Welcome to the 2019 BioHealth Capital Region Investment Conference
October 15&16, 2019
State of the BioHealth Capital Region’s EcoSystem

Rich Bendis
President & CEO, BioHealth Innovation Inc.
THANK YOU TO OUR CONFERENCE ORGANIZERS

J.P.Morgan  BioHealth Innovation  WSGR

Deloitte.  AstraZeneca  Maryland OPEN FOR BUSINESS  NIST

108 INVITED COMPANIES

45 INVITED INVESTORS
Welcome to the

Our Goal:
To become a Top 3 BioHealth Hub by 2023

www.biohealthcapital.com
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

2019

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

Brand name = BioHealth Capital Region
The Maryland/Virginia/Washington, DC “BioHealth Capital Region (BHCR)” has won over numerous employers as it strives to grow into a top-three cluster by 2023. Kite, a Gilead Company, chose Maryland’s Frederick County to build a 279,000-square-foot manufacturing site for CAR-T therapies, including its marketed Yescarta® (axicabtagene ciloleucel). Also in April, Paragon Bioservices (since acquired by Catalent) opened a 151,000-square-foot commercial manufacturing center in Harmans, MD. AveXis, a Novartis Company, agreed to use Harmans as a manufacturing site for recently-approved gene therapy Zolgensma® (onasemnogene abeparvovec-xioi). A month later, Gaithersburg, MD-based Viela Bio filed for a $150 million IPO; the company spun out last year from AstraZeneca, a regional anchor since 2007 when it acquired MedImmune (a name retired in February). French diagnostics developer HalioDx, a Qiagen spinout, opened its first North American lab in Richmond at Virginia Bio+Tech Park, which is partnering with Activation Capital to develop additional space for expansion-stage companies.

Regional anchors also include the NIH, FDA, and Johns Hopkins University, which won 40% ($648.971 million) of the region’s $1.6 billion (3,272 awards) in NIH extramural funding, ranking it third; the agency also devotes about 10% of its $39.234 billion FY 2019 budget to intramural research. BHCR is third in NIH funding (3,272 deals totaling $1.608 billion) and patents (5,367), and fourth in lab space with 22.8 million square feet according to Rockville, MD-based Scheer Partners, which measures the entire region [JLL counts 12.95 million for Northern Virginia/Suburban Maryland/Baltimore). In VC, JLL records $1.229 billion, good for fifth (and better than the $750 million counted by PwC/CB Insights). BHCR’s 55,882 jobs (JLL) ranks the region sixth.
2019 BioHealth Capital Regional Forum

Showcasing accomplishments and opportunities for the BioHealth Capital Region

Save the Date
April 15 + 16, 2020
One MedImmune Way, Gaithersburg, MD 20878

BioHealth Capital Region Forum Growth

Registrants

<table>
<thead>
<tr>
<th>Year</th>
<th>Registrants</th>
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<tbody>
<tr>
<td>2015</td>
<td>610</td>
</tr>
<tr>
<td>2016</td>
<td>852</td>
</tr>
<tr>
<td>2017</td>
<td>1,069</td>
</tr>
<tr>
<td>2018</td>
<td>1,127</td>
</tr>
<tr>
<td>2019</td>
<td>1,198</td>
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Sponsors

<table>
<thead>
<tr>
<th>Year</th>
<th>Sponsors</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>17</td>
</tr>
<tr>
<td>2016</td>
<td>26</td>
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<tr>
<td>2017</td>
<td>37</td>
</tr>
<tr>
<td>2018</td>
<td>50</td>
</tr>
<tr>
<td>2019</td>
<td>51</td>
</tr>
</tbody>
</table>
BHCR Support Organizations

**BioHealth Innovation**
Richard A. Bendis
President/CEO

“BHI sources and evaluates market-relevant biohealth intellectual properties, connects the IP with funding, and assists businesses in marketing and growth.”

**Maryland Tech Council**
Marty Rosendale
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.”

**Children’s National**
Kolaleh Eskandanian, PhD, MBA, PMP®
Vice President and Chief Innovation Office

With a health care experience designed around kids’ unique needs, we’re the premier provider of pediatric services in the Washington, D.C., metro area and its only health system specializing in kids.

