies

BHI: The Triple Bottom Line

Grows high-paying jobs and businesses



Expands tax base; **improves** economic vitality



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



BHI Contact

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