

November 1, 2019

The Honorable Ralph S. Northam Governor of the Commonwealth of Virginia Patrick Henry Building, 3rd Floor 1111 East Broad Street Richmond, Virginia 23219

The Honorable Thomas K. Norment, Jr. Co-Chair, Senate Committee on Finance 14th Floor, Pocahontas Building 900 East Main Street Richmond, Virginia 23219

The Honorable S. Chris Jones Chair, House Committee on Appropriations 13th Floor, Pocahontas Building 900 East Main Street Richmond, Virginia 23218

Re: Virginia Biosciences Health Research Corporation Fiscal Year 2019 Annual Report

Dear Governor Northam, Senator Norment, Senator Hanger, and Delegate Jones:

Chapter 854, Item 103, of the 2019 Acts of Assembly includes funding for the Virginia Biosciences Health Research Corporation (VBHRC), a 501(c)(3) non-stock corporation research consortium, to serve as a catalyst to accelerate and focus life science research momentum at Virginia's universities. VBHRC uses the name "Virginia Catalyst."

The Honorable Emmett W. Hanger, Jr.

14th Floor, Pocahontas Building

900 East Main Street

Richmond, Virginia 23219

Co-Chair, Senate Committee on Finance

Chapter 854, Item 103 G.6. requires that you be provided by, November 1 of each year, a written report summarizing the activities of the consortium, including a summary of how any funds disbursed to the consortium during the previous fiscal year were spent, and the consortium's progress during the fiscal year in expanding upon existing research opportunities and stimulating new research opportunities in the Commonwealth.

In conjunction with the staff of Virginia Catalyst, VEDP is pleased to provide you with a comprehensive report detailing the mission, funding, initiatives and progress of Virginia Catalyst in Fiscal Year 2019.

VEDP thanks you for your continued support of these important and innovative efforts to transform Virginia's economy. As always, please do not hesitate to contact Mike Grisham, the President and Chief



The Honorable Ralph S. Northam The Honorable Thomas K. Norment, Jr. The Honorable Emmett W. Hanger, Jr. The Honorable S. Chris Jones November 1, 2019 Page 2 of 2

Executive Officer of Virginia Catalyst, or me, if you would like any additional information.

Very truly yours,

Javel Jones McNinch

General Counsel

cc: The Honorable R. Brian Ball, Secretary of Commerce & Trade

Mr. Mike Grisham, President and Chief Executive Office

Virginia Biosciences Health Research Corporation

Virginia Biosciences Health Research Corporation

also known as the Virginia Catalyst

"achieving competitive critical mass through collaboration"

Annual Report for Fiscal Year 2019 to the General Assembly of Virginia
Submitted November 1, 2019



Forward

The 2019 Virginia Acts of Assembly, Chapter 854, Item 103:G includes funding for the Virginia Biosciences Health Research Corporation (VBHRC), a 501(c)(3) non-stock corporation, to serve as a research consortium and catalyst to accelerate and focus life science research momentum at Virginia's universities.

This item also includes the requirement that you are provided, by November 1 of each year, a written report from the Virginia Economic Development Partnership Authority (VEDP) summarizing the activities of the VBHRC consortium. The report is to include a summary of how any funds disbursed to the consortium during the previous fiscal year were spent, and the consortium's progress during the fiscal year in expanding upon existing research opportunities and stimulating new research opportunities in the Commonwealth.

We are pleased to submit to you the following report to detail progress made on core objectives, with a focus on the results achieved during Fiscal Year 2019. Please note, as with our prior annual reports, we are continuing our practice of including details of ongoing efforts into the current fiscal year.

Statement from Mike Grisham, CEO

"On behalf of VBHRC Virginia Catalyst and its Board of Directors, we thank you for your continued support of these important and innovative efforts to advance commercialization of Virginia's life science innovations and create high-paying jobs in Virginia. This is achieved through collaborations with our research universities, health systems, and industry.

As always, if you have any questions or requests, or if we can be of any assistance, please do not hesitate to contact us!"

Mike Grisham
President and CEO
mgrisham@VirginiaCatalyst.org
804-543-5200

Suzänne Zeta, PhD, MBA Vice President of Operations suzeta@VirginiaCatalyst.org 804-937-3919

Virginia Biosciences Health Research Corporation Annual Report for Fiscal Year 2019 to the General Assembly of Virginia

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Overview of Virginia Biosciences Health Research Corporation

Established in 2013 as Virginia's research consortium the Virginia Biosciences Health Research Corporation (VBHRC) was founded through the vision and joint efforts of the Commonwealth of Virginia and the five (5) founding members consisting of Virginia's premiere research institutions: Virginia Commonwealth University, Eastern Virginia Medical School, George Mason University, Virginia Tech, and the University of Virginia. In 2014, Old Dominion University became the sixth member institution; and in October 2016, William & Mary joined as the seventh member institution of this consortium.

As stated in the 2019 Virginia Acts of Assembly, Chapter 854, Item 103.G, the overarching purpose and focus of VBHRC is to stimulate and cultivate collaborations and partnerships among Virginia's research universities, major health systems, and industry to produce a positive economic impact within the Commonwealth. This is measured by tracking job creation and follow-on funding for commercializing Virginia's innovations. VBHRC's strategic initiatives increase corporate-sponsored, federal, industry, and philanthropic research funds brought into Virginia; resulting in commercialization of new technologies, formation of new companies, creation of jobs, and expansion of bioscience companies in Virginia.

VBHRC is governed by a Board of Directors (BOD)¹ with primary duties that include:

- Reviewing and approving the annual budget
- · Reviewing annual and periodic financial statements and information
- Reviewing Chief Executive Officer's performance annually, establishing salary
- Reviewing and approving all program grant projects
- Reviewing and approving all supplier contracts over \$25,000
- Reviewing and approving all non-budgeted expenditures over \$10,000
- Reviewing and advising staff on internal controls and accounting policies and procedures
- Annually contracting for an audit of the VBHRC and meeting at least annually with the external auditor to review the results of the audit.

The BOD is comprised of a maximum of sixteen directors, nine of whom are ex-officio directors as follows:

- Secretary of Commerce and Trade of Virginia
- President and Chief Executive Officer, Virginia Economic Development Partnership Authority

¹ Appendix A lists members of VBHRC Board of Directors, Project Management and Oversight Panel, and Management

President of each of the (seven) member institutions

Each of the nine ex-officio directors may designate an employee of his or her agency or institution to act in his or her stead. The remaining six directors represent the United States Department of Veterans Affairs, health care system providers in Virginia, life sciences companies, venture capital firms, and the biosciences industry in Virginia.

The 2019 Virginia Acts of Assembly, Chapter 854, Item 103:G includes funding of VBHRC for Fiscal Years 2019 and 2020 in order to achieve established core objectives. In addition, the President of each member university agreed to commit a cash contribution of \$50,000 each year.² As stated in the aforementioned Acts of Assembly, along with supporting the administrative, promotional and legal costs of establishing and administering the consortium, funding may be used to develop or maintain investments in research infrastructure tools to facilitate bioscience research (Item 103:G.2), and to capture and perform research in the biosciences (Item 103:G.3).

In Fiscal Year 2018, VBHRC was funded \$3,750,000 by the Commonwealth of Virginia and \$350,000 through the member institutions (\$50,000 per each year of the seven (7) member institutions), bringing the total funding for Fiscal Year 2018 to \$4,100,000.

In Fiscal Year 2019, VBHRC was funded \$3,750,000 by the Commonwealth of Virginia and \$350,000 through the member institutions (\$50,000 per each year of the seven (7) member institutions), bringing the total funding for Fiscal Year 2019 to \$4,100,000.

See Appendix C for Fiscal Year 2019 Financial Statements, Independent Auditor's Report, and Fiscal Year 2020 Budget.

Core Objectives

Also stated in the aforementioned Acts of Assembly are core objectives stating that VBHRC, a research consortium, will contract with private entities, foundations and other governmental sources to:

- · capture and perform research in the biosciences,
- promote the development of bioscience infrastructure tools which can be used to facilitate additional research activities, and
- develop or maintain investments in research infrastructure tools to facilitate bioscience research.

