



FLC NATIONAL MEETING

*Accelerating Innovation for
Economic Impact*

Rockville, MD • April 21 - 23, 2014

Working with the FLC

BioHealth Innovation, Inc.

Rich Bendis

President & CEO

BioHealth Innovation

4/23/2014

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



JOHNS HOPKINS
UNIVERSITY



BioHealth Regional Innovation Cluster Assets



JOHNS HOPKINS
UNIVERSITY



NEA
New Enterprise Associates®

MARYLAND OF OPPORTUNITY. SM

EAGB

FEDERAL LABORATORY CONSORTIUM
FLC
FOR TECHNOLOGY TRANSFER

Maryland
TEDCO
Technology-Development-Corporation

APL
The Johns Hopkins University
APPLIED PHYSICS LABORATORY

BIO X MARYLAND

MaBio

NIH
National Institutes
of Health



NATIONAL
CANCER
INSTITUTE

Montgomery County, Maryland
Montgomery College

NCATS NIST

Center for Medicare & Medicaid
INNOVATION

WALTER REED
ARMY MEDICAL CENTER



Rockville
Economic Development, Inc.
Known for the Companies We Keep

USDA

HHMI
HOWARD HUGHES
MEDICAL INSTITUTE



National Biodefense Analysis
and Countermeasures Center

TIGR
THE INSTITUTE FOR GENOMIC RESEARCH

FDA

USAMRIID
United States Army
Medical Research Institute
of Infectious Diseases
Biodefense solutions to protect our nation

J. Craig Venter
INSTITUTE



Bio
BIOTECHNOLOGY
INDUSTRY ORGANIZATION

BioHealth Innovation is an Innovation Intermediary

BioHealth Innovation is a Central Maryland innovation intermediary that connects market relevant research assets to appropriate funding, management and global markets to facilitate the development of commercially viable biohealth products and companies.

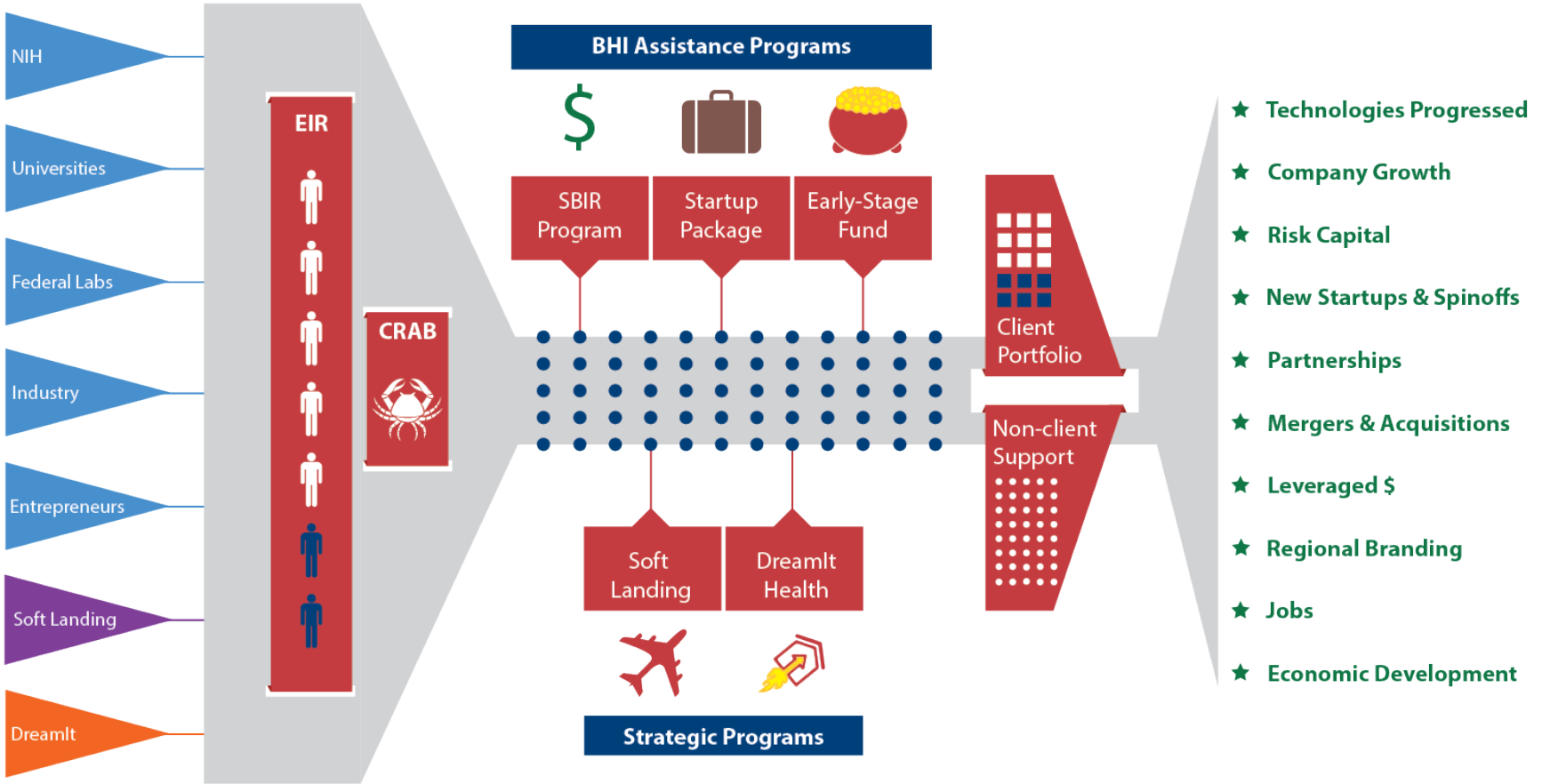


- Regionally-oriented
- Innovation accelerator
- Private-public partnership, 501(c)(3) nonprofit
- Market-driven, private sector-led and funded
- Neither a government initiative, nor a membership organization

SOURCES

BHI Program Structure

OUTCOMES



Financial Sponsors



Partnership Intermediary Agreement



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.

BHI Entrepreneur-in-Residence Program

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
NIH-OTT



Ken Malone
University System of Maryland



Ram Aiyar
NHLBI



Richard Moore
BD Diagnostics

2014 Status



141 78 40
NIH Industry University

Technology Reviews
Conducted

4

EIRs



1

CFLD
Chinese-American
EIR

华夏幸福基业
CHINA FORTUNE LAND DEVELOPMENT



9

Current Clients

3

Pending Clients

4

Potential New
Clients

Future

- Grow portfolio to 15
- Add 2 new EIRs
- Create 5 spinouts or tech placements
- Develop educational programs
- Two funding or partnering deals
- Client Progression

BHI Client Companies



Developing a therapeutic platform that can be adapted to target a wide variety of cancers.

Moco-based Startup



Developing and marketing Organ-on-a-Chip solutions for the pharmaceutical industry.

US-based Subsidiary of Dutch Company



Developing devices for cardiovascular procedures that will solve high unmet needs in the transcatheter valve replacement space.

NHLBI



Developing novel viral clearance kits to be utilized during process development bio therapeutics.

Moco-based Startup



Developing sensors that can detect harmful chemicals mixed in air in very small quantities, such as industrial chemicals, and other pollutants.

Licensee of UMCP and NIST



Developing medical devices related to image-guided, minimally-invasive niche markets.

JHU



Developing a platform vaccine like particle technology that has the potential to be used for various diseases including cancer.

NIH



Speed Biosystems, Inc. is developing novel immunotoxins for the treatment of solid and liquid tumors.

Moco-based Startup



India-based molecular information company with multiple powerful bioinformatics platforms.