**TEDCO**
Stephen Auvil
Executive Vice President

“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.”

**VirginiaBio**
John Newby
CEO

“We fuel the network of leaders that drive bioscience to eradicate disease, save lives, and feed the world…..one innovation at a time.”
Recent Company Fundraising Successes in BHCR

**VIELABIO**
MedImmune/AstraZeneca spin-out
Raised $357M to date
$157M IPO Q4-19

**BeneVir**
NYU spin-out
Acquired for $1.4B (2018)

**PGD**
Johns Hopkins spin-out
Raised $99.3M to date

**NextCure**
Technology from Yale
Raised $160M to date
$75M IPO Completed 2019

**GRAYBUGVISION**
Johns Hopkins spin-out
Raised $129M to date

**SpringWorks therapeutics**
Pfizer spin-out
Raised $103M to date

**siRNAomics**
Raised $47M to date

**NEURALY**
Raised $173M to date

**NexImmune**
Johns Hopkins spin-out
Raised $28.2M to date

**Thrive. Earlier Detection**
Johns Hopkins spin-out
Raised $110M to date

**PROTENUS**
Johns Hopkins spin-out
Raised $36M to date

**Dracen Pharmaceuticals**
Johns Hopkins spin-out
Raised $40M to date

**MACROGENICS**
Raised $320M to date

**ARCELLX**
$85M as of Q4-19 Series B

**WindMIL Therapeutics**
Raised $42.5M to date

**Aledade**
Raised $131M to date

**Ascentage Pharma**
Raised $237M to date

- BHIM Client Companies
BHCR has Many Successful Recent Exits

- **October 2019**
  - **Viela Bio**
  - Acquired for $1.2 billion by Jan 2017
  - **NextCure**
  - IPO $75 Million

- **April 2019**
  - **Paragon Bioservices**
  - Acquired for $1.2 Billion by Catalent
  - **Osiris Therapeutics**
  - Acquired for $660 million by Smith & Nephew

- **February 2019**
  - **Danaher**
  - Acquires GE Life Sciences for $21.4 Billion

- **November 2018**
  - **Arena Pharmaceuticals**
  - Acquired for $1.2 Billion

- **September 2018**
  - **Supernus Pharmaceuticals**
  - Acquired Biscayne NeuroTherapeutics for $185 million

- **August 2018**
  - **Stryker**
  - Acquired K2M for $1.4 billion

- **August 2018**
  - **Regeneron Biocure**
  - Raised $202 Million in Secondary Public Offering

- **June 2018**
  - **Autolus**
  - IPO $150 Million

- **May 2018**
  - **BeneVir**
  - Acquired for up to $1.04 billion by Janssen

- **April 2018**
  - **United Therapeutics Corporation**
  - Acquired SteadyMed for up to $216 million

- **Dec 2017**
  - **Harpoon Medical**
  - Acquired for $100 million by Edwards Life Sciences

- **Dec 2017**
  - **SUCAMPO**
  - Acquired for $1.2 billion by Mallinckrodt Pharmaceuticals

- **Nov 2017**
  - **VWR**
  - Acquired for $6.5 billion by Avantor

- **Jan 2017**
  - **altimmune**
  - Merger and IPO with PharmAthene
Venture Investment in BHCR is Growing but going to Fewer Deals

**Data gathered from Pitchbook 209**

*Total Investment Dollars Near All-time Highs*

*Capital is Moving Upstream*

*Several Recent Successful Exits*
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
Public BioHealth Companies Headquartered in the Region
108 Invited Companies to BHCR Investment Conference