-

² Appendix B provides details regarding the funding history of VBHRC

The overarching purpose of these core objectives and efforts is to have a positive economic impact to the Commonwealth by increasing corporate-sponsored research resulting in commercialization of new technologies, formation of new companies, creation of jobs, and expansion of bioscience companies in Virginia.

In accordance with the core objectives, VBHRC has several strategically designed initiatives that focus on:

- stimulating collaborations and partnerships with and among our research universities, industry, and the five major medical centers: Sentara, Inova, UVA Health System, VCU Health, and Carilion,
- · creating infrastructures that remove barriers and promote collaborations,
- actively pursuing opportunities to bring outside sources of research funding into Virginia's research institutions, and
- leveraging collaborations to develop a competitive critical mass of expertise and resources to commercialize Virginia's innovations.

Strategic Initiatives

Our strategically designed initiatives, each detailed further in this report, include:

- Grant Funding Rounds
- Virginia Neuroscience Initiative
- Virginia Catalyst Clinical Trials Network

These initiatives continue to result in positive economic impacts to the Commonwealth of Virginia including:

- increased corporate-sponsored, federal, industry, and philanthropic research funds brought into Virginia,
- increased commercialization of new technologies,
- increased patents and resulting royalties for those respective Virginia universities
- · formation of new companies based in Virginia,
- expanded involvement of bioscience companies in Virginia.

Progress on Core Objectives

Grant Funding Rounds

Overview and Objectives

The Virginia Catalyst conducts formalized, competitive Grant Funding Rounds to:

 Encourage collaborative partnerships between two or more Virginia research universities and an industry partner,

- Fund the development and commercialization of life science projects that address major unmet needs for improving human health,
- Accelerate commercialization of Virginia research university inventions and discoveries.
- Increase Virginia's national and global competitiveness in the life sciences by creating critical mass through collaborations between and among Virginia's research universities, health systems, and industry partners,
- · Create jobs and economic growth in Virginia.

The eligibility requirements for obtaining funding through the Virginia Catalyst Grant Rounds are:

- Substantive collaboration between investigators from at least two (2) Virginia research universities and an industry partner,
 - matching funds of at least 1:1 for the project. The match must be a cash dollar-for-dollar match, not in-kind services or a waiver of indirect overhead charges. Matching funds are verified by the Virginia Catalyst.

Awards range from \$200,000 to \$800,000 per project and are non-dilutive. All Virginia Catalyst funding is disbursed over the project period based upon verified completion of objective and measurable milestones. The Virginia Catalyst disburses the funds directly to the Prime University, not the industry partner. The Prime University then disburses funds to the Partner University and the Industry Partner.

Project Management and Oversight Panel

The Project Management and Oversight Panel⁴, the CEO, and the Board of Directors developed and approved criteria and standardized processes which govern the Virginia Catalyst Grant Rounds including:

- Project solicitation from institutions and companies
- Determination that eligibility requirements have been satisfied
- Project review for scientific rigor and impact on unmet needs for improving health
- Project review for abilities of commercialization, obtaining follow-on funding, and job creation
- Progress reporting by the project team including progress towards milestones and continuation of the project
- Related project management issues and decisions.

³ Virginia research universities and member institutions of the Virginia Catalyst: University of Virginia, Virginia Commonwealth University, Eastern Virginia Medical School, George Mason University, Old Dominion University, Virginia Tech, William & Mary

⁴ Appendix A lists members of VBHRC Board of Directors, Project Management and Oversight Panel, and Management

Fiscal Year 2019 Awarded Projects⁵

Virginia Catalyst conducted one full, and opened a second, Grant Round in Fiscal Year 2019. See Appendix D.1 for a summary of all awarded projects to date.

Grant Round 9

In May 2019, VBHRC funded four (4) projects for a total amount of \$2.1 million.

These projects brought a total of \$3.2 million in matching funds and involved:

- Five (5) Virginia research universities, and
- Four (4) industry partners

As of June 30, 2019 all of these projects were open and progressing towards milestones as per their respective award agreements. One of these projects has secured \$4.05 million in follow-on funding and created 4 new jobs in Virginia.

Economic Returns⁶

The Virginia Catalyst awarded its first Grant Rounds in December 2013, and as of June 30, 2019, has conducted nine cycles of Grant Rounds. See Appendix D.2 for details on economic returns to date.

Cumulatively through June 30, 2019

The Virginia Catalyst funded a total of \$15.8 million to 37 collaborative projects.

Together these projects brought a total of \$30.1 million in matching funds and involved:

- Six (6) Virginia research universities, and
- Thirty-one (31) industry partners

And resulted in a total of:

- \$163.6 million in follow-on funding
- 151 new jobs created in Virginia

⁵ Appendix D.1 provides a summary of all awarded projects to date

⁶ Appendix D.2 provides details on economic returns to date

Virginia Neuroscience Initiative

Overview and Objectives

Virginia Catalyst established the Virginia Neuroscience Initiative (VNI) in 2016. The VNI is an innovative, statewide collaborative approach that brings together experienced scientists, medical providers, and industry partners to increase Virginia's competitiveness in the neurosciences.

Interest Groups

In Fiscal Year 2019 the Virginia Catalyst established Neuroscience Interest Groups to encourage collaborations among scientists, medical providers and industry. The interest groups are:

Interest Group	# Members	Chair(s), (Institution)
Alzheimer's Disease	78	Daniel Cohen, MD (Sentara) Carol Manning, PhD (UVA)
Anxiety	81	Anita Kablinger, MD (Carilion)
Astrocytes	25	Raymond Colello, PhD (VCU) Uri Kahanovitch, PhD (VT)
Blood-Brain Barrier	21	Shayn Peirce-Cotter, PhD (UVA)
Brain-Computer Interface	41	Dean Krusienski, PhD (VCU)
Depression	43	Susan Kornstein, MD (VCUHS)
Epilepsy	56	Alberto Musto, MD, PhD (EVMS)
Microglia	19	Tajie Harris, PhD (UVA)
Movement Disorders	52	Claudia Testa, MD, PhD (VCUHS)
Neuroanatomy	19	Ted Dumas, PhD (GMU)
Neurochemistry	29	Jill Venton, PhD (UVA)
Neuroimaging	139	Jason Druzgal, MD (UVAHS) Biraj Patel, MD (Carilion)
Neuroimmunology	78	Myla Goldman, MD (UVAHS)
Neurons	38	Nancy Xu, PhD (ODU)
Neuro-Oncology	107	William Broaddus, MD, PhD (VCUHS) Mark Malkin, MD (VCUHS) Ben Purrow, MD (UVAHS)
Neurophysiology	27	Rory McQuiston, PhD (VCU)

Neurotrauma	135	Dong Sun, MD, PhD (VCU)
Oligodendrocytes	15	Sarah C. Kucenas, PhD (UVA)
Opioid Addiction	33	Robert Lipsky, PhD (Inova) Gerry Moeller, MD (VCUHS)
PTSD	23	Scott McDonald (RVAMC)
Sensory Systems	93	Michael A. Fox, PhD (VT)
Stroke	44	Bradford Worrall, MD (UVAHS)

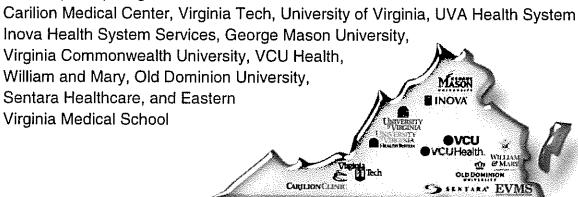
Virginia Catalyst Clinical Trials Network

Overview and Objectives

The Virginia Catalyst Clinical Trials Network is a collaboration among research universities and major medical centers in Virginia, designed to:

- Provide Virginia's scientists and investigators an expanded platform that accelerates their ability to conduct clinical research and strengthens abilities to win grant awards
- Attract pharmaceutical companies and clinical research organizations to conduct more funded clinical trials in Virginia

Institutions participating in the Clinical Trials Network include:



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Appendix A: Governance Overview

Non-government related positions on the Board of Directors, as well as the Project Management and Oversight Panel, are filled on a pro bono basis by qualified individuals who hold important bioscience-related expertise, value the public service nature of this position, and possess a sincere interest in helping to advance Virginia's bioscience community. VBHRC Virginia Catalyst and VEDP are deeply grateful for their voluntary contributions to the Commonwealth.

