



**BioHealth Innovation**<sup>SM</sup>  
Maryland's Commercialization Collaborative

# Montgomery County Council Briefing

Rich Bendis  
4/19/2013

[www.BioHealthInnovation.org](http://www.BioHealthInnovation.org)

# “The Region” - Montgomery County

**Unrivaled Research Assets**  
**Unfulfilled Commercial Promise**



# 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

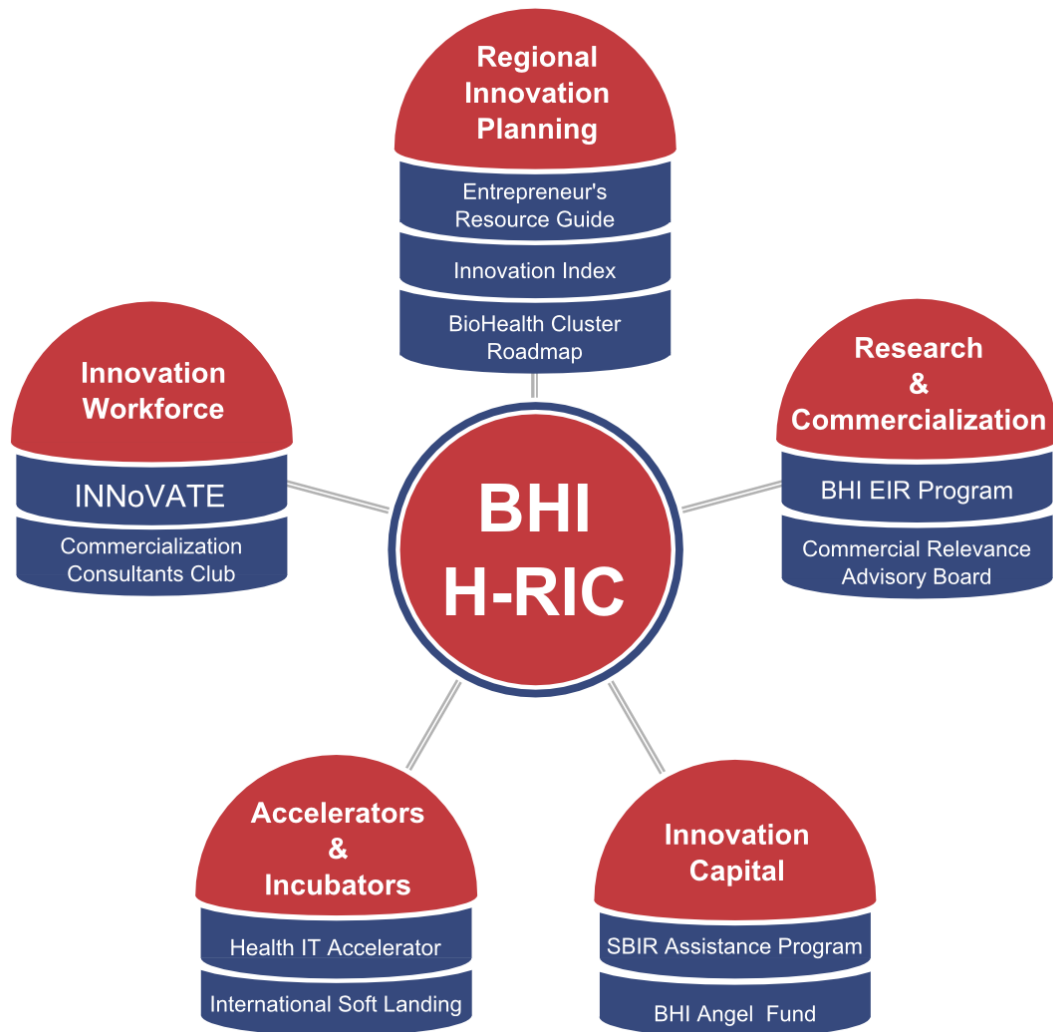
Evaluate commercially relevant federal and university technology for new spin-offs

# 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 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
- Focuses on proof of commercial relevance

# Regional BioHealth Ecosystem Partners



# BHI Partners and Sponsors



JOHNS HOPKINS  
UNIVERSITY



NEA



VENABLE<sup>®</sup>LLP



# BHI Board of Directors



**Daniel J. Abdun-Nabi**  
CEO, Emergent BioSolutions



**David M. Gillece (Secretary)**  
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Managing Director, Venable LLP



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Chancellor, University System of Maryland



**Richard A. Bendis**  
President & CEO, BioHealth Innovation, Inc.



**Douglas Liu**  
Senior Vice President of Global Operations, Qiagen



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Executive Vice President of  
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General Partner, New Enterprise Associates