20/20 Genesystems
AAVogen
Aclipse Therapeutics
Adaptive Phage Therapeutics
Advanced BioNutrition
Alphyn Biologics, LLC
American Gene Technologies
AMPEL BioSolutions
Anubis Bo Corp
AscelpiX Therapeutics
Asklepion Pharmaceuticals
Asulon Therapeutics
Atrin Pharmaceuticals
Avidea Technologies, Inc.
BioFactura
BRAINBox Solutions Inc.
BrainScope Company, Inc.
Brandywine Pharmaceuticals LLC
BraneQuest
Caretaker Medical Group
Carma Cellular Therapies
Diverse Biotech
DNAlite Therapeutics, Inc.
DTx Pharma, Inc.
EagleImmune
En’Urga Inc.
ExPrimary, Inc.
Gemstone Biotherapeutics, LLC
Gemstone Biotherapeutics
GenArraytion, Inc.
Geneos Therapeutics
Gentian Diagnostics AS
GlycoT Therapeutics LLC
HeMemics Biotechnologies, Inc.
Humanigen, Inc.
IIES Life Science, Inc.
Immunomic Therapeutics
INHERENT BIOSCIENCES, INC.
Intralytix, Inc.
ISOThrive
Jeeva Informatics
JuneBrain, LLC
KaliVir Immunotherapeutics
Kalos Therapeutics
KinaRx, LLC
Klaritos
Knopp Biosciences
Landos Biopharma
Linnaeus Therapeutics, Inc.
Linshom Management
Lissen Laboratories
Mentia
miRecule
Miromatrix
Moterum Technologies
Nanochn
NeoProgen
New Discovery Biologics
Nikang Therapeutics, Inc.
Novodux
OncuFLOW, Inc.
Omni Biosciences
Oncoceutics
Oncolimmune, Inc.
OS Therapies
Pathotruk Inc.
Peptilogics
Perthera, Inc.
Pyramid Biosciences
PyroDex, Inc.
Remedy Plan Therapeutics
Renalert
RI Dx Inc.
Rise Therapeutics
SCANOGEN, Inc.
Sequella, Inc.
Seraxis Inc
Sharp Edge Labs
Sisu Global Health Inc.
Skyphos Industries
SmartBridge Health
Sonavex, Inc.
Sonnest
Splice Therapeutics
Stuart Therapeutics, Inc.
Tailored Therapeutics
Tasly
Techuulon
Telesis Therapeutics
Theradaptive
True Bearing Diagnostics, Inc.
TruGenomix Health, Inc.
Unleash Immuno Oncolytics, Inc
Vaccitech. Ltd.
Veralox Therapeutics, Inc.
Virion Therapeutics
Western Oncolytics
WhisoeSom
WindMIL Therapeutics
45 Investors Invited to BHCR Investment Conference

AbbVie Ventures
Alexandria Real Estate Equities
Alpha Point Capital
Artis Ventures
Astra Zeneca
Avantor
BioAdvance
BioHealth Innovation, Inc.
Brace Venture Capital
Brian Helmick/BrightWV
Broad Oak
Brook Dell
Camden Partners
Carefirst Bluecross Blueshield
Crohn’s & Colitis Foundation
Decisive Investment Group
Edelman Family Office
Epidarex Capital
Family Offices/Sheffield
Hatteras Venture Partners
Inova Health System
J&J Innovations
JJDC
Leavitt Partners
LTP Equity
Lumira Capital
Marketshare Capital
Medical Technology Transfer
National Cancer Institute SBIR/STTR
New Verte Fund
Northpond Ventures
Otsuka Pharmaceuticals
Pappas Capital
Predictive Tech Group
Prevail Partners
Sound Affects
Taiwania Capital
TEDCO/MII
The Leukemia & Lymphoma Society
Thiel Capital LLC
Tosoh USA/TTM Advisors
University System of Maryland Momentum Fund
Ven Bio
Weller Development
Xontogeny
BHCR GAP FUND

Fund Addresses Critical Gap in Current Funding Portfolios

Investment Size

$100K → $500K → $1M → $5M → $10M → $25M+

BHCR Gap Fund

Alexandria Real Estate Equities #1 Most Active Investor

New Enterprise Associates #2 Most Active Investor

Dingman Center Angels

Maryland Momentum Fund

TEDCO

CIT GAP BioLife Fund

Baltimore Angels

Camden Partners

Inova Accelerator

Green Spring Associates

ArrowMark Partners
<table>
<thead>
<tr>
<th><strong>Name</strong></th>
<th>BHCR Gap Fund</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Structure</strong></td>
<td>Delaware Limited Partnership</td>
</tr>
<tr>
<td><strong>Target Fund Size</strong></td>
<td>$50m with first close at $25m</td>
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<tr>
<td><strong>Term</strong></td>
<td>10 years with 2 one-year extension provisions</td>
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<tr>
<td><strong>Investment Period</strong></td>
<td>3-5 years from final close date</td>
</tr>
<tr>
<td><strong>Investment Focus</strong></td>
<td>Seed to Series A stage companies in the biohealth industry</td>
</tr>
<tr>
<td><strong>Management Fee</strong></td>
<td>2% of committed capital, declining after investment period, payable annually</td>
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<tr>
<td><strong>Carried Interest</strong></td>
<td>20%</td>
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<tr>
<td><strong>Minimum Unit</strong></td>
<td>$1M LP : HNW By Invite Only</td>
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## Agenda

### October 9, 2018

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>9:30am</td>
<td>Paired Meetings (1-30 min session)</td>
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<tr>
<td></td>
<td>Registration and Breakfast</td>
</tr>
<tr>
<td>10:00am</td>
<td><strong>Opening Remarks:</strong></td>
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<tr>
<td></td>
<td><em>Rich Bendis, Pres. &amp; CEO, BioHealth Innovation Inc.</em></td>
</tr>
<tr>
<td>10:25am</td>
<td>Paired Meetings (2-30 min sessions)</td>
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<tr>
<td>11:15am</td>
<td>Lunch</td>
</tr>
<tr>
<td>11:00am</td>
<td><strong>Keynote Speaker:</strong></td>
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<tr>
<td></td>
<td>Introduction: <em>Charles Andres</em>, Wilson Ornstein</td>
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<tr>
<td></td>
<td>Goodrich &amp; Rosati</td>
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<tr>
<td></td>
<td><em>Andrei Iancu</em>, Director, United States Patent and Trademark Office</td>
</tr>
<tr>
<td>11:40am</td>
<td>Paired Meetings (4-30 min sessions)</td>
</tr>
<tr>
<td>12:00pm</td>
<td><strong>Investment Panel:</strong></td>
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<tr>
<td></td>
<td><strong>Moderators:</strong></td>
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<td></td>
<td><em>Joel Marcus</em>, Exec Chairman &amp; Founder &amp; <em>Christopher Otey</em>, SVP, Science &amp; Technology, Alexandria Real Estate Equities</td>
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<tr>
<td></td>
<td><strong>Panelists:</strong></td>
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<tr>
<td></td>
<td><em>Joshua Resnick</em>, Managing Director, RA Capital, A. Sindahl Dunlop, Founder and Managing Partner, Epidarex Capital, and David Schober, COO, Accelerator Life Science Partner</td>
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<tr>
<td>5:30pm</td>
<td>Networking Reception</td>
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### October 10, 2018

<table>
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<tr>
<th>Time</th>
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<tbody>
<tr>
<td>8:00am</td>
<td>Paired Meetings (1-30 min sessions)</td>
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<tr>
<td></td>
<td>Registration &amp; Breakfast</td>
</tr>
<tr>
<td>9:30am</td>
<td><strong>Keynote Speaker:</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Open Networking</strong></td>
</tr>
<tr>
<td>10:00am</td>
<td>Paired Meetings (3-30 min sessions)</td>
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<tr>
<td>12:00pm</td>
<td>Lunch</td>
</tr>
<tr>
<td>1:15pm</td>
<td><strong>Keynote Speaker:</strong></td>
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<tr>
<td></td>
<td>Introduction: <em>Eric Victory</em>, VP Biotech Partnering &amp; Strategy, Medimmune</td>
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<tr>
<td></td>
<td><em>Christopher P. Austin</em>, Director, National Center for Advancing Translational Sciences</td>
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<tr>
<td>2:30pm</td>
<td>Paired Meetings (2-30 min sessions)</td>
</tr>
<tr>
<td>3:10pm</td>
<td><strong>Closing Remarks:</strong></td>
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SAVE THE DATE

BioHealth Capital Regional Forum
April 15 + 16, 2020
1 MedImmune Way, Gaithersburg, MD
A BIG THANK YOU TO

108 INVITED COMPANIES

45 INVITED INVESTORS