A.1 Members of Board of Directors

As per the Articles of Incorporation of VBHRC, as amended March 7, 2017, VBHRC shall be managed by a board of directors consisting of a maximum of fifteen directors, nine of whom shall be ex-officio directors designated by entities controlled by the Commonwealth of Virginia. This is intended to satisfy Article IV, §16 of the Constitution of Virginia. With respect to the remaining six directors, one (1) shall be a representative of the United States Department of Veterans Affairs, two (2) shall be representatives of statewide health care system providers in Virginia, and the board of directors shall designate an additional three directors representing life sciences company, venture capital firm that regularly invests in life science companies, and statewide representative of the biosciences industry in Virginia.

The current members of the VBHRC Virginia Catalyst Board of Directors are as follows:

	Designated Board Seat	Current Board Member
1.	Secretary of Commerce and Trade of Virginia or his/her designee	Robby Demeria Deputy Secretary for Technology
2.	President and Chief Executive Officer of the Virginia Economic Development Partnership Authority or his/her designee	Vince Barnett Vice President, Business Investment
3.	President of the University of Virginia or his/her designee	Melur K. Ramasubramanian, Ph.D. Interim Vice President for Research
4.	President of the Virginia Polytechnic Institute and State University or his/her designee	Michael Friedlander, Ph.D. Founding Executive Director, Virginia Tech Carilion Research Institute, and Associate Provost for Health Sciences
5.	President of George Mason University or his/her designee	Deborah Crawford, Ph.D. Vice President for Research

6. President of Virginia Commonwealth University or his/her designee	Francis L. Macrina, Ph.D. Vice President for Research
7. President of Eastern Virginia Medical School or his/her designee	Jerry L. Nadler, M.D. Vice Dean for Research
President of Old Dominion University or his/her designee	Morris Foster, Ph.D. Vice President for Research
President of College of William and Mary or his/her designee	Dennis Manos, Ph.D. Vice Provost for Research and Graduate/Professional Studies
10. Representative of the United States Department of Veteran Affairs	David X. Cifu, M.D. National Director for PM&R Services
11. Representative of statewide health care system provider in Virginia	Howard P. Kern President and CEO, Sentara Healthcare
12. Representative of statewide health care system provider in Virginia	Effective 10-1-2019: Mickey Kim, MD, MBA
13. Representative of a life sciences company	Jeff Conroy Founder and CEO Embody LLC
14. Representative of a venture capital firm that regularly invests in life sciences companies	Thomas D. Roberts, III General Partner Harbert Management Corporation
15. Representative of a venture capital firm that regularly invests in life sciences companies	Kyp Sirinakis Co-Founder and Managing Director Epidarex Capital
16. Statewide representative of the biosciences industry in Virginia	Jeffrey M. Gallagher Former CEO Virginia Bio

A.2 Members of Project Management and Oversight Panel

As per the Articles of Incorporation of VBHRC, as amended March 7, 2017, the Board of Directors shall establish a Project Management and Oversight Panel with eleven members, which include six (6) scientists, one of which will be a medical doctor or clinical practitioner; three (3) shall be representative of life science companies; and two (2) shall be representative of venture capital firms that actively invest in life science companies.

The current members of the VBHRC Virginia Catalyst Project Management and Oversight Committee are as follows:

Designated Panel Seat	Current Panel Member
Science and Clinical	Ali Andalibi, Ph.D. Associate Dean of Research
	George Mason University
2. Science and Clinical	O. John Semmes, Ph.D.
	Director, Leroy Canoles Jr. Cancer Research Center
	Eastern Virginia Medical School
3. Science and Clinical	George S. Bloom, Ph.D.
	Professor of Biology, Cell Biology and Neuroscience
	Director, Neuroscience Undergraduate Program,
4. Science and Clinical	University of Virginia Charles Anamelechi, Ph.D.
4. Ocience and Omnica	Healthcare Strategy Manager
	Monitor Deloitte
5. Science and Clinical	Mickey Kim, M.D., M.B.A.
	(Through September 30, 2019)
6. Life Science Company	Jeff Pompeo
	President and CEO
	CareTaker Medical, LLC
7. Life Science Company	Rony Thomas
	President and CEO
8. Life Science Company	LifeNet Health, Inc. Gerard Eldering
o. Life Science Company	President
	Innovate Tech Ventures
9. Life Science Company	James C. Powers
	Chairman and CEO
	Hemoshear, LLC
10. Venture Capital Firm	Bob Creeden
	Managing Director
	UVA Seed Fund and New Ventures
11. Venture Capital Firm	Scott Meza
	Shareholder and Attorney at Law
	Greenberg Trauig
12. Venture Capital Firm	Monique Adams
	Executive Director
	757 Angels Group

A.3 Members of Management

As per the Articles of Incorporation of VBHRC, as amended March 7, 2017, the officers of VBHRC shall consist of a President, and such other officers and assistant officers and agents as may be deemed necessary by the Board of Directors. The President shall be the chief executive officer, shall have active executive management of the operations of VBHRC subject to the control of the Board of Directors.

Mike Grisham, MBA President and CEO

Mike Grisham has served as President and CEO of VBHRC Virginia Catalyst since 2014. Prior to this he was the Founder, Managing Member, and CEO of GPB Scientific LLC since 2002. He has over 21 years of experience in biosciences, building diagnostic and healthcare companies. Mr. Grisham founded and served as CEO of Celective DX (acquired by On-Q-ity); Verinata Health Inc. (acquired by Illumina); and Paradigm Health Corporation (acquired by Alere). Grisham holds a BA from University of California, Berkeley and an MBA from Stanford Graduate School of Business.

Suzänne Zeta, PhD, MBA Vice President of Operations

In July 2018, Dr. Zeta joined VBHRC Virginia Catalyst as Vice President of Operations. Prior to this, Dr. Zeta worked for VBHRC to develop a marketing portfolio and provide support for the Virginia Neuroscience Initiative. Previously a member of Virginia Commonwealth University's Department of Physical Medicine and Rehabilitation, her clinical practice, instruction, research, and nationwide presentations led to recognition as a leader and expert in oncology rehabilitation. Taylor also has extensive healthcare management experience including serving as a Regional Director of Operations for American Retirement Corporation and Brookdale Senior Living. Along with being a licensed occupational therapist and having a Master of Business Administration in Healthcare Management degree, Zeta obtained a Doctor of Philosophy degree in Health Related Sciences from Virginia Commonwealth University.

Appendix B: Funding History of VBHRC

The founding members of VBHRC were Virginia's premiere research institutions: Virginia Commonwealth University, Eastern Virginia Medical School, George Mason University, Virginia Polytechnic Institute and State University and the University of Virginia. Old Dominion University became the sixth member of the consortium effective in 2014, and effective in Fiscal Year 2017, the College of William & Mary became the seventh member of the consortium.

The Commonwealth of Virginia committed funding for Fiscal Years 2013 and 2014 to establish the core objectives of the consortium. In addition to this funding, the President of each member university agreed to commit a cash contribution to participate. The Commonwealth's commitment during those two fiscal years totaled \$5 million, supplemented by a \$100,000 contribution from each member university, distributed as \$50,000 each year.

Funds from Fiscal Years 2013 and 2014 carried over to Fiscal Year 2015. Therefore there was not additional funding from the Commonwealth in Fiscal Year 2015.

For Fiscal Year 2016, VBHRC received \$2,500,000 in funding from the Commonwealth and a total of \$300,000 (\$50,000 each) from its member universities.

In Fiscal Year 2017, VBHRC was funded \$2,500,000 by the Commonwealth of Virginia and \$350,000 through the member institutions (\$50,000 per each year of the seven (7) member institutions), bringing the total funding for Fiscal Year 2017 to \$2,850,000.