India

BHI Startup Package

Corporate Legal

VENABLE[®]
LLP

Intellectual Property



**MILES &
STOCKBRIDGE**

Accounting



Laboratory Space



Incubation



Banking



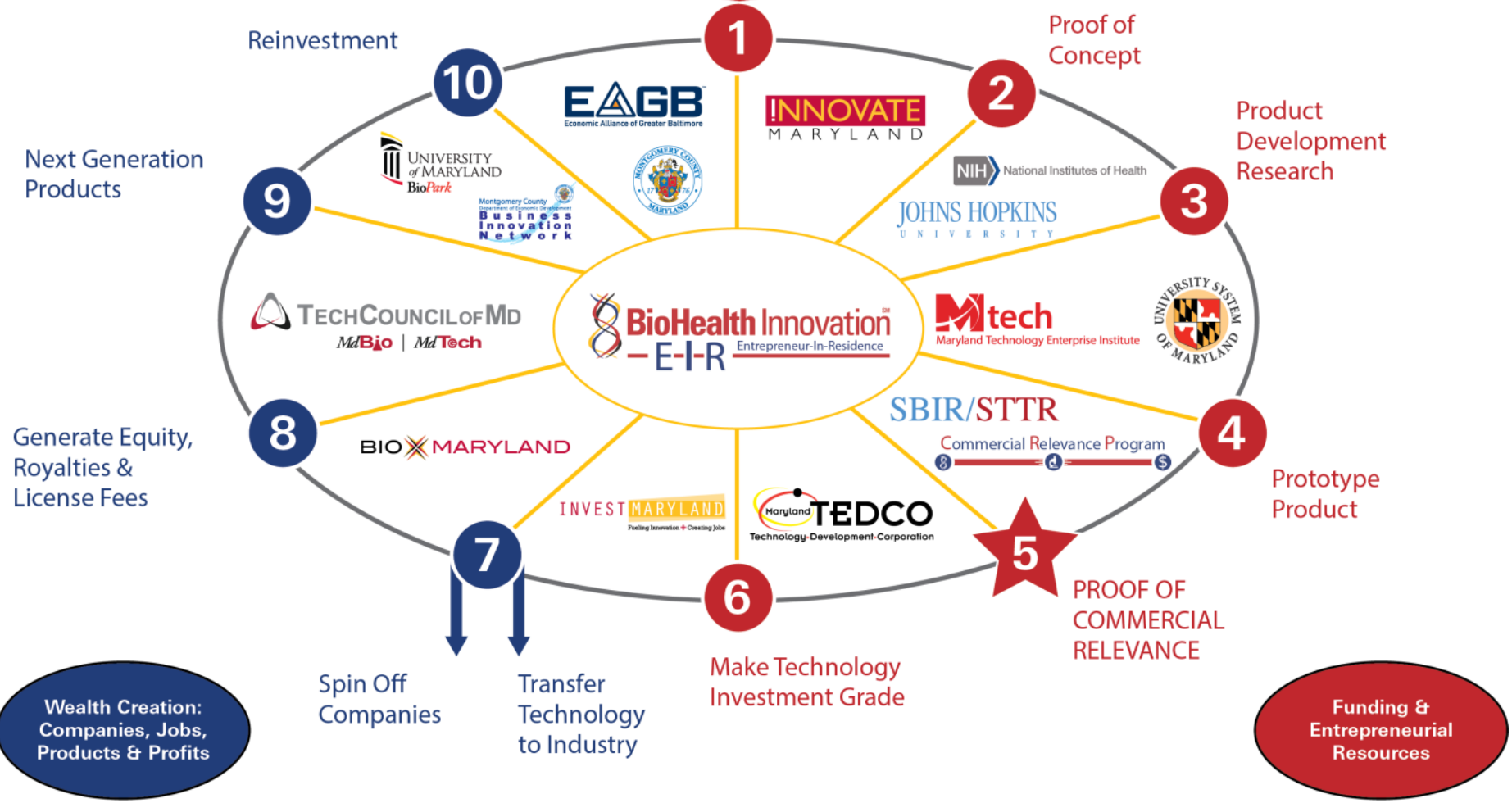
Grant Consulting



ScienceSherpa
Help and Heavy Lifting For Successful Grants and Proposals

BHI Commercialization Model

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



BHI Innovation Capital Map

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

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

Small Business Innovation Research (SBIR) Grant

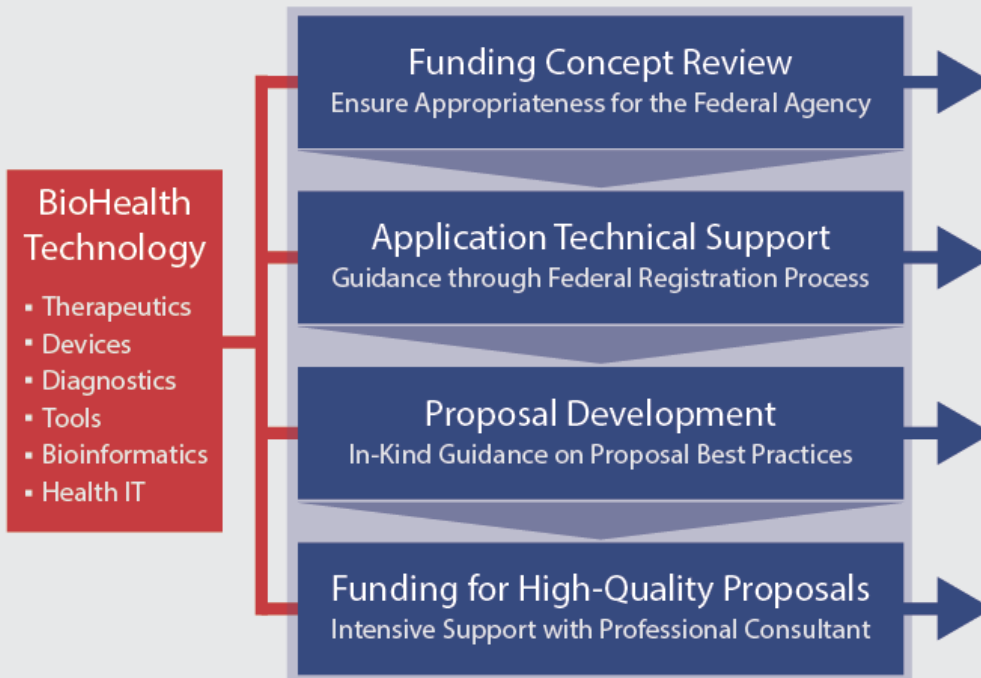
- \$2.5 billion annual United States Government program coordinated by the Small Business Administration
- Administration provides grants or contracts to small businesses to spur technological innovation
- Grants awarded in 3 phases between \$100,000 and \$1.5 million
- Non-dilutive



BHI Federal Funding Assistance



Value Chain of Assistance



Funding Agencies

NSF

NIH
National Institutes of Health

NATIONAL CANCER INSTITUTE

NIH
National Center for Advancing Translational Sciences

DEFENSE FUTURE REDUCTION AGENCIES

BARD
BIOLOGICAL ADVANCED RESEARCH AND DEVELOPMENT

DARPA

BILL & MELINDA GATES foundation

USAID
FROM THE AMERICAN PEOPLE

USAMRIID
United States Army Medical Research Institute of Infectious Diseases
BioDefense solutions to protect our nation

NIH National Heart, Lung, and Blood Institute

CDMRP
Congressional Directed Medical Research Programs
Department of Defense



- A Health IT Accelerator is an intensive 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.

- Retain promising high growth HIT entrepreneurs in MD












- **Partners:**

- ❖ BioHealth Innovation, Inc.
- ❖ Johns Hopkins University
- ❖ DreamIt Ventures
- ❖ Economic Alliance of Greater Baltimore
- ❖ Northrop Grumman
- ❖ Kaiser Permanente
- ❖ DBED

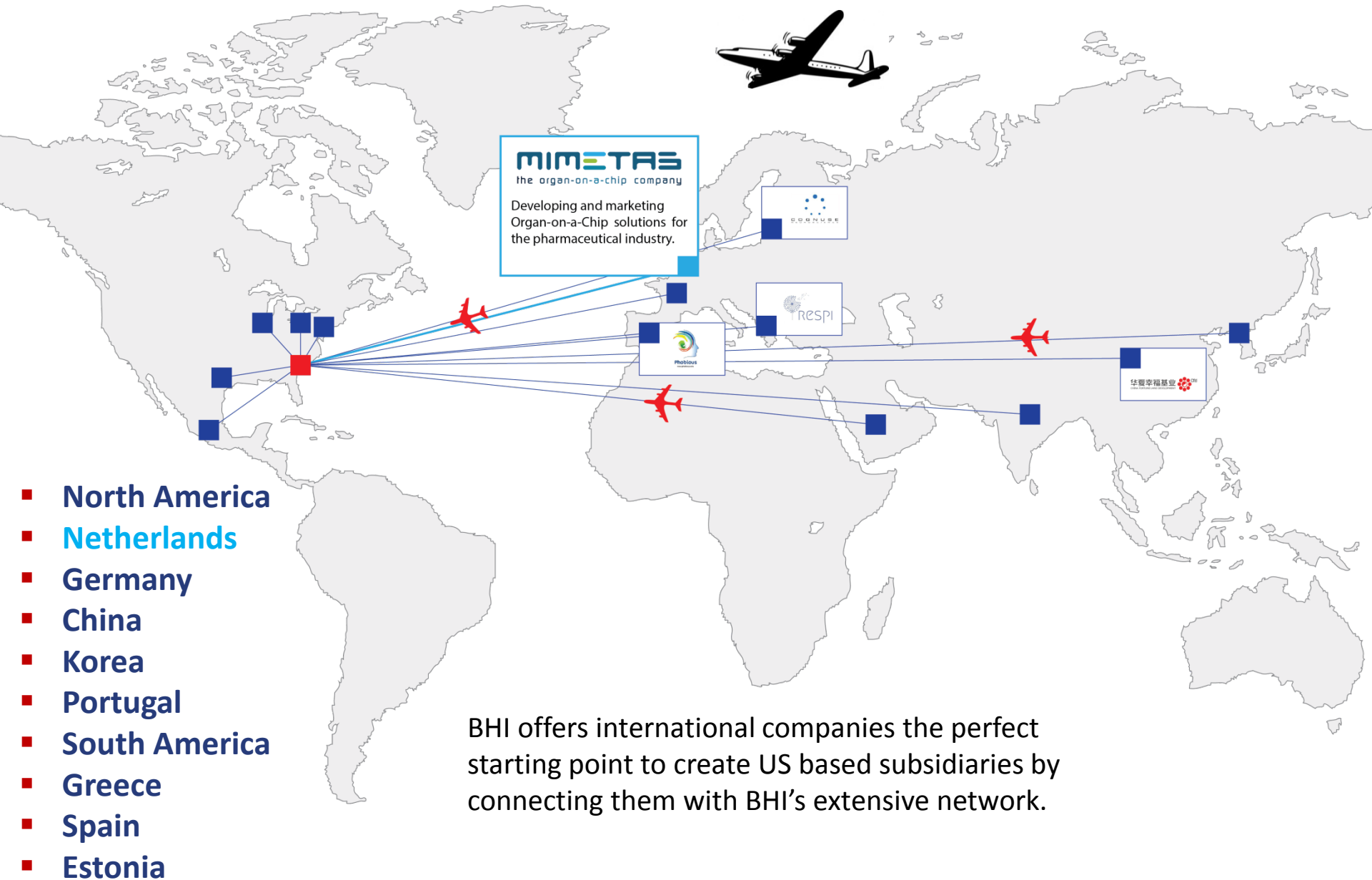


DreamIt Accelerator Companies

JHU
Affiliated

	● Wearable biometric devices	Baltimore, MD	
	● Clinical Decision Support	Baltimore, MD	
	● Mobile Cognitive Rehabilitation	Talinn, Estonia	
	● Mobile Information Platform	Baltimore, MD	
	● Protecting Patient Data	Baltimore, MD	
	● Augmented Reality Treatment	Athens, Greece	
	● Inpatient Care Collaboration	Pittsburgh, PA	
	● Augmented Reality Treatment	Barcelona, Spain	
	● Digital Workflow Management	Baltimore, MD	

BHI International Soft Landing



Contact

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