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Chair, Noble Life Sciences



**Jay Ridder**  
Office Managing Partner, Ernst & Young



**Cynthia L. Collins**  
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Baltimore



**Ronald J. Daniels**  
President, Johns Hopkins University



**Thomas Street**  
Assistant Chief Administrative Officer, Montgomery  
County Government



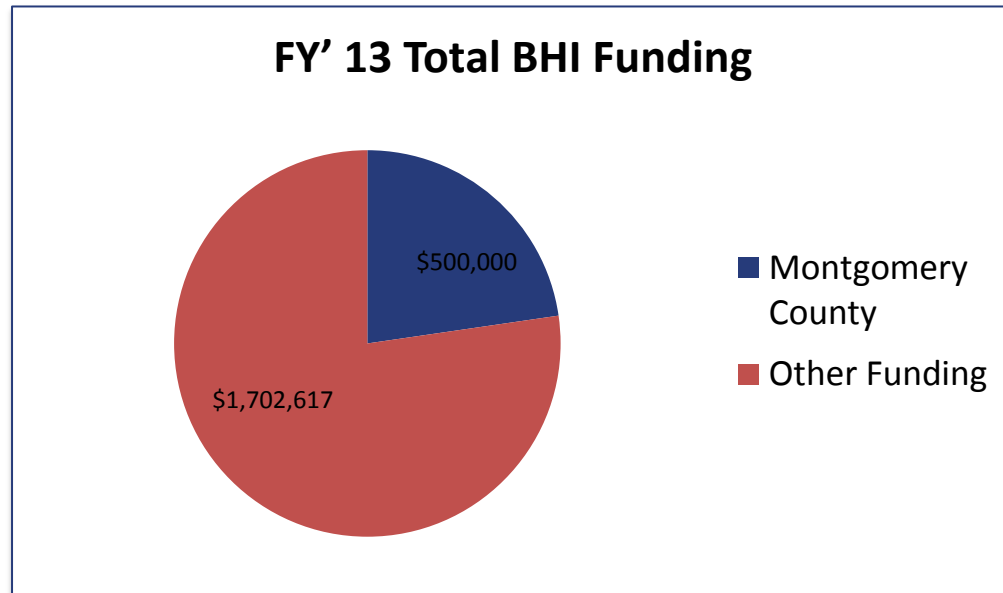
**Jens Eckstein**  
President, SR One (GSK)





# Budget

- Total FY '13 Funding: **\$1,702,617.16 from 20 funders.**  
(This does not include potential federal grant funding or commitments from new charitable donors.)
- Montgomery County is contributing \$500,000 to BHI in 2013, which represents 29.4% of the organization's total FY '13 funding.
- The County's contribution to BHI is leveraged 3.4 times.



# BHI Office – The Wire Hardware Store



BioHealth Innovation's office located in Rockville, Maryland by the Rockville Metro Station.

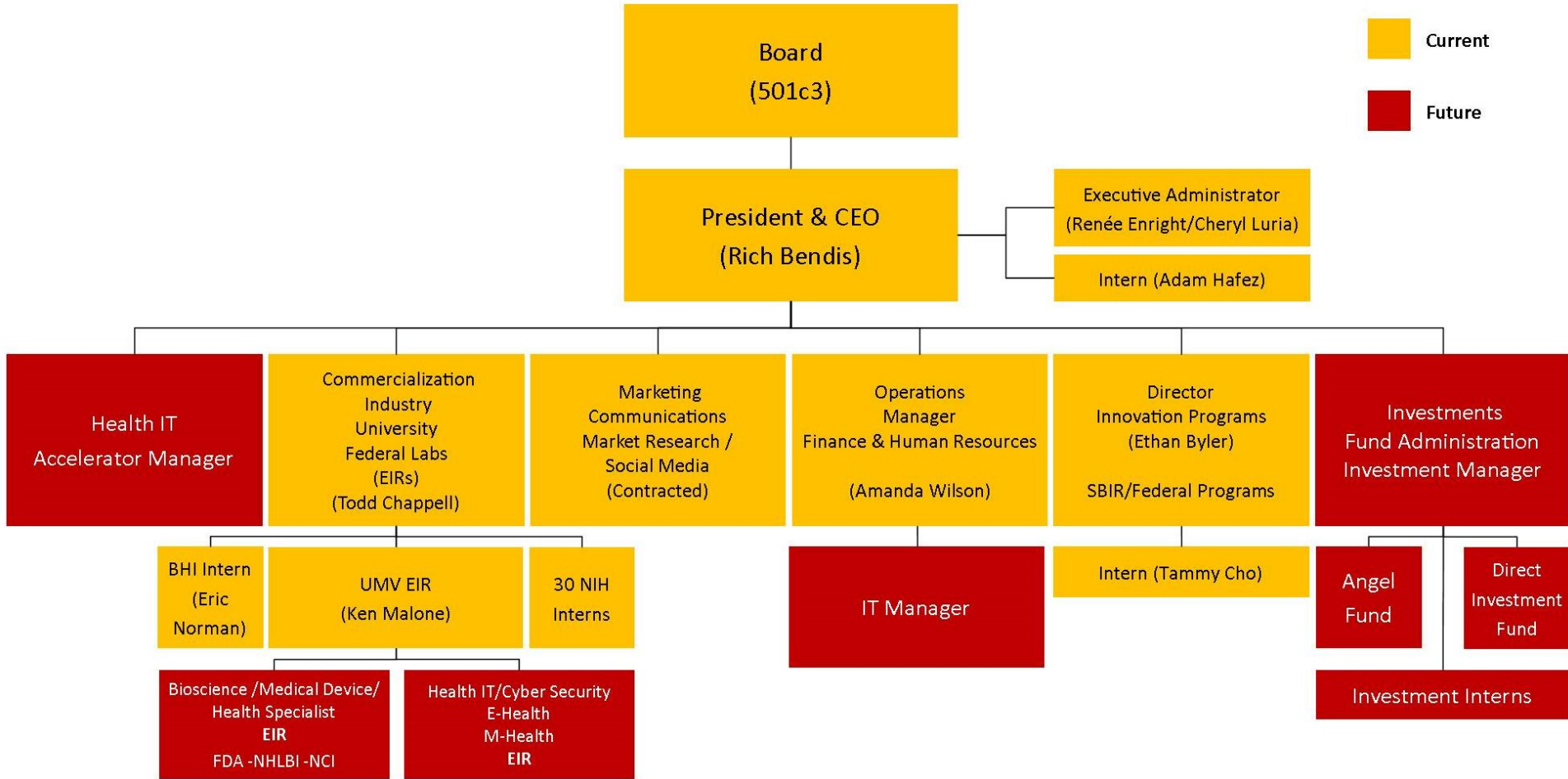
- **Co-located with**

**MBDC**

Montgomery Business Development Corporation

# BHI Organizational Chart

■ Current  
■ Future



# 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**

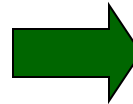
**“It Works!”**

**PROOF OF COMMERCIAL RELEVANCE**

**(Market Pull)**

**“It Works To Solve A Problem”**

**“I’ll Buy It”**



# BHI Commercial Relevance Advisory Board



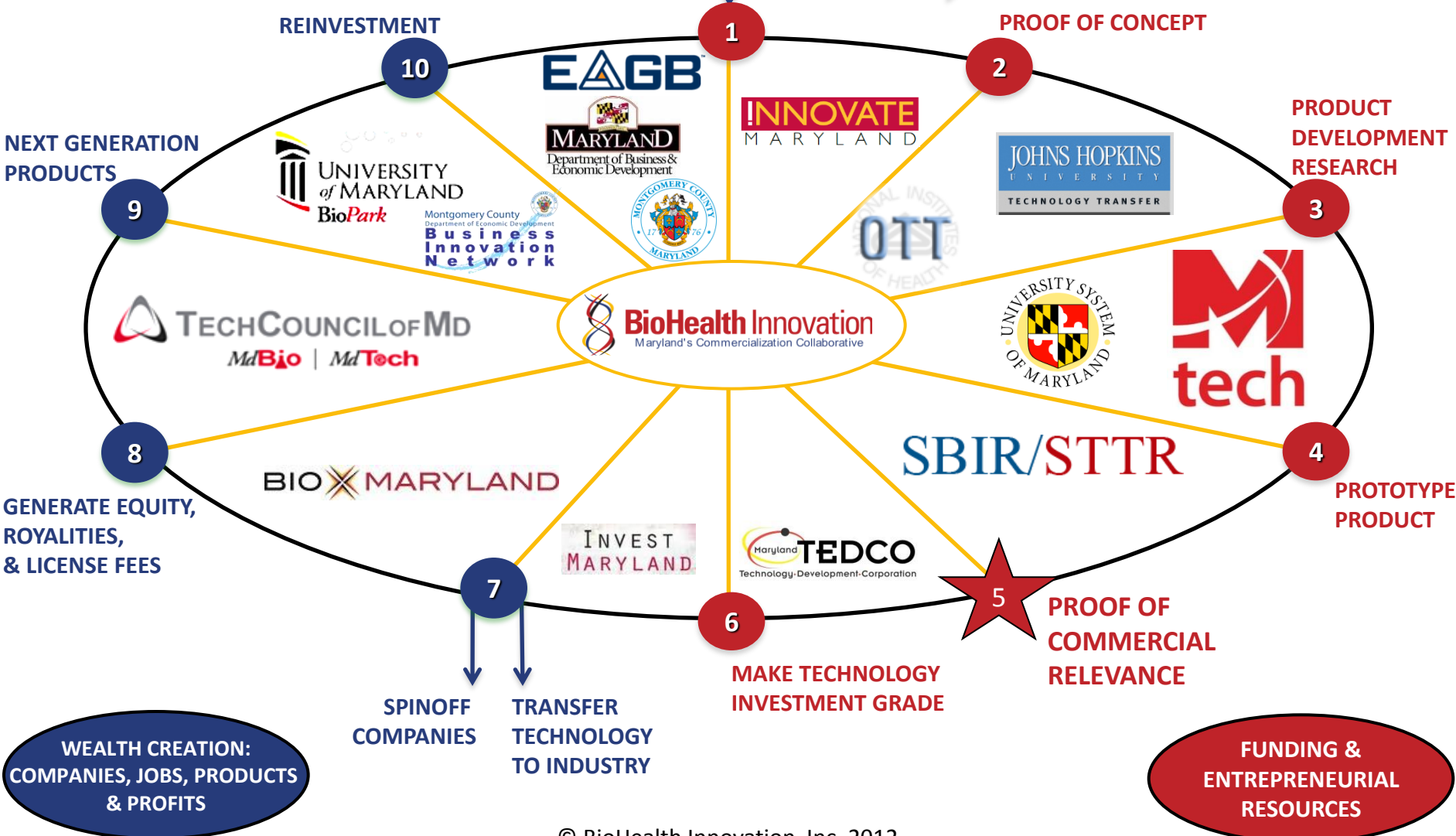
- 30 experienced biohealth professionals assisting BHI in evaluating market-relevant research and product development opportunities
- The CRAB will help determine the commercial applicability of emerging entrepreneurs, companies and their science or technology.

<a href="#">Jesse Baumgold</a> BioEnterprises, LLC	<a href="#">James Lee</a> Adventist Healthcare
<a href="#">Dan Bednarik</a> Intrexon Corporation	<a href="#">Raj Malik</a> Infusid
<a href="#">Judy Britz</a> Maryland Biotechnology Center	<a href="#">Ken Malone</a> Early Charm Ventures, LLC
<a href="#">Steve Canaras</a> Ernst & Young	<a href="#">Arumani Manisundaram</a> Adventist Healthcare
<a href="#">Edward Chan</a> NaviMed Capital	<a href="#">Albine Martin</a> Precision Biologics
<a href="#">Martha Connolly</a> Maryland Industrial Partnerships (MIPS)	<a href="#">Chris Meenan</a> School of Medicine, UMD
<a href="#">Tom Dann</a> Maryland Venture Fund	<a href="#">Arkesh Mehta</a> Chikujee Therapeutics
<a href="#">Brian Darmody</a> UMD	<a href="#">Cheryl Moore</a> Howard Hughes Medical Institute
<a href="#">Doug Doerfler</a> MaxCyte Inc.	<a href="#">Sara Nayeem</a> New Enterprise Associates
<a href="#">Moustapha El-Amine</a> Emergent BioSolutions	<a href="#">Jerry Parrott</a> MHCPDC
<a href="#">Bill Enright</a> Vaxin Inc.	<a href="#">Joana Rosario</a> J. Rosario et Al, LLC
<a href="#">Elizabeth Good</a> Johns Hopkins University	<a href="#">Rob Rosenbaum</a> President & Executive Director, TEDCO
<a href="#">Josh Groman</a> MidCap Financial, LLC	<a href="#">Vin Singh</a> Next Healthcare, Inc.
<a href="#">Jim Hughes</a> University of Maryland, Baltimore	<a href="#">Rick Soni</a> Rexahn Pharmaceuticals
<a href="#">Rachel King</a> GlycoMimetics, Inc.	<a href="#">Gayatri Varma</a> UMD Office of Technology Commercialization

# BHI Commercialization Model

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

PUBLICATIONS  
PhD's  
TENURE  
PATENTS



# Partnership Intermediary Agreements (PIA)



- **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.



# EIR Criteria

- **Senior management in an early stage life sciences startup**
  - **Entrepreneurial life science start up or spin out activity**
- **Management in a organization that specializes in startup companies**
- **Experience in a seed stage venture capital firm**
- **Served in a business development role in a high performing university or business development organization that successfully formed new ventures**
- **Served in a business development role, product development role, or other capacities for biotech products or services that enable substantial knowledge of the earliest stages of development for a new technology startup company**

# 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**

# 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



Todd Chappell

## 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

# Maryland Universities/EIR Interaction

**!INNOVATE**

Maryland's Innovation Initiative



- **\$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)**

# NIH EIR Expansion 2014

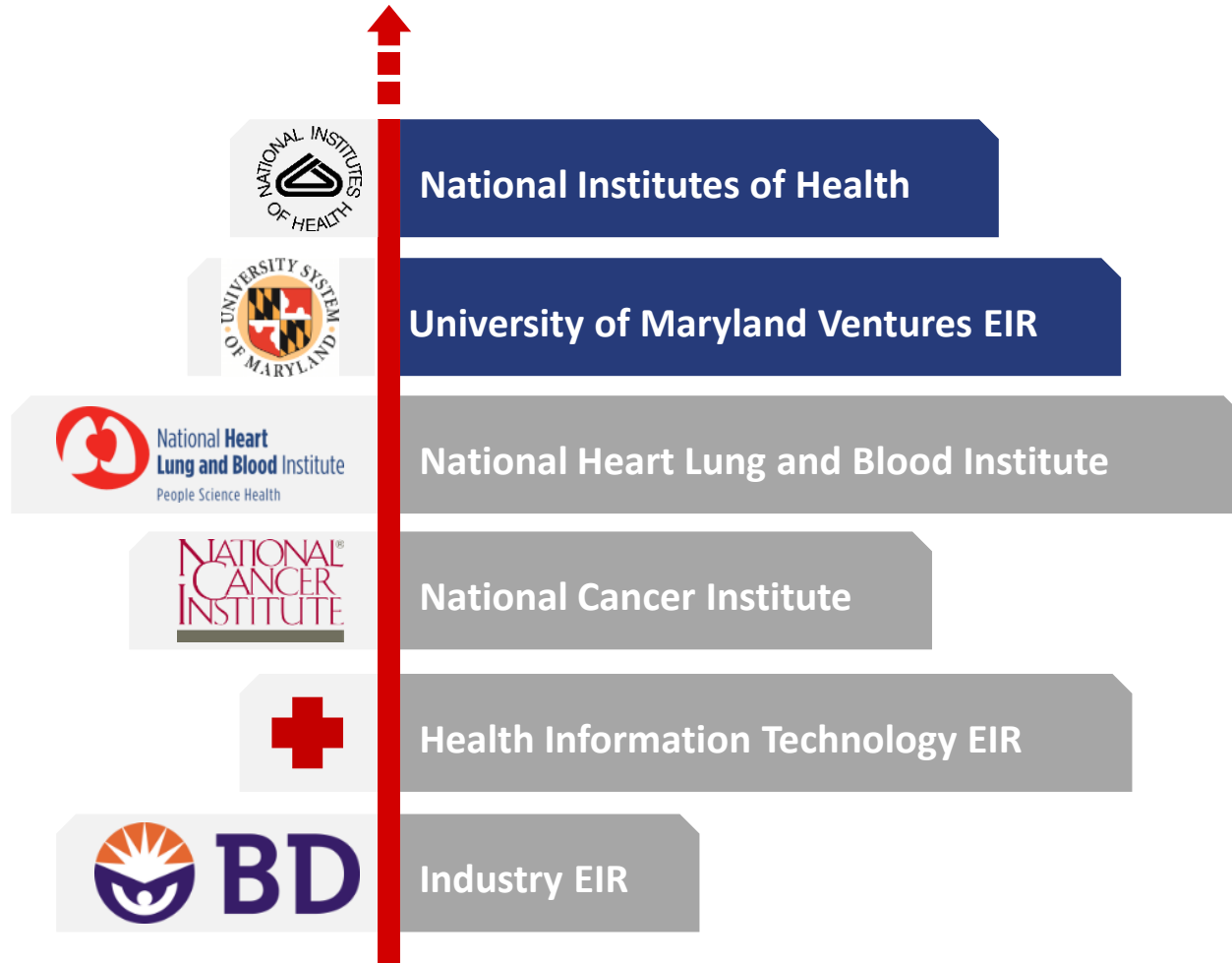


## Biomedical Entrepreneurs in Residence Expansion

<i>REQUEST</i>	<i>BILL</i>	<i>AGENCY/ACCOUNT</i>
Report Language	FY 2014 Labor, Health and Human Services and Education Appropriations	Department of Health and Human Services Office of the Secretary NIH – Office of the Director

- Request for funding to create an EIR network due to the success of NIH OTT EIR (considered “one of the highlights of the year” in their report)
- Suggests placing EIRs at all major components of biomedical research at NIH
- Working with Kevin Kelly, a lobbyist retained by Montgomery County

# EIR Expansion 2013



# NIH PostDocs

**30 NIH Postdocs and Interns helping Todd Chappell identify and evaluate technologies.**

## INNOVATE™

- Provides applied training for post-doctoral fellows, research scientists, and other professionals who want to start life science-based companies.
- Participants learn to:
  - Evaluate the commercial potential of a technology
  - Create a business operational plan
  - Articulate their investment opportunity to investors/business partners

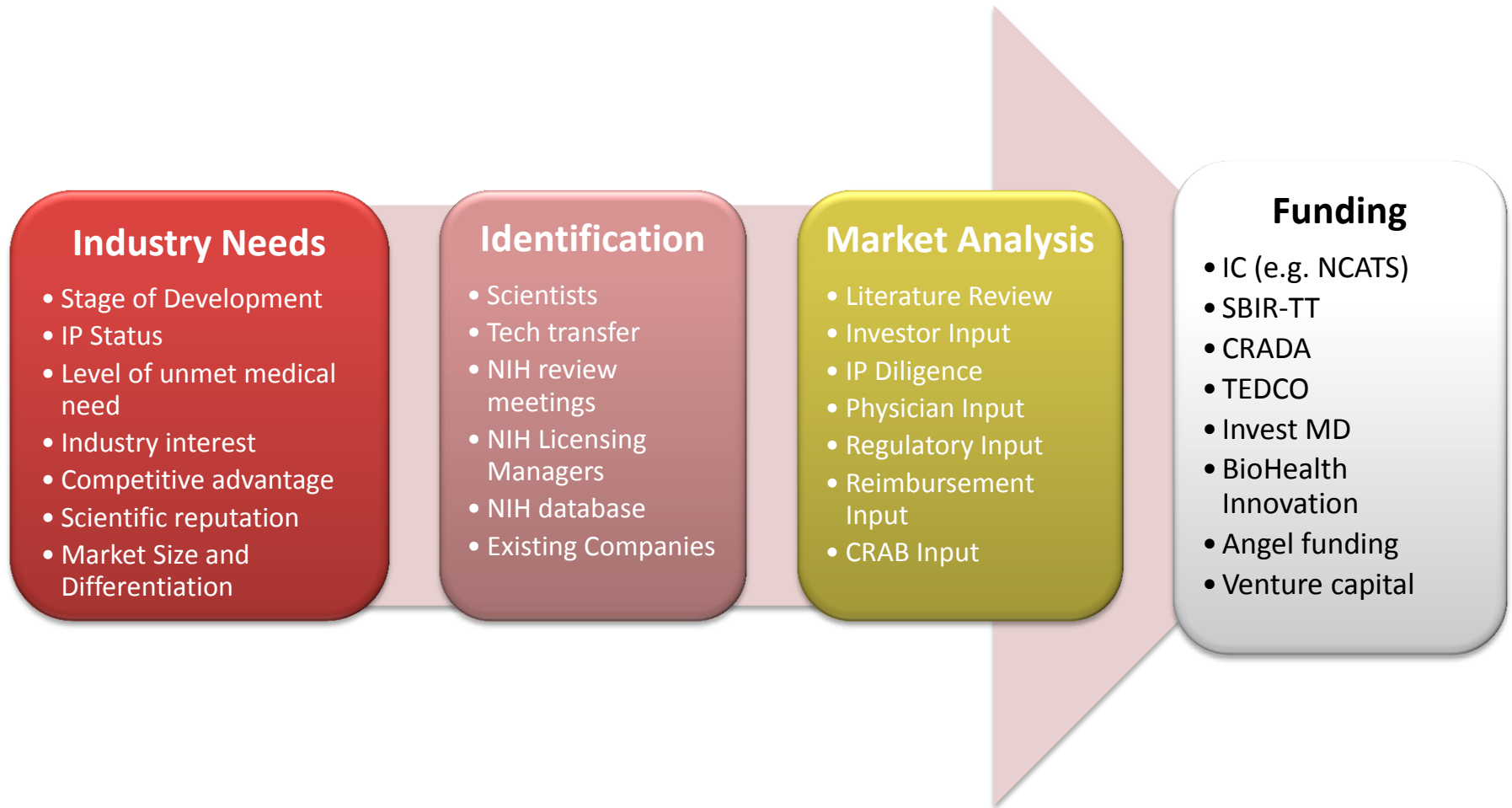
# NIH National Heart, Lung and Blood Institute (NHLBI)



- Potential Entrepreneur-in-Residence
- Center for Accelerating Innovation  
(TBD within 2 months)



# What is the Overall Process for Licensing / Creating Company?



# BHI Client Companies



## Perceptive Navigation, LLC

**Medical Device**

**Develops medical devices related to image-guided, minimally-invasive markets**



## Advanced Personalized Diagnostics, LLC

**Personalized Cancer Care**

**Offers chemosensitivity profiling services to provide personalized treatment plans**



## Mimetas

**Pharmaceutical**

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



## Ahead Research, Inc.

**Personalized Diagnostics**

**Web/Mobile application that matches patients to high quality healthcare providers**

## Capital Sources by Investment Stage

4/12/2013

Pre-Proof of Concept \$25K - \$1.5M (over 5 years)	Translational Research / Proof of Concept \$15K - \$750K (over 3 years)	Proof of Commercial Relevance / Pre-Seed \$3K - \$500K	Seed / Start-Up \$50K - \$1.5M	Early Stage \$200K - \$2M	Later Stage \$2M+
<ul style="list-style-type: none"> <li>NIH R01</li> <li>NIH R03</li> <li>NIH R21</li> <li>Maryland Innovation Initiative (MII) (Managed by TEDCO)</li> </ul>	<ul style="list-style-type: none"> <li>NCATS Cures Acceleration Network (CAN)</li> <li>SBIR/STTR Grant Phase I</li> <li>Maryland Stem Cell Research Fund (MSCRF)</li> <li>TEDCO Technology Validation Program</li> <li>JHU-Coulter Translational Research Partnership</li> </ul>	<ul style="list-style-type: none"> <li>Maryland Industrial Partnerships (MIPS @ UMD)</li> <li>TEDCO Technology Commercialization Fund</li> <li>MII Phase 2 Grant</li> <li>MII Phase 3 Grant</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>Propel Baltimore Fund</li> <li>BioMaryland Center Biotechnology Development Awards - Translational Research</li> <li>SBIR / STTR Phase II</li> <li>★ BHI Central Maryland Angel Fund</li> </ul>	<ul style="list-style-type: none"> <li>Invest Maryland: Maryland Venture Fund</li> <li>BioMaryland Center Biotech - nology Development Awards - Commercialization</li> <li>Maryland Health Care Product Development Corporation</li> <li>Abell Venture Fund</li> <li>MMG Ventures LP</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 (NEA)</li> </ul>

### 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
- Associations
- Federal
- ★ BioHealth Innovation, Inc.
- Economic Development
- Private Capital

### Tax Credits

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

# 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.

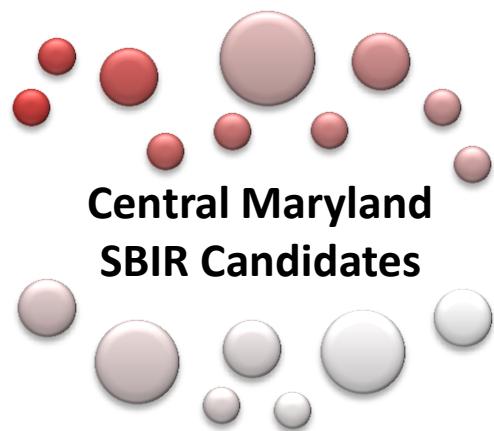
## Metrics:

- 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:

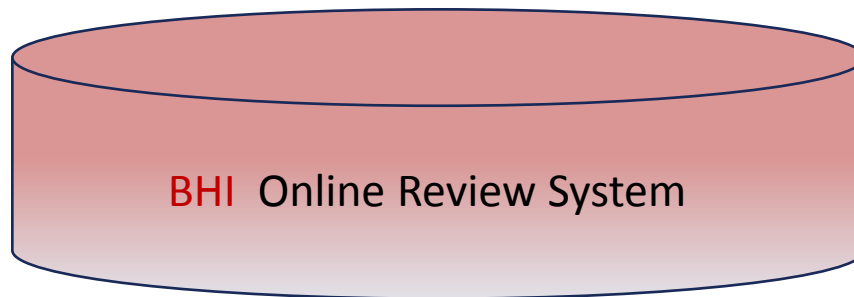
## Commercial Relevance Program (CRP)



Central Maryland  
SBIR Candidates

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

*Companies  
Invited by BHI to  
submit SBIR  
concept*



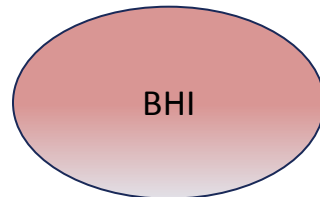
BHI Online Review System



Scientific  
Experts



SBIR  
Consultants



BHI



Full  
Proposal  
Preparation  
Assistance

*Mentoring  
\$\$\$*

*Reviews, Feedback, Troubleshooting,  
Strategy*

# BHI International Soft Landing



- + North America
- + Netherlands
- + Germany
- + China
- + Korea
- + Portugal
- + South America

BHI offers international companies the perfect starting point to create US based subsidiaries by connecting them with BHI's extensive network.

# International Clients



## Mimetas

Pharmaceutical

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



Paul Vulto and Jos Joore



## Pieris AG

Therapeutics

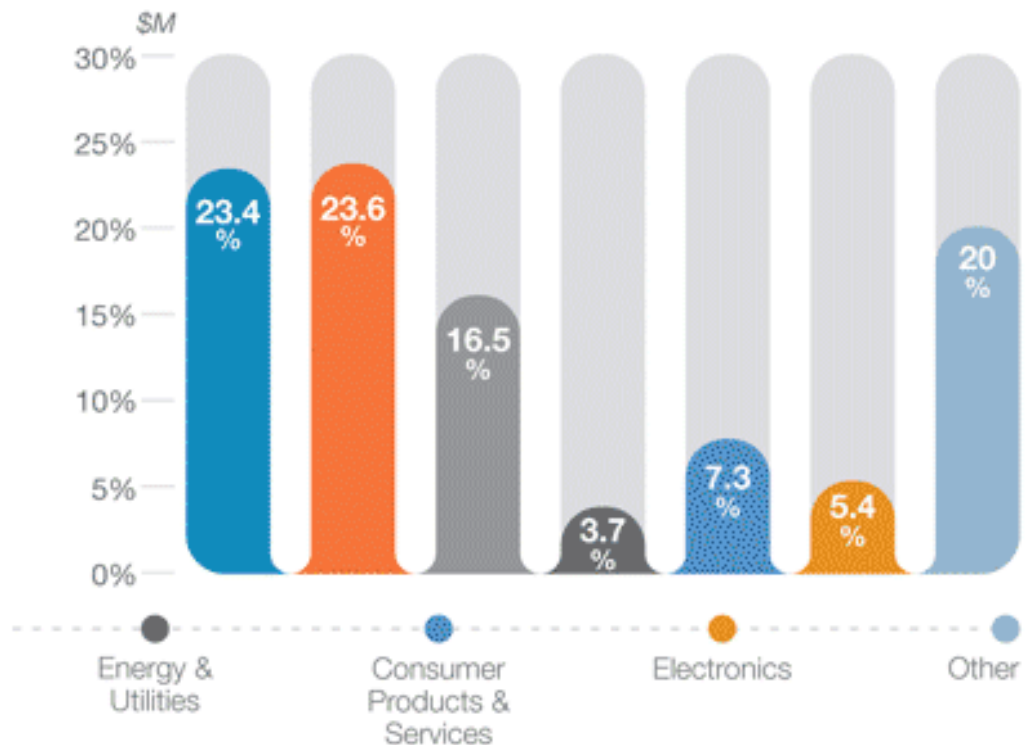
Pieris AG is an independent, clinical stage biotechnology company working to create safer, more efficacious and more convenient protein therapeutics.

# 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



Healthcare companies receive largest share of dollars; Mobile share jumps 6% over Q2 2012



Source: Q3 2012 Halo Report



# Montgomery County Initiatives

## Health IT Roundtable

- March 19<sup>th</sup>, 2013
- Done in conjunction with DED
- Involved 10 Health IT Entrepreneurs identifying what their needs were

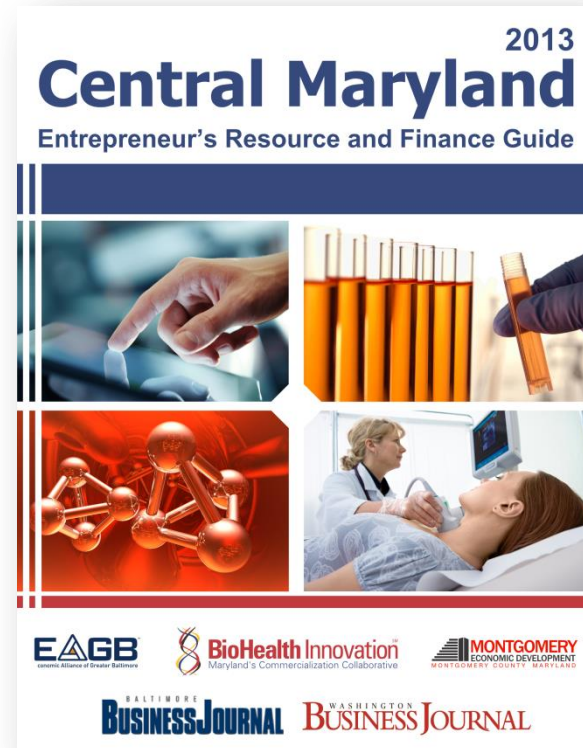
# Health IT Accelerator

- ✚ 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

# 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



# Upcoming Events




## BHI - JHU Investor/Partnership Day

**Date and Time**

Wednesday, May 15th  
8:30am - TBD

**Location**

Hopkins BioTech Park  
Rangos Building  
855 North Wolfe Street  
Floor #1 Idea Room

**Parking Directions**

Rangos Building



Parking for the John G. Rangos Building is available at the corner of Ashland Avenue and N. Washington Street (entrance on N. Chapel Street).

**Description**

BioHealth Innovation, Inc. presents the upcoming Investor/Partnership Day at Johns Hopkins School of Medicine. *To this end, we would like to invite your company as one of the presenters on this day!*

The format will be for each JHU-affiliated company to give a brief presentation to those in attendance and receive follow-up Q&A and feedback with the ultimate goal of finding potential synergies between the JHU companies and the investors and partners.



The event is sponsored by BioHealth Innovation (BHI), a regional innovation intermediary focused on commercializing market-relevant bio-health innovations and increasing access to early-stage funding for start-up companies in Central Maryland. BHI is bringing together members of its Board of Directors and network to hear from some of the emerging companies growing in the Johns Hopkins University ecosystem.

**Potential Investors/Partners**

SR One, MedImmune Ventures, New Enterprise Associates (NEA), Qiagen, United Therapeutics, Emergent BioSolutions, Noble Life Sciences, Venable, Ernst & Young, M&T Bank, GenVec, BD Diagnostics

**Contact Information**

Rich Bendis rbendis@biohealthinnovation.org	Helen Montag hmontag@jhmi.edu
	Elizabeth Good egood@jhmi.edu

## Wine after Work at the Wire

You are cordially invited...

Please join Rich Bendis, Ken Carter, Cindy Collins, and the BHI team for our first CEO wine tasting event. Come mingle with other CEOs in the local biotech community. We will provide light appetizers and ask that you bring a bottle to share. If you know of another business leader who would enjoy this event please let us know and we will extend the invitation.



**When:**  
Tuesday April 30th, 2013


**Time:**  
5:30pm - 7:30pm

**Where:**  
BHI at the Wire  
22 Baltimore Road  
Rockville, MD 20850

**RSVP:**  
Renée Enright  
renright@biohealthinnovation.org

**Directions:**  
The BHI office is conveniently located within walking distance from the **Rockville Metro Station**. When driving, the BHI office is accessible **only** from Rockville Pike/Hungersford Drive (355) by making a turn onto Church St. and driving until it becomes Baltimore Road. Our office is located on the corner. Parking is available in an adjacent lot.



**Celebrating Small Business Success!**

## Montgomery County Small Business Awards

Join the Montgomery County Department of Economic Development to celebrate small businesses. Attend the inaugural Small Business Awards program.

The award luncheon will provide countless opportunities to show your appreciation for the estimated 33,000 small businesses of Montgomery County—businesses that contribute directly to the strength of the area's economy. Eight awards will be presented to eight distinct companies.

- Bioscience Company of the Year
- Information Technology Company of the Year
- Start-up Business of the Year
- Workforce Award
- Montgomery County Innovation Network Company of the Year
- Small Business Award (1-10 Employees)
- Small Business Award (11-50 Employees)
- Small Business Award (51-200 Employees)

Start thinking about your nominations today!

**Friday, May 24 • 12:00 - 2:00 pm • Marriott Bethesda North Conference Center, 5701 Marinelli Road, North Bethesda, Maryland 20852**

Montgomery County  
Department of Economic Development

### Small Business Awards

Celebrating Small Business Success

**Related Resources**

- [Event and Registration Information](#)
- [2013 Small Business Awards Nomination Form](#)
- [Sponsorship Information](#)

# 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>

# BHI: The Triple Bottom Line

**Grows** high-paying jobs and businesses

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

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

# BHI Staff

## **Richard Bendis**

President & CEO

(215) 593-3333

[rbendis@bendisig.com](mailto:rbendis@bendisig.com)

## **Todd Chappell**

Entrepreneur-In-Residence

(978) 933-1622

[tchappell@biohealthinnovation.org](mailto:tchappell@biohealthinnovation.org)

## **Ethan Byler**

Director, Innovation Programs

(301) 637-7952

[ebyler@biohealthinnovation.org](mailto:ebyler@biohealthinnovation.org)

## **Renée Enright**

Executive Administrator

(301) 637-5372

[renright@biohealthinnovation.org](mailto:renright@biohealthinnovation.org)

## **Amanda Wilson**

Operations Manager

(301) 637-0699

[awilson@biohealthinnovation.org](mailto:awilson@biohealthinnovation.org)

## **Ken Malone**

UMV Entrepreneur-in-Residence

(601) 466-7050

[kmalone@biohealthinnovation.org](mailto:kmalone@biohealthinnovation.org)

## **Adam Hafez**

IT Intern

(301) 637-7270

[ahafez@biohealthinnovation.org](mailto:ahafez@biohealthinnovation.org)

## **BioHealth Innovation, Inc.**

22 Baltimore Road | Rockville, MD 20850

[bhi@biohealthinnovation.org](mailto:bhi@biohealthinnovation.org)