In Fiscal Year 2018, VBHRC was funded \$3,750,000 by the Commonwealth of Virginia and \$350,000 through the member institutions (\$50,000 per each year of the seven (7) member institutions), bringing the total funding for Fiscal Year 2018 to \$4,100,000.

Appendix C: Financial Statements and Independent Auditor's Reports

C.1 Fiscal Year 2019

(attached)

C.2 Fiscal Year 2020 Budget

(attached)

Appendix D: Grant Funding Rounds

D.1 Summary of Awarded Projects to Date

Grant Round 1 - December 2013

Virginia Polytechnic Institute and State University Virginia Commonwealth University

BioTherapeutics, Inc.

Company status: active

Blacksburg, VA

https://www.biotherapeuticsinc.com/

Development of novel anti-inflammatory drugs

University of Virginia George Mason University

HemoShear Therapeutics, LLC

Company status: active

Charlottesville, VA

https://www.hemoshear.com/

Commercialization of a human tumor microenvironment system for pharmaceutical cancer drug discovery and development

Virginia Polytechnic Institute and State University University of Virginia

FirstString Research, Inc.

Company status: active

Roanoke, VA and Mt. Pleasant, SC https://firststringresearch.com/

Novel regenerative drug

University of Virginia
Virginia Commonwealth University

Cavion (formerly Tau Therapeutics) Charlottesville, VA and Cambridge, MA https://cavionpharma.com/

Company status: active

Determining the optimal dosing schedule for the commercialization of mibefradil in front-line glioblastoma

Grant Round 2 - March 2014

University of Virginia
Virginia Commonwealth University

Neoantigenics, Inc.

Company status: inactive

Charlottesville, VA

https://www.linkedin.com/company/neoantigenics-inc./

UVA-VCU partnership to develop radioimmunotherapeutic and imaging agents to a unique cellsurface target relevant for multiple human cancers

Virginia Commonwealth University University of Virginia

Gencia, LLC Charlottesville, VA Company status: active

http://genciabiotech.com/

Reversing bioenergetic deficits and improving cognitive function in Alzheimer's Disease

Virginia Polytechnic Institute and State University

University of Virginia

SphynKx Therapeutics, LLC Company status: inactive

Charlottesville, VA

https://www.linkedin.com/company/sphynkx-therapeutics/

Lead optimization of a SphK2 inhibitor for the treatment of CKD

Eastern Virginia Medical School University of Virginia

LifeNet Health Company status: active

Global Headquarters: Virginia Beach, VA

United States offices: Jacksonville, FL; Pensacola, FL; Renton, WA

Austria office: Vienna

https://www.lifenethealth.org/

Enhancement of healing in diabetic wounds using a decellularized dermal matrix

Grant Round 3 – August 2014

Virginia Commonwealth University Old Dominion University

Ultrasonic Probe, LLC

Glen Allen, VA

Company status: inactive

Ultrasonographic probe

Virginia Polytechnic Institute and State University University of Virginia

PhenoCHIP Technologies, LLC

Company status: inactive

(formerly Proteo Biosciences)

Blacksburg, VA

https://govtribe.com/vendor/phenochip-technologies-llc-blacksburg-va

PhenoCHIP-phenotype-based cell hierarchy and isolation platform

Old Dominion University Eastern Virginia Medical School

OncoSec Medical, Inc.

Company status: active

San Diego, CA and Pennington, NJ

https://oncosec.com/

Biomarker-driven optimization of IL-12 gene electrotransfer for the treatment of melanoma

Grant Round 4 - August 2015

Virginia Polytechnic Institute and State University University of Virginia

FirstString Research, Inc.

Company status: active

Roanoke, VA and Mt. Pleasant, SC https://firststringresearch.com/

Clinical trial of new drug in dogs to treat brain cancer in humans

Old Dominion University
Eastern Virginia Medical School

Embody, LLC Co

Vienna, VA

Company status: active

https://govtribe.com/vendor/embody-llc-vienna-va

Nanofabrication of tissue scaffolds

Virginia Polytechnic Institute and State University Virginia Commonwealth University

BioTherapeutics, Inc.

Company status: active

Blacksburg, VA

https://www.biotherapeuticsinc.com/

Optimizing oral delivery of BT-11 as a clinical candidate for treating inflammatory bowel disease

Virginia Commonwealth University University of Virginia

BrightSpec

Company status: active

Charlottesville, VA http://brightspec.com/

Three wave mixing technique for chiral analysis in continuous process manufacturing

George Mason University

Virginia Polytechnic Institute and State University

Ceres Nanosciences, Inc.

Company status: active

Manassas, VA

http://www.ceresnano.com/

Nanotrap® tick-panel test development

Grant Round 5 - December 2015

University of Virginia George Mason University Yale University

Cavion

Company status: active

Charlottesville, VA and Cambridge, MA

https://cavionpharma.com/

Development of a biomarker assay and protocol for the commercialization of mibefradil dihydrochloride as a first-line treatment for glioblastoma

Virginia Polytechnic Institute and State University University of Virginia

VoltMed, Inc.

Company status: active

Blacksburg, VA

https://www.linkedin.com/company/voltmed-inc./

INSPIRE to fight brain cancer

Grant Round 6 - October 2016

Virginia Polytechnic Institute and State University

University of Virginia

VoltMed, Inc. Blacksburg, VA Company status: active

https://www.linkedin.com/company/voltmed-inc./

Commercialization of INSPIRE brain cancer treatment

Virginia Polytechnic Institute and State University Virginia Commonwealth University

BioTherapeutics, Inc.

Company status: active

Blacksburg, VA

https://www.biotherapeuticsinc.com/

Development of BT-11: First-in-class oral therapeutic for Inflammatory Bowel Disease

George Mason University
Virginia Commonwealth University

Serpin Parma, LLC

Company status: active

Manassas, VA

http://www.serpinpharma.com/

Novel and potent anti-inflammatory drug with cardio-protective effects to treat myocardial injury and prevent heart failure

Eastern Virginia Medical School George Mason University

Sanyal Biotechnology, LLC

Company status: active

Virginia Beach, VA

https://www.sanyalbio.com/

Accelerating the commercialization of the Diamond™ mouse model of Nonalcoholic Steatohepatitis

Old Dominion University Eastern Virginia Medical School

Pulse Biosciences, Inc.

Company status: active

Hayward, CA

http://pulsebiosciences.com/

Translational research with nanosecond pulsed electric fields for immuno-oncology applications

Virginia Commonwealth University University of Virginia

Propagenix, Inc.

Company status: active

Rockville, MD

http://www.propagenix.com/

Bioengineering for the therapeutic delivery of massively expanded islet-derived human beta-cells

Grant Round 7 - July 2017

Virginia Commonwealth University, Virginia Polytechnic Institute and State University Inova George Mason University

Indivior, PLC Richmond, VA

http://indivior.com/

Company status: active

Novel Preventive Treatment Paradigm to Change the Standard of Care for Those Who Recover from Opioid Overdose

Virginia Polytechnic Institute and State University University of Virginia Carilion

BRAINBox Solutions

Company status: active

(Parent company: ImmunArray)

Richmond, VA

http://www.immunarray.com/brain-box/

Virginia Brain Injury Diagnosis and Monitoring Initiative

Eastern Virginia Medical School Virginia Commonwealth University

ReAlta Life Sciences, LLC

Company status: active

Norfolk, VA

https://www.sbir.gov/sbirsearch/detail/1430737

Development of peptide inhibitor of complement C1 as treatment for neonatal hypoxic-ischemic encephalopathy

Grant Round 8 – May 2018

Old Dominion University University of Virginia

Embody, LLC

Company status: active

Vienna, VA

https://govtribe.com/vendor/embody-llc-vienna-va

Biofabrication of Regenerative Musculoskeletal Therapeutics

Virginia Polytechnic Institute and State University University of Virginia

Continuum Biosciences, Inc.

Company status: active

Blacksburg, VA

https://www.sbir.gov/sbirsearch/detail/1454561

Development and commercialization of mitochondrial uncouplers

Virginia Commonwealth University
University of Virginia
Virginia Polytechnic Institute and State University

BrightSpec, Inc. Charlottesville, VA http://brightspec.com/ Company status: active

A major new chiral analysis technique for new drug discovery, development, and process control

Virginia Commonwealth University George Mason University

Serpin Pharma, LLC

Company status: active

Manassas, VA

http://www.serpinpharma.com/

Novel anti-inflammatory drug: strong neuroprotective properties for treatment of traumatic brain injury

Old Dominion University Eastern Virginia Medical School

LifeNet Health Company status: active

Global Headquarters: Virginia Beach, VA

United States offices: Jacksonville, FL; Pensacola, FL; Renton, WA

Austria office: Vienna

https://www.lifenethealth.org/

Tissue preparations for therapeutic use in cardiovascular applications

Virginia Commonwealth University University of Virginia

WynnVision, LLC

Midlothian, VA

Company status: active

https://www.sbir.gov/node/1220367

Preventing Catheter Associated Infections

Grant Round 9 - May 2019

Virginia Polytechnic Institute and State University University of Virginia

AgroSpheres, Inc. Company status: active

Charlottesville, VA

https://www.agrospheres.com/

AgroSpheres-Enabled Biological Fungicide

Virginia Commonwealth University University of Virginia Virginia Polytechnic Institute and State University

BrightSpec, Inc. Charlottesville, VA http://brightspec.com/ Company status: active

Rapid Drug Development Using Molecular Rotational Resonance (MRR) for Structure Analysis

University of Virginia George Mason University

Ceres Nanosciences, Inc.

Manassas, VA

https://www.ceresnano.com/

Company status: active

Nanotrap® Liquid Biopsy Collection Device (LBC) for Cancer Diagnostics

University of Virginia Eastern Virginia Medical School

Perthera, Inc McLean, VA

https://perthera.com/

Company status: active

Implementation and Clinical Impact of a Next Generation Precision Oncology Platform

D.2 Summary of Economic Returns to Date

	Collaborator s	Amount of Grant Award	Matching Funds	Follow on Funding	Job Creation (ETE)				
rand Round 1 - December, 2013									
VT, VCU	BioTherapeutics Inc. Blacksburg, VA	\$400,000	\$400,000	\$10,000,000	15				
UVA, GMU	Tau Therapeutics (Cavion LLC) Charlottesville, VA	\$200,000	\$238,000	\$26,100,000	2.5				
VT, UVA	First String Research Roanoke, VA and Mt. Pleasant, SC	\$200,000	\$1,000,000	\$3,000,000	10				
UVA, VCU	HemoShear LLC Charlottesville, VA	\$450,000	\$800,000	\$14,000,000	12				
	Subtotal Round 1	\$1,250,000	\$2,438,000	\$53,100,000	37				
nd Round 2 - I	March, 2014								
VCU, UVA	Gencia, LLC Charlottesville, VA	\$400,000	\$400,000	\$8,800,000	2				
UVA, VCU	Neoantigenics LLC Charlottesville, VA	\$348,729	\$2,000,000	\$3,000,000	1				
VT, UVA	SphynKx Therapeutics Charlottesville, VA	\$400,000	\$400,000	\$150,000	4				
EVMS, UVA	LifeNet Health Virginia Beach, VA	\$255,000	\$255,000	\$5,000	3				
	Subtotal Round 2	\$1 ,403,729	\$ 3,055,000	\$11,955,000	1				
nd Round 3 - /	August, 2014								
VT, UVA	PhenoCHIP Blacksburg, VA	\$270,000	\$386,000	\$450,000	5				
ODU, EVMS	OncoSec Medical San Diego, CA	\$585,000	\$2,750,000	\$8,700,000	3.5				
VCU, ODU	US Probe Glen Allen, VA	\$406,000	\$536,000	\$450,000	5.5				
	Subtotal Round 3	\$1,261,000	\$3,672,000	\$9,600,000	5				
nd Round 4 - A	August, 2015								
GMU, VT	Ceres Nanosciences Manassas, VA	\$500,000	\$500,000	\$5,000,000	13				
VT, UVA	First String Research Roanoke, VA and Mt. Pleasant, SC	\$290,000	\$500,000	\$3,500,000	2				
ODU, EVMS	Embody LLC Norfolk, VA	\$634,500	\$725,000	\$3,600,000	5				
VT, VCU	BioTherapeutics Inc. Blacksburg, VA	\$400,000	\$400,000	\$2,500,000	14				
GMU, VT	BrightSpec, Inc Charlottesv⊪e, VA	\$400,000	\$400,000	\$2,150,000	6				
	d Bandana and an	Sunday - 1 - 1 - 1	200						

27

\$2,224,500

\$2,525,000

\$16,750,000

Subtotal Round 4

Grand Ro	ound 5 -	December.	2015
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UVA, GMU	Cavion Charlottesville, VA	\$306,985	\$352,862	\$26,100,000	2.5
VT, UVA	VoltMed, Inc. Blacksburg, VA	\$380,000	\$1,200,000	\$2,000,000	12
	Subtotal Round 5	\$686,985	\$1,552,862	\$28,100,000	14.5

Grand Round 6 - October, 2016

UI a	and Round 6 - October, 2016					
Open	VT, UVA	VoltMed, Inc. Blacksburg, VA	\$800,000	\$800,000	\$3,894,000	8
	VT, VCU	BioTherapeutics Inc. Blacksburg, VA	\$800,000	\$800,000	\$10,600,000	12
	GMU, VCU	Serpin Pharma Manassas, VA	\$400,000	\$3,400,000	\$2,700,000	4.5
	EVMS, GMU	Sanyal Biotechnology Virginia Beach, VA	\$100,000	\$100,000	\$580,000	3
	ODU, EVMS	Pulse Biosciences Burlingame, CA	\$300,000	\$300,000	\$5,361,863	2
	VCU, UVA	Propagenix Rockville, MD	\$425,000	\$1,200,000	\$220,000	1
		Subtotal Round 6	\$2,825,000	\$6,600,000	\$23,355,863	29.5

Grand Round 7 - July, 2017

Open	VCU, VT, Inova	Indivior, Inc. Richmond, VA	\$500,000	\$500,000	\$0	3
Open	UVA, VT, Carilion	BRAINBox, LLC Richmond, VA	\$500,000	\$500,000	\$0:	2
	EVMS, VCU	ReAlta Life Sciences, LLC Norfolk, VA	\$332,352	\$400,000	\$12,000,000	4
		Subtotal Round 7	\$1,332,352	\$1,400,000	\$12,000,000	9

Grand Round 8 - June, 2018

	VCU-UVA-VT	BrightSpec, Inc. Charlottesville, VA	\$400,000	\$400,000	\$1,850,000	2
Open	VT, UVA	Continuum Biosciences, Blacksburg, VA	\$400,000	\$800,000	\$3,714,000	8
Open	ODU, UVA	Embody, LLC Norfalk, VA	\$800,000	\$2,400,000	\$220,000	1
Open	ODU, EVMS	LifeNet Health Virginia Beach, VA	\$250,000	\$250,000	\$0	3
Open	GMU, VCU	Serpin Pharma Manassas, VA	\$350,000	\$350,000	\$1,200,000	1
Open	VCU, UVA	WynnVision, LLC Richmond, VA	\$510,000	\$1,491,266	\$1,754,910	3
[Subtotal Round 8	\$2,710,000	\$5,691,266	\$8,738,910	18

Grand Round 9 - April, 2019

1		<u> </u>				
Open		AgroSpheres, Inc.				
Орсп	VT UVA	Agrooprieres, inc.	\$600.000	#C00.000	#4 050 000	
	V 1, U VA	OL - 1-11	\$600,000	\$600.000	\$4.050.000	4
		Charlottesville, VA	, ,		<i>+</i> .,,	,

Open	VCU, UVA, VT	BrightSpec Inc Vilginia Biosciences H	ealth\$ Resea	rch Samponat	ion \$0	0	26
Open	UVA, GMU	Ceres Nanoscience, Inc.	\$600,000	\$1,200,000	\$0	4	

Appendix E: Grant Funding Rounds

E.1 Grant Round 9: Call for Proposals



FOR IMMEDIATE RELEASE

Media Contact:

A.J. Guenther ConnellyWorks, Inc. (571) 323-2585 ext. 2130 aj@connellyworks.com

Virginia Catalyst Announces Round Nine of Grant Funding

Organization continues to connect industry and academic research for the benefit of Virginia's bioscience sector

RICHMOND, VA – August 14, 2018 – The Virginia Biosciences Health Research Corporation (VBHRC), now known as Virginia Catalyst, today announced that it is accepting applications/letters of intent (LOIs) for round nine of grants to fund the development and commercialization of life science projects that address major unmet needs for improving human health.

Virginia Catalyst awards these funds to help accelerate translational research in the Commonwealth of Virginia. The awards, which range from \$200,000 to \$800,000, help fund collaborative efforts between industry and Virginia research universities with the goal of:

- Funding innovative, collaborative, translational research projects that elevate the level of sponsored research at Virginia's universities and have the potential to significantly improve human health and create high value jobs in the Commonwealth
- Accelerating commercialization of Virginia research university inventions and discoveries and to achieve competitive critical mass through robust collaborations of Virginia research universities and industry

Letters of intent (LOI) must be received by November 15, 2018 at 5:00 PM EST. Projects that meet criteria will be invited to submit a full application. Awards will be announced in March 2019. The LOI submission form and application template, as well as grant criteria, are available on the Virginia Catalyst website (www.virginiacatalyst.org).

"Virginia's entrepreneurial spirit continues to inspire our work," said Mike Grisham, CEO, Virginia Catalyst. "Through the first eight funding rounds, Virginia Catalyst has seen companies and research institutions work together to create high-paying jobs that boost Virginia's overall economy. These funds help bolster Virginia's life sciences sector while also developing technologies that tangibly improve citizens' lives. We look forward to supporting our research investigators and entrepreneurs in achieving milestones that will result in follow-on funding and build sustainable businesses."

About Virginia Catalyst

Virginia Biosciences Health Research Corporation (VBHRC), known as Virginia Catalyst, has a vision of advancing life sciences throughout Virginia as a means of addressing large unmet medical needs to improve human health and to create high-paying jobs throughout the Commonwealth. Funded by the Virginia General Assembly's General fund, the University of Virginia, Virginia Commonwealth University, Virginia Tech, Eastern Virginia Medical School, George Mason University, Old Dominion University, and William and Mary, Virginia Catalyst has funding opportunities to support collaborative projects in the Commonwealth and is home to the Virginia Neuroscience Initiative. For more information, visit www.virginiacatalyst.org.

E.2 VBHRC Hosted NIH Event



FOR IMMEDIATE RELEASE

Media Contact:

A.J. Guenther ConnellyWorks, Inc. (571) 323-2585 ext. 2130 aj@connellyworks.com

Virginia Catalyst Announces Luncheon to Discuss National Institute on Drug Abuse Small Business Innovation Research Funding Opportunities

Deloitte Consulting to also unveil research focused on neuroscience and addiction in the Commonwealth of Virginia

RICHMOND, VA – January 15, 2019 – The Virginia Biosciences Health Research Corporation (VBHRC), now known as Virginia Catalyst, today announced that it is hosting a luncheon, in conjunction with Virginia Bio and CIT, featuring the National Institute on Drug Abuse (NIDA), Small Business Innovation Research (SBIR) program, and Deloitte Consulting. As part of the

event, scheduled for January 23 from 11:30am-1:00pm, NIDA's Victor Prikhodko, Business Advisor to the Office of Translational Initiatives and Program Innovations (OTIPI), will discuss NIDA SBIR's funding opportunities, including the recently released "HEAL Initiative: America's Startups and Small Businesses Build Technologies to Stop the Opioid Crisis" RFA, and present some best practices for strong applications.

In addition, Jon Baba, a Principal in Deloitte's Global Public Sector Practice, will discuss Deloitte's findings and strategic recommendations for neuroscience and addiction in the Commonwealth of Virginia. The Virginia Catalyst recently engaged Deloitte Consulting to explore and validate Virginia's unmet addiction needs and benchmark Virginia's competitive strengths and resources, and this presentation will unveil those findings.

"NIDA SBIR will award more than \$45 million in FY2019 to small businesses and researchers," said Mike Grisham, CEO, Virginia Catalyst. "This funding will go to companies for the purpose of developing new drug discovery and development-enabling technologies; useful research tools for conducting basic research; as well as medical devices and mobile health applications in the areas of addiction and abuse broadly. This presentation, combined with Deloitte Consulting's findings, will make this luncheon an important event for any organization looking to conduct translational research in Virginia."

Logistical details about the event are below:

Date: Wednesday, January 23, 2019

Time: 11:30am-1:00pm

Location:

Founders Conference Room Virginia Bio+Tech Center 800 East Leigh Street Richmond, Virginia

If you are interested in a complimentary seat to this event, register through the <u>Virginia Bio</u> website.

About Virginia Catalyst

Virginia Biosciences Health Research Corporation (VBHRC), known as Virginia Catalyst, has a vision of advancing life sciences throughout Virginia as a means of addressing large unmet medical needs to improve human health and to create high-paying jobs throughout the Commonwealth. Funded by the Virginia General Assembly's General fund, the University of Virginia, Virginia Commonwealth University, Virginia Tech, Eastern Virginia Medical School, George Mason University, Old Dominion University, and William and Mary, Virginia Catalyst has funding opportunities to support collaborative projects in the Commonwealth and is home to the Virginia Neuroscience Initiative. For more information, visit www.virginiacatalyst.org.

E.3 Grant Round 9: Awarded Projects



FOR IMMEDIATE RELEASE

Media Contact:

A.J. Guenther
ConnellyWorks, Inc.
(571) 323-2585 ext. 2130
aj@connellyworks.com

Virginia Catalyst Awards \$2.1 Million in Grants to Fund Collaborative Bioscience Research Four winning projects to address cancer diagnostics, AgBiotech and drug development

RICHMOND, VA – June 4, 2019 – The Virginia Catalyst, formerly known as the Virginia Biosciences Health Research Corporation (VBHRC), today announced that it has awarded \$2.1 million in grants to four life and bioscience projects in the Commonwealth of Virginia. These grants, which will be met with nearly \$3.2 million in matching funds from partner companies, were awarded as Round 9 of Virginia Catalyst's ongoing mission to stimulate economic development by promoting collaborative projects that address large, unmet needs for improving human health, and that can create high-paying jobs in the Commonwealth.

"As national and global leaders in life sciences, Virginia's research universities continue to foster collaborations, to combine their intellectual and scientific expertise with industry to achieve meaningful results," said Mike Grisham, CEO, Virginia Catalyst. "We are excited to continue our mission of supporting collaborations in Virginia's biosciences. The critical mass achieved by these collaborations provides Virginia with competitive advantages over other states and has resulted in significant outside capital being invested in Virginia to finance the commercialization of Virginia's innovations, while creating high-paying jobs for the Commonwealth."

Through this ninth round of funding, Virginia Catalyst has awarded 31 grants totaling over \$15.9 million, resulting in a combined \$33.4 million in matching funds and an additional \$138 million in follow-on funding.

The awards, which range from \$200,000 to \$800,000, help fund collaborative efforts between industry and Virginia research universities with the goal of:

- Funding innovative, collaborative, translational research projects that elevate the level of sponsored research at Virginia's universities and have the potential to significantly improve human health and create high value jobs in the Commonwealth
- Accelerating commercialization of Virginia research university inventions and discoveries and to achieve competitive critical mass through robust collaborations of Virginia research universities and industry

Round 9 of Grant Funding project winners:

Project Focus: AgroSpheres-Enabled Biological Fungicide

- Company: AgroSpheres, Inc. (Charlottesville, VA)
- University collaborators: Virginia Tech and University of Virginia
- Funding amount: \$600,000
- Matching funds: \$600,000 provided by AgroSpheres, Inc.

<u>Project Focus: Rapid Drug Development Using Molecular Rotational Resonance (MRR) for Structure Analysis</u>

- Company: BrightSpec, Inc. (Charlottesville, VA)
- University collaborators: Virginia Commonwealth University, University of Virginia, Virginia Tech
- Funding amount: \$400,000
- Matching funds: \$400,000 provided by BrightSpec, Inc.

Project Focus: Nanotrap® Liquid Biopsy Collection Device (LBC) for Cancer Diagnostics

- Company: Ceres Nanosciences, Inc. (Manassas, VA)
- University collaborators: University of Virginia and George Mason University
- Funding amount: \$600,000
- Matching funds: \$1.2 million provided by GreyBird Ventures via Ceres Nanosciences, Inc.

<u>Project Focus: Implementation and Clinical Impact of a Next Generation Precision Oncology</u> <u>Platform</u>

- Company: Perthera, Inc. (McLean, VA)
- University collaborators: University of Virginia and Eastern Virginia Medical School
- Funding amount: \$500,000
- Matching funds: \$1,000,000 provided by Pilot Growth and Equity via Perthera, Inc.

Supporting Quotes

"AgroSpheres is delighted to be selected by Virginia Catalyst for a Round 9 Award. Our goal is to advance human health through agricultural practices by developing safer alternatives to chemical pesticides without sacrificing cost and efficacy. For this award, our research team led by Ameer Shakeel will work collaboratively with Dr. Kester of UVA and Dr. Sherif of Virginia Tech to develop a broad-spectrum fungicide that is better for the environment. The support from VBHRC is a true testament to Virginia's goal of becoming the best in the nation for

translational research. Virginia has all the resources necessary to become a hub for AgBiotech thanks to our state-of-the-art research facilities, a thriving entrepreneurial ecosystem, and our hardworking farmers. This award will help accelerate our path to market and significantly improve our ability to attract additional investments. We are looking forward to growing our company, right here in Charlottesville, VA." — Payam Pourtaheri, Co-Founder and Chief Operating Officer of AgroSpheres

"The support of the Catalyst and collaboration among VCU, UVA, VT and BrightSpec resulted in the first breakthroughs to our pharmaceutical discovery and process R&D customer segments. The current award extends that work into new synthetic routes for small drug molecule APIs." – Robert W. Lloyd, CEO, BrightSpec, Inc.

"The Virginia Catalyst program is invaluable for the biosciences industry in Virginia. The program is dramatically accelerating our product development efforts by providing non-dilutive funding and a mechanism through which we can leverage the world class clinical and translational research expertise of the University of Virginia School of Medicine and George Mason University. We are extremely grateful to be able to participate in such a program." — Robbie Barbero, Chief Business Officer of Ceres Nanosciences.

"Pancreatic cancer is the third most common cause of cancer deaths in the U.S. and over the past 40 years treatment with conventional therapy approaches has not significantly improved survival. We are beginning a new age of 'precision oncology' and 'personalized medicine', in which we can analyze the molecular make-up of each patient's tumor and prescribe a specific treatment for them. Perthera, Inc. has the most advanced platform for this precision oncology approach and is excited to work with the prestigious institutions of Eastern Virginia Medical School and the University of Virginia to collectively advance these innovative precision oncology efforts." — Project Team Lead Dr. Todd Bauer, MD, Professor of Surgery, University of Virginia. "This Virginia Catalyst grant will enable us to enhance the care of cancer patients, drive breakthroughs in precision medicine, and hire individuals who can build on our organizations' united mission to dramatically advance patient outcomes." — Gary L. Gregory, Perthera's President & CEO

About Virginia Catalyst

Virginia Biosciences Health Research Corporation (VBHRC), known as Virginia Catalyst, has a vision of advancing life sciences throughout Virginia as a means of addressing large unmet medical needs to improve human health and to create high-paying jobs throughout the Commonwealth. Funded by the Virginia General Assembly's General fund, the University of Virginia, Virginia Commonwealth University, Virginia Tech, Eastern Virginia Medical School, George Mason University, Old Dominion University, and William and Mary, Virginia Catalyst has funding opportunities to support collaborative projects in the Commonwealth and is home to the Virginia Neuroscience Initiative. For more information, visit www.virginiacatalyst.org.

E.4 Grant Round 10: Call for Proposals



FOR IMMEDIATE RELEASE

Media Contact:

A.J. Guenther ConnellyWorks, Inc. (571) 323-2585 ext. 2130 aj@connellyworks.com

Virginia Catalyst Announces Round Ten of Grant Funding

Organization continuing to support collaborations between Virginia research universities and industry

RICHMOND, VA – April 15, 2019 – The Virginia Biosciences Health Research Corporation (VBHRC), now known as Virginia Catalyst, today announced that it is accepting applications/letters of intent (LOIs) for round ten of grants to fund the development and commercialization of life science projects that address major unmet needs for improving human health and advance Virginia's economy.

Virginia Catalyst awards these funds to help accelerate translational research and the commercialization of Virginia's innovations. The awards, which range from \$200,000 to \$800,000, help fund collaborative efforts between industry and Virginia research universities with the goal of:

- Funding innovative, collaborative, translational research projects that elevate the level of sponsored research at Virginia's universities and have the potential to create high value jobs in the Commonwealth
- Accelerating commercialization of Virginia research university inventions and discoveries and to achieve competitive critical mass through robust collaborations of Virginia

Letters of intent (LOI) must be received by July 10, 2019 at 5:00 PM EDT. Projects that meet criteria will be invited to submit a full application by August 28, 2019. Applications will be reviewed and scored by an independent review team of scientists, venture capitalists and CEOs of Virginia-based life science companies. The top eight applicants will be invited to present the projects in person on Thursday, September 26th. Awards will be announced in October 2019.

The LOI submission form and application template, as well as grant criteria, are available on the Virginia Catalyst website (www.virginiacatalyst.org).

"We are proud of being a stimulus for industry to work more closely with our research universities to drive economic growth," said Mike Grisham, CEO, Virginia Catalyst. "Virginia Catalyst continues to support teams of investigators from research institutions and industry to move their discoveries in the life sciences from laboratories to commercialization. The creation of sustainable companies and high-paying jobs help boost Virginia's overall economy, support life sciences sector, and tangibly improve citizens' lives. Cumulatively through the first nine funding rounds, Virginia Catalyst funded a total of \$15.9 million to 31 collaborative projects. Together, these projects have created over 150 new jobs and have attracted an additional \$140 million of investment capital from venture capital, private equity, corporations and government agencies including DARPA, NIH and NSF. We are proud to continue supporting research investigators and entrepreneurs in achieving milestones that will result in follow-on funding and build sustainable businesses."

About Virginia Catalyst

Virginia Biosciences Health Research Corporation (VBHRC), known as Virginia Catalyst, has a vision of advancing life sciences throughout Virginia as a means of addressing large unmet medical needs to improve human health and to create high-paying jobs throughout the Commonwealth. Funded by the Virginia General Assembly's General fund, the University of Virginia, Virginia Commonwealth University, Virginia Tech, Eastern Virginia Medical School, George Mason University, Old Dominion University, and William and Mary, Virginia Catalyst has funding opportunities to support collaborative life science projects in the Commonwealth. For more information, visit www.virginiacatalyst.org.

End of VBHRC Virginia Catalyst: General Assembly Report FY19



Financial Statements

June 30, 2019

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Certified Public Accountants

Independent Auditor's Report

Board of Directors Virginia Biosciences Health Research Corporation Richmond, Virginia

Report on the Financial Statements

We have audited the accompanying financial statements of Virginia Biosciences Health Research Corporation, which comprise the statement of financial position as of June 30, 2019, the related statements of activities, functional expenses, and cash flows for the year then ended, and the related notes to the financial statements.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of Virginia Biosciences Health Research Corporation as of June 30, 2019, and the changes in its net assets and its cash flows for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Report on Summarized Comparative Information

We have previously audited Virginia Biosciences Health Research Corporation's 2018 financial statements, and we expressed an unmodified audit opinion on those audited financial statements in our report dated October 29, 2018. In our opinion, the summarized comparative information presented herein as of and for the year ended June 30, 2018, is consistent, in all material respects, with the audited financial statements from which it has been derived.

Richmond, Virginia October 7, 2019

Mitchell Wiggins

Statement of Financial Position June 30, 2019, with Comparative Totals as of June 30, 2018

Assets		2019	2018		
Current Assets					
Cash and cash equivalents	\$	3,883,102	\$ 4,337,007		
Pledges receivable, net, current portion					
Commonwealth of Virginia		3,750,000	3,750,000		
Member universities		350,000	200,000		
Total current assets	**********	7,983,102	8,287,007		
Long-Term Assets					
Pledges receivable, net, less current portion					
Commonwealth of Virginia		-	3,750,000		
Total assets	\$	7,983,102	\$ 12,037,007		
Liabilities and Net Assets					
Current Liabilities					
Accounts payable	\$	610,101	\$ 388,459		
Net Assets					
Net assets without donor restrictions		3,623,001	4,148,548		
Net assets with donor restrictions		3,750,000	7,500,000		
Total net assets		7,373,001	11,648,548		
			 		
Total liabilities and net assets	\$	7,983,102	\$ 12,037,007		

Statement of Activities Year Ended June 30, 2019, with Comparative Totals for the Year ended June 30, 2018

	Net Assets	Net	t Assets With		. 1	
	Without	Donor		To		
Revenue	Donor	K	estrictions	2019	****	2018
Contributions, Virginia General Assembly	ተ	φ.		.	φ.	< 500 000
Program support	\$ -	\$	-	\$ -	\$	
General and administrative support	-		•			1,000,000
Contributions, Member Universities						
College of William & Mary	50,000		-	50,000		50,000
Eastern Virginia Medical School	50,000		-	50,000		50,000
George Mason University	50,000		-	50,000		50,000
Old Dominion University	50,000		-	50,000		50,000
University of Virginia	50,000		-	50,000		50,000
Virginia Commonwealth University	50,000		-	50,000		50,000
Virginia Polytechnic Institute and State University	50,000		•	50,000		50,000
Other income			.			78,910
Interest income	4,109		-	4,109		5,196
	354,109	······································	-	354,109	······	7,934,106
Net Assets Released from Restrictions						
Satisfaction of time restrictions	3,750,000		(3,750,000)	-		••
Total support and revenues	4,104,109		(3,750,000)	354,109		7,934,106
Expenses						
Program services	4,519,988		-	4,519,988		2,611,882
Management and general	109,668		-	109,668		81,889
Total expenses	4,629,656		-	4,629,656		2,693,771
Change in net assets	(525,547)		(3,750,000)	(4,275,547))	5,240,335
Net assets, beginning	4,148,548		7,500,000	11,648,548		6,408,213
Net assets, ending	\$ 3,623,001	\$	3,750,000	\$ 7,373,001	\$	11,648,548

Statement of Functional Expenses Year Ended June 30, 2019, with Comparative Totals for the Year Ended June 30, 2018

	Pr	Program		Management		To	tals	
	Se	rvices	and	General		2019		2018
Accounting services	\$	_	\$	31,775	\$	31,775	\$	28,834
Conferences		6,610		1,598		8,208		7,380
Consulting services		521,386		-		521,386		
Grant expenses	3	,654,508				3,654,508		2,371,884
Legal expenses		-		27,239		27,239		27,979
Marketing and promotion		4,379				4,379		5,100
Meals and entertainment		1,047				1,047		1,383
Memberships and sponsorships		21,250		5,998		27,248		18,393
Miscellaneous		-		4,139		4,139		8,628
Office expenses		-		5,245		5,245		291
Parking		-		2,353		2,353		1,880
Payroll taxes		18,205		1,529		19,734		10,839
Occupancy		•		3,375		3,375		, <u>.</u>
Salaries and wages		288,300		25,700		314,000		200,000
Telephone		*		717		717		1,412
Travel and lodging		4,303		-		4,303		9,768
	\$ 4	,519,988	\$	109,668	\$	4,629,656	\$	2,693,771

Statement of Cash Flows Year ended June 30, 2019

Cash Flows from Operating Activities	
Change in net assets	\$ (4,275,547)
Adjustments to reconcile change in net assets to net cash and cash equivalents provided by (used in) operating activities	
Changes in operating assets	
Pledges receivables	3,600,000
Changes in operating liabilities	
Accounts payable	221,642
Net cash and cash equivalents (used in) operating activities	(453,905)
Cash and cash equivalents, beginning	4,337,007
Cash and cash equivalents, ending	\$ 3,883,102

Notes to Financial Statements

June 30, 2019

Note 1. Nature of Organization and Summary of Significant Accounting Policies

Nature of organization

Virginia Biosciences Health Research Corporation (the Corporation) was organized as a not-for-profit corporation in 2013 and is operated for educational and research purposes. The mission of the Corporation is to foster life sciences research at universities located within the Commonwealth of Virginia by providing resources for partnering between public and private institutions and non-profit universities. The five founding institutions are Eastern Virginia Medical School, George Mason University, University of Virginia, Virginia Commonwealth University, and Virginia Polytechnic Institute and State University. Old Dominion University was admitted in December 2013 and College of William & Mary was admitted in October 2016. Research is to be centered in three focus areas: bioinformatics and medical informatics, point of care diagnostics, and drug discovery and delivery.

A summary of the Corporation's significant accounting policies follows:

Basis of accounting

The financial statements are presented on the accrual basis of accounting.

Financial statement presentation

Under current accounting standards, the Corporation is required to report information regarding its financial position and activities according to two classes of assets: net assets without donor restrictions and net assets with donor restrictions. The net asset classes are summarized as follows:

Net assets without donor restrictions include board designated and other funds without donor restrictions. The funds without donor restrictions include revenue and expenses used currently for the general operations of the Corporation. Contributions that are with donor restrictions are reported as increases in net assets without donor restrictions if the donor restrictions expire in the fiscal year in which the contributions are recognized.

Net assets with donor restrictions include contributions restricted by donor designation or time restrictions and are reported as increases in net assets with donor restrictions. When a restriction expires either with the passage of time or by actions of the Corporation, contributions with donor restrictions are released and reclassified to net assets without donor restrictions. Net assets with donor restrictions consist of pledged contributions due in future years.

Cash and cash equivalents

The Corporation considers all highly liquid investments with an initial maturity of three months or less to be cash equivalents.

Notes to Financial Statements

June 30, 2019

Note 1. Nature of Organization and Summary of Significant Accounting Policies (continued)

Pledges receivable

Pledges are recognized when the donor makes a promise to give to the Corporation that is, in substance, unconditional. Contributions that are restricted by the donor are reported as increases in net assets with donor restrictions. When a restriction expires, net assets with donor restrictions are reclassified to net assets without donor restrictions and reported in the statement of activities as net assets released from restrictions.

Revenue recognition

The Corporation recognizes revenue in the year it is earned.

Use of estimates

The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from these estimates.

Income taxes

The Corporation is exempt from federal income taxes under Section 501(c)(3) of the Internal Revenue Code and is not classified as a Private Foundation.

The Financial Accounting Standards Board issued guidance on accounting for uncertainty in income taxes. Management evaluated the Corporation's tax positions and concluded that the Corporation had taken no uncertain tax positions that require adjustment to the financial statements to comply with the provisions of this guidance. Currently, the Corporation's tax years for the years ending from 2015 through 2017 are open and subject to income tax examinations by the taxing authorities.

The Corporation includes penalties and interest assessed by income taxing authorities in management and general expenses. The Corporation did not have penalties and interest relating to income taxes for the years ended June 30, 2019 and 2018.

Recently issued accounting standards

The Corporation adopted FASB ASU No. 2016-14 in the year ended June 30, 2019. The new standards change the following aspects of the financial statements:

- The unrestricted net asