

ALEXANDRIA.

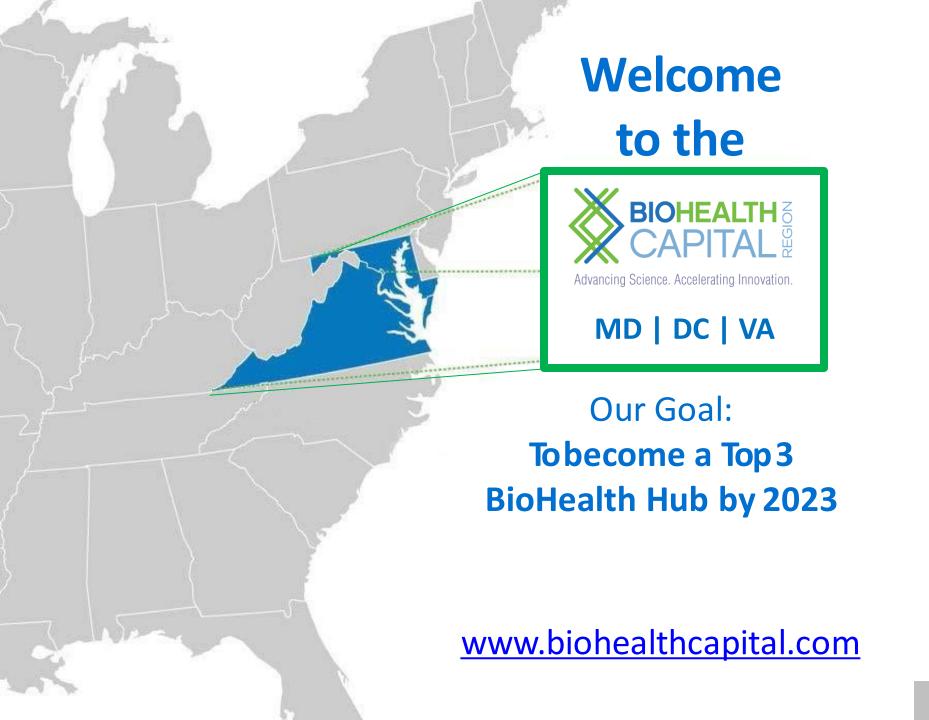
Alexandria Real Estate Equities, Inc. Board Meeting

Introduction to Biohealth Capital Region (BHCR) & BioHealth Innovation (BHI)

By Rich Bendis, President and CEO, BHI
July 27th, 2018
Four Seasons Hotel, Washington D.C.









Top 10 U.S. Biopharma Clusters

Ranking Based on Five Criteria:

- 1. NIH Funding
- 2. Venture Capital Funding
- 3. Patents
- 4. Lab Space
- 5. Jobs

2017

- 1. Boston / Cambridge, MA
- 2. San Francisco Bay Area
- 3. New York-New Jersey
- 4. San Diego
- 5. Maryland / Virginia / DC Metro
- 6. Greater Philadelphia
- 7. Seattle
- 8. Raleigh-Durham, NC (inc. Research Triangle Park, NC)
- 9. Los Angeles / Orange County
- 10. Chicagoland

BHCR News Stories



MedImmune spins out Viela Bio....

"Viela Bio Spins Out of MedImmune; Launches with Up to \$250 Million Series A Financing from Investor Consortium Led by Boyu Capital, 6 Dimensions Capital, and Hillhouse Capital"



Deerfield \$40 million investment in Dracen....

"Health care-focused Deerfield Management leads Baltimore biotech's \$40M round"

THE BALTIMORE SUN

Emergent major contract or opens innovation Center in Baltimore....

"Emergent BioSolutions opens expanded East Baltimore vaccine plant"



Paragon Biosciences expansion....

"Paragon Bioservices Announces New Commercial Manufacturing Facility Expansion"



Benevir....

Montgomery County, Maryland-base BeneVir Biopharm, Inc. to be acquired by Janssen Biotech, Inc. for up to \$1.04B"



Supernus expansion

"Supernus To Expand, Will Move From Rockville To Gaithersburg"



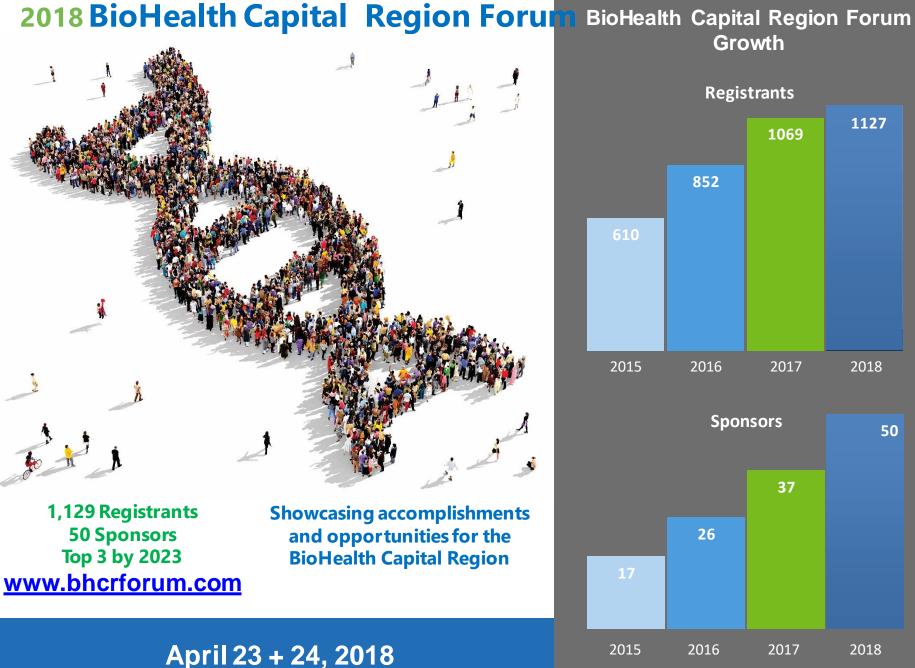
Precision medicine raises \$275 million....

"Precision Medicine Group Raises \$275M to Support Biomarker-Guided Drug Development"



Sucampo sale

"Sucampo Pharmaceuticals closes on its \$1.2B sale to a U.K. company"



One MedImmune Way, Gaithersburg, MD 20878

BHCR Support Organizations





Richard A. Bendis President / CEO

BHI sources and evaluates marketrelevant bioheath intellectual properties, connects the IP with funding, and assists businesses in marketing and growth





Tami Howie, CEO

"We are a collaborative community that is actively engaged in building strong technology and life science industries by supporting the efforts of our individual members."





George Davis, CEO

"TEDCO provides framework of knowledge, funding, and networking to support an innovation eco-system that nurtures researchers, entrepreneurs, start-ups, and early stage companies engaged in bringing innovation ideas to market."





Jeffrey M. Gallagher CEO

"We fuel the network of leaders that drive bioscience to eradicate disease, save lives, and feed the world.....one innovation at a time."

STATE OF VENTURE-BACKED STARTUPS IN HEALTHCARE

BHCR has Several Good Exits







47 M&As since 2012

\$10.2 billion Total M&A value







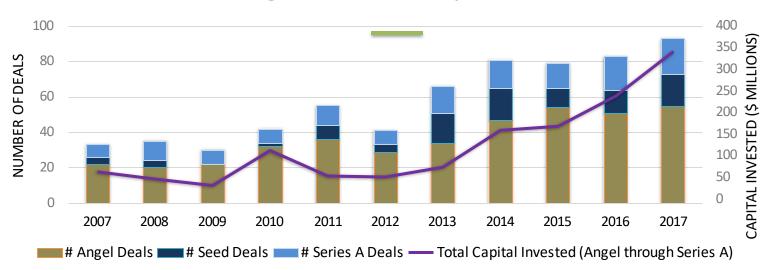
18 IPOs since 2012

\$28.3 billion Total IPO value

STATE OF VENTURE-BACKED STARTUPS IN HEALTHCARE

Venture Investment in Healthcare in the BHCR

Number of Angel - Series A Deals & Capital Invested in BHCR



Strong Angel activity

Active ecosystem of independent angels, angel groups, and angel syndicates that invest in an average of 45 deals per year



Consistent Series A activity

Numerous regional and national funders are active in the BHCR for Series A and late-stage venture capital deals



Growing Gap at Seed Stage Deals

With an average 15 seed deals per year, strong startups don't receive funding to conduct necessary experiments for a Series A investment

Recent Venture Capital Funding in BHCR



Raised \$26M to date



Johns Hopkins spin-out Raised \$49M to date



Technology from Yale Raised \$67M to date



Johns Hopkins spin-out Raised \$6.6M to date



Raised \$154M to date



Johns Hopkins spin-out Raised \$14M to date



Johns Hopkins spin-out Raised \$99.3M to date



Pfizer spin-out Raised \$103M to date



Johns Hopkins spin-out Raised \$40M to date

Neuraly Inc.

Raised \$36M to date



Raised \$275M to date



Raised \$100M to date



Raised \$119M to date



Johns Hopkins spin-out Raised \$28.2M to date



Raised \$10M to date



MedImmune/AstraZeneca spin-out Raised \$250M to date



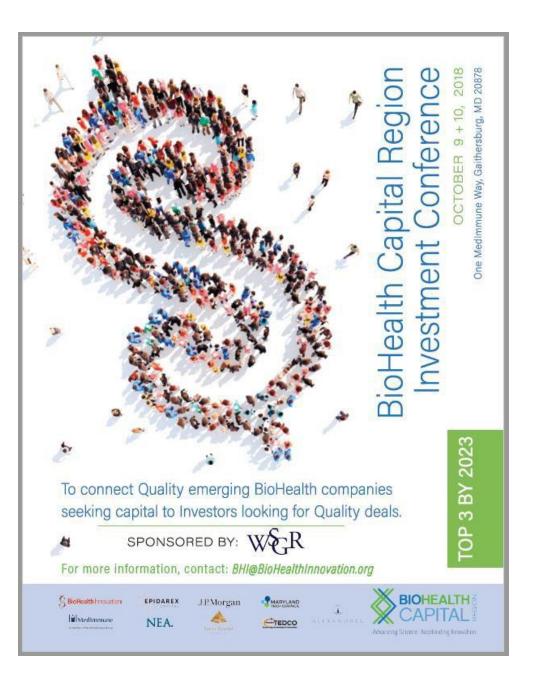
Raised \$32.5M to date

Biohealth Success in Montgomery County, Maryland



BHI Innovation Capital Map





Investment Conference October 9 + 10, 2018



BioHealth Capital Regions Serial Entrepreneurs



Mark P. Clein

- Precision for Medicine, Inc.
- United BioSource Corporation
- Infoscriber Corporation
- U.S. BioServices, Inc.



Rachel King

- GlycoMimetics
- NEA
- · Genetic Therapy, Inc.



Michael Richman

- NextCure
- Amplimmune



James S. Gammie, MD

- Correx, Inc.
- Harpoon Medical, Inc.



Ethan D. Leder

- Precision for Medicine, Inc.
- United BioSource Corporation
- · U.S. BioServices, Inc.



Martine A. Rothblatt Ph.D., J.D.

- United Therapeutics Corporation
- GeoStar
- SiriusXM Satellite Radio



Murat V. Kalayoglu

- Cartesian Therapeutics
- Topokine Therapeutics
- HealthHonors Corporation



Wendy Perrow

- AsclepiX Therapeutics
- Alba Therapeutics Corporation



Steve Turner

- · Protea Biosciences Group, Inc.
- · Clinomics BioSciences Inc.
- · Quorum Sciences

University Progress

- USM and JHU have had over 52 life science startups in last 18 months, many receiving venture capital, 4.0 billion in research expenditures, 104 licenses executed, \$60 million in license income, 1208 patent applications filed 258 Patent's issued
- USM has created a new \$25 million momentum venture fund
- New Bluefield Innovations Fund, operated by Deerfield Management to capitalize \$75 million fund to support JHU startups
- UVA entered into partnership with Inova to create a Northern Virginia research and education campus









Regional Initiatives

- Many independent regional initiatives highlighted in this Forum and for first time communication with each other
- Maryland Life Science Advisory Board implementing recommendations for Governor Hogan
- Greater Washington Partnership launched as well as Global Cities Export initiative
- MTC Merger Completed
- MCEDC and WorkSource Montgomery two new private public partnerships operational















Unrivaled Research Assets | Unfulfilled Commercial Promise 800+ BioHealth Companies

































State of Maryland: Federal & University Resources

- Population: 5.9 million people
- 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

Challenges to Innovation Economy

BHI Value Proposition

Lack of connection of innovation resources

Connect regional innovation assets

Lack of an entrepreneurial culture and C-level executives

Develop an entrepreneurial talent and support pipeline

Lack of early-stage funding for commercializing technologies

Attract funding for technology commercialization

Lack of spin-offs from federal and university R&D

Evaluate commercially relevant federal and university technology

BioHealth Innovation is a Regional Innovation Intermediary

A public-private partnership, serving as an innovation intermediary in the BioHealth Capital Region with a mission to:

- Advance local technologies, assets and resources
- Accelerate innovation
- Globally connect sectors, industries, communities, and markets



- Regionally-oriented
- Private-public partnership, 501(c)(3)
 nonprofit
- BioHealth Innovation Management, a for-profit subsidiary
- Market-driven, private sector-led and funded
- Neither a government initiative, nor a membership organization

Major Regional BioHealth Companies























































Public BioHealth Companies Headquartered in the Region

































Regional BioHealth Ecosystem Partners

ACADEMIA

- RESEARCH/T2
- LIFELONG LEARNING
- **ECONOMIC DEVELOPMENT**

INDUSTRY

- PROFIT
- PROCESS
- PRODUCT

INSEPARABLE MISSIONS

GOVERNMENT

- Sustainability
- INFRASTRUCTURE SUPPORT
 - ECONOMIC POLICY

FOUNDATIONS/NGOS

- Economic Growth
- COMMUNITY INVESTMENT
- REGIONAL COLLABORATION

BHI Partners and Sponsors

Private Sector



































































Academia





















<u>Government</u>













Non-Government





















BHI Board of Directors



Daniel Abdun-Nabi

CEO

Emergent BioSolutions, Inc.



William Hearl, Ph.D.

IMMUNOMIC Founder and CEO, Immunomic Therapeutics, Inc.



David Mott

General Partner New Enterprise Associates



Richard A. Bendis

President & CEO BioHealth Innovation, Inc.



Ashish K. Kulkarni, Ph.D

EVP & CTO Avantor



Kurt Newman, M.D.

President & CEO

Children's National Medical Center



Jarrod Borkat

Vice Chairman Partnerships and Collaborations Medlmmune



Dave Lemus (Treasurer)

COO/CFO

Prosteros Biostructures GmBH



Lily Qi

Assistant Chief Administrative Officer Montgomery County Government



Robert Caret, Ph.D.

Chancellor University System of Maryland



Anne S. Lindblad

President & CEO The Emmes Corporation



John A. Sackett

President

Shady Grove Adventist Hospital



Kenneth Carter, Ph.D.

Chairman Noble Life Sciences



Douglas Liu (Chair)

Senior VP of Global Operations Qiagen



Robert Silverman

Head Externalized Drug Discovery Partnering, Roche



Christopher Callaghan

Group Vice President, Healthcare Banking M&T Bank



Deloitte.

Joel Marcus

Executive Chairman & Founder Alexandria Real Estate Equities, Inc.



Ronald J. Daniels

President

Johns Hopkins University



Beth Meagher

Principal

Deloitte Consulting LLP



Jens Eckstein, Ph.D.

President

SR One (GSK)



Charles Morton (Secretary)

Partner

Venable LLP

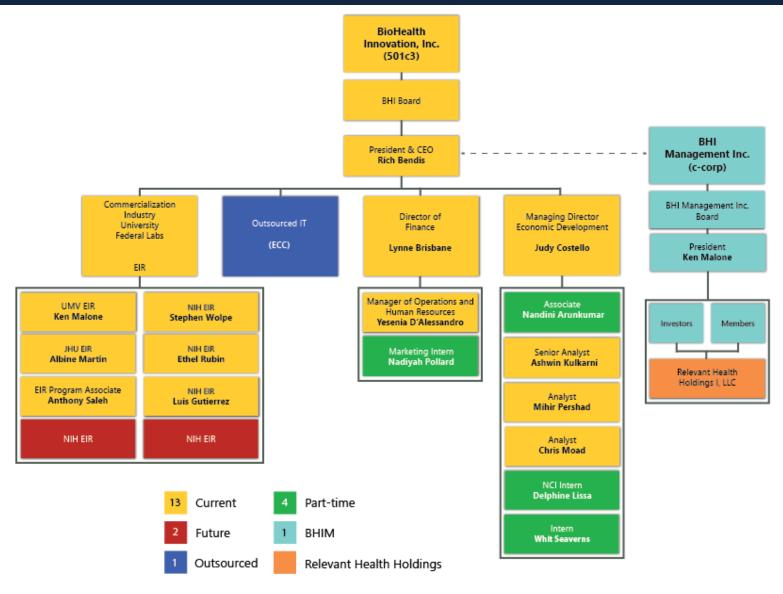


Mike Gill (Ex-Officio)

Secretary of Business & Economic Development, Department of Commerce

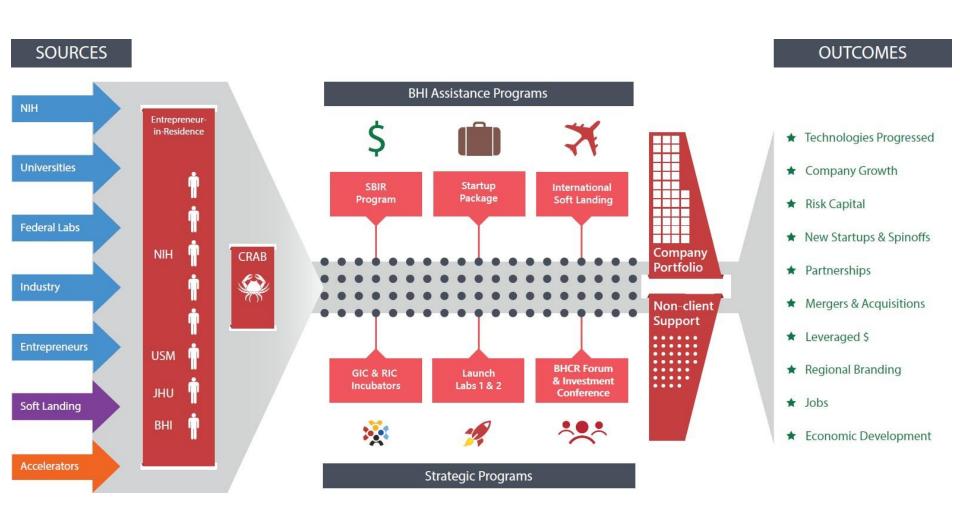
BHI Organizational Chart

July 2018



BHI Business Model

Research and technologies enter into the pipeline from sources shown on the left and are evaluated by the EIR team. Commercially relevant startups are connected to assistance programs on a case-by-case basis. Once a startup becomes a portfolio company, they gain access to partners and resources.



BHI Technology Focus

- Therapeutics
- Diagnostics
- Medical Devices
- Healthcare Services
- E-Health
- Mobile Health
- Electronic Medical Records
- Health Informatics
- BioHealth Cybersecurity
- Personalized Health
- Convergence
- Research Tools & Reagents



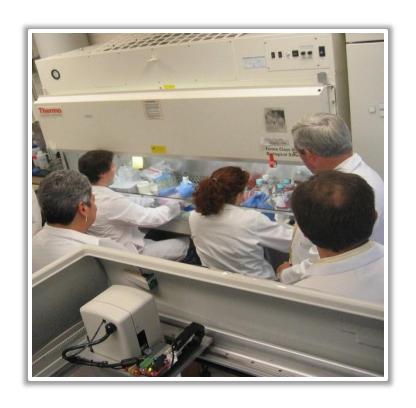




Innovation Paradigm Shift

PROOF OF CONCEPT
(Technological Feasibility)
Laboratory Push
"It Works!"

PROOF OF COMMERICAL RELEVANCE
(Market Pull)
"It Works To Solve A Problem"
"I'll Buy It"

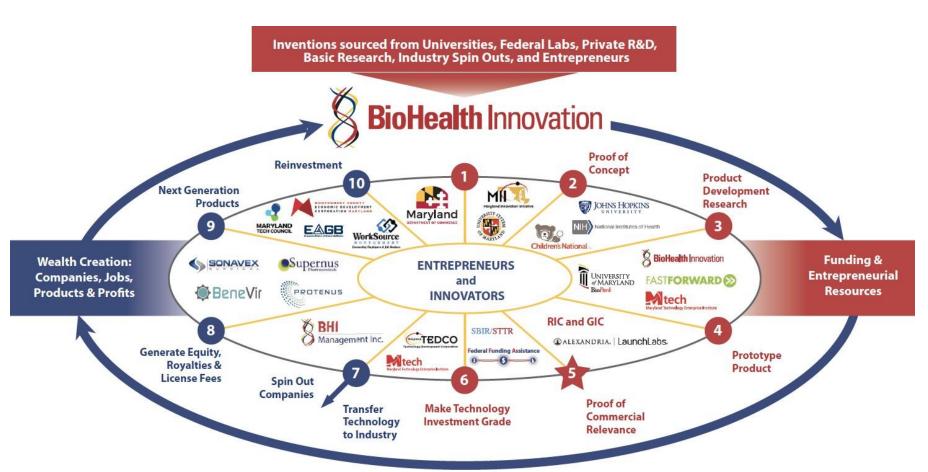






BHI Commercialization Model

This commercialization model shows the steps and partners that are involved in the BHI commercialization and support process. The process below leads to the creation of new companies, spin-outs and strategic partnerships. BHI connects companies with a network of public, private and academic entities.



NIH Partnership Agreements



NIH Consulting Entrepreneur Services Contract for 6 NIH Entrepreneurs-in-Residence





PIA between BHI and NIH's Office of Technology Transfer (OTT) that supports the 27 NIH institutes' 6,000 scientists and \$3 billion intramural research in Montgomery County, MD and the Food and Drug Administration to promote and foster cooperative research and accelerate technology commercialization among NIH/FDA, businesses, and universities.

BHI Team



Rich Bendis Founder & CEO BioHealth Innovation

40+ years experience: Innovation America & Innovation Philadelphia, & co-founded 13+ university spin-outs Marion Laboratories. Continental Healthcare Systems, Kimberley Services, Texas Instruments. Polaroid, Quaker Oats



Luis Gutierrez, Ph.D. Entrepreneur-in-Residence NIH

20+ years industry experience:





Ken Malone, Ph.D.

Entrepreneur-in-Residence University System of Maryland

10+ years industry experience





Ethel Rubin, Ph.D. Entrepreneur-in-Residence NIH

10+ years industry experience:





Albine Martin, Ph.D.

Entrepreneur-in-Residence Johns Hopkins University

30+ years industry experience:





Anthony Saleh, Ph.D. Associate

BioHealth Innovation

the organ-on-a-chip company



Stephen Wolpe, Ph.D.

Entrepreneur-in-Residence NIH

25+ years industry experience & as an Independent biotechnology consultant

*** Wellstat Therapeutics



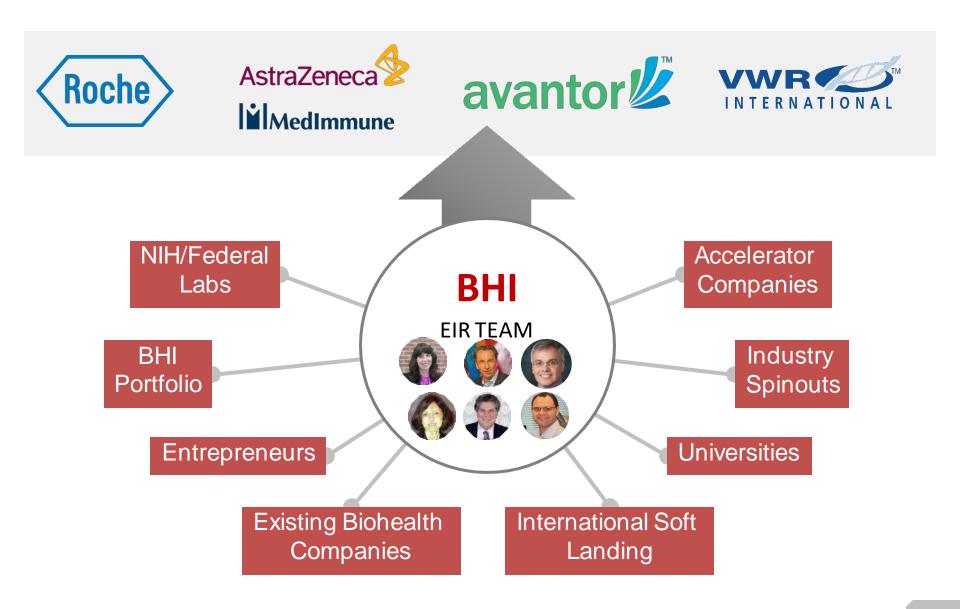
Judy Costello

Executive Director BioHealth Innovation

25+ years in economic development in Northern VA, Washington DC, and MD



BHI Scouting



BHI Federal Funding Assistance

- \$2.5 billion annual United States Government program coordinated by the Small Business Administration provides grants or contracts to small businesses to spur technological innovation
- Grants awarded in 3 phases between \$100,000 and \$1.5 million



\$23.8M Funding awarded | 34 wins out of 63 SBIR and STTR submissions | 53% win rate

BHI Startup Package

Incubation





Intellectual Property



Reimbursment



Consulting



Corporate Legal



Scientific Data
Management Services



Clinical Services



Preclinical Services



Grant Writing





Accounting



Banking



ALEXANDRIA. LaunchLabs.

LaunchLab I





708 Quince Orchard Road | Gaithersburg, MD 20876









FEATURES

- Five laboratory/office modules: each approximately 1,200 Rentable Square Feet (RSF)
- Laboratory space includes casework, sink, fume hood. equipment storage, emergency generator capacity, etc.
- Office space includes one furnished office, two w orkstations and common lobby, pantry, conference rooms, IT closet, autoclave, and glass wash so business can immediately commence

LEASE TERMS

- 12 month lease terms with potential for a six (6) month extension
- Base Rent is \$3,925 per month to account for rent and operating expenses inclusive of utilities
- Security deposit is equivalent to one (1) month of Base Rent

Resident Companies include 3i Diagnostics & Antidote Therapeutics.

LaunchLab II



5 Research Court | Rockville, MD 20850





FEATURES

- Move-in ready laboratory/office modules; each approximately 1,192 Rentable Square Feet (RSF) with communal services and amenities designed to facilitate collaboration.
- Fully fit out laboratory space including casework, sink, fume hood, equipment storage, and emergency generator capacity.
- Office space includes one furnished office and two workstations.
- Communal space includes reception/lobby area, pantry, conference rooms, IT closet, autoclave, glass wash, ice maker, and freezer storage.
- Services to guide and facilitate the growth of early-stage
- FitLab. Alexandria's state-of-the-art fitness center, is a vailable to all LaunchLab occupants.

















155 Gibbs Street, Rockville, MD 20850

Montgomery County Innovation Network Facility Managed by **BioHealth Innovation**, Inc. (BHI)

37 Private Offices and Office Suites | | 4,000 square feet of Co-working Space

Features:

- Class A office space located in the heart of the bustling Rockville Town Center—with great access to restaurants, nightlife, community events and fitness facilities.
- Flexible one-year lease agreements with 60-day notice terms.
- Shared conference rooms with state-of-the-art audio visual systems, pre-wired offices to accommodate
- both telephone and broadband internet service, and wireless internet access.
- Access to market research databases provided through partnership with TEDCO to bona fide entrepreneurs and faculty innovators.

25 Companies* | 86 Jobs

*includes Montgomery County GreenBank

Technology



















Health Tech













Life Sciences





























50 Private Offices and Office Suites | 12 Wet labs | 32,000 square feet

Features:

- Turnkey office space with fully fitted wet labs, including RO water, emergency power, and fume hoods. located in the heart of the new Pinkney Innovation Complex at Montgomery College (PIC-MC).
- Flexible one-year lease agreements with 60-day notice terms.
- Shared conference rooms with state-of-the-art audio visual systems, pre-wired offices to accommodate both telephone and broadband internet service, and wireless internet access.
- On-site access to market research databases provided through partnership with TEDCO to bona fide entrepreneurs and faculty innovators.
- Access to interns, faculty and state-of-art equipment at BioScience Education enter, Montgomery College

25 Companies | 126 Jobs

Therapeutics

























Diagnostics & Research Tools







Adera Labs





Health Tech







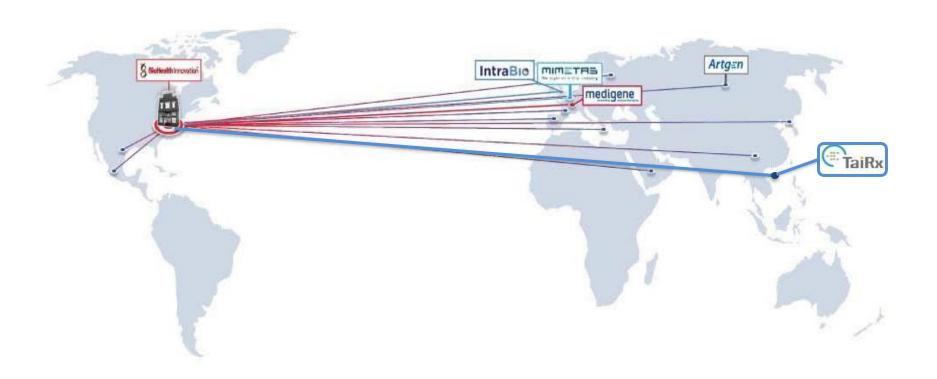
Technology







BHI International Soft Landing



China North America
Estonia South America
Germany Spain
Greece Israel
India Russia
Korea Latvia
Netherlands Japan
Taiwan

BHI offers international companies the perfect starting point to create US- based subsidiaries. Soft landing companies are given access to BHI's extensive business resources including Business Development & Sales, Entrepreneurs-in- Residence (EIR), Financial, Grant Writing/SBIR Federal Funding Assistance, Human Resources, Incubation/Site Location, Legal - Corporate & Intellectual Property, Marketing & Promotion, Market Research, Network & Connections, Regulatory & Preclinical/Clinical, and Reimbursement.

Websites, News and More



BHI Website

The BHI website has news, an events calendar, research publications, regional organization feature stories and resources for the biohealth industry.

www.biohealthinnovation.org



BHI News

BHI's weekly e-newsletter highlights the Central Maryland region's news articles, national biohealth trends and feature stories.

www.biohealthinnovation.org/news



BioHealth Capital Region

The BHCR website highlights the region's biohealth news, stories, trends and events.

 $\underline{www.biohealthcapital.com}$



BHCR News

BHCR News is a monthly publication that highlights industry news throughout the region.





Rich Bendis, hosts BioTalk — conversations with some of the most accomplished and exciting business, academic, and government leaders in the biohealth industry.

A BIG THANK YOU TO



ALEXANDRIA®

BHI Contact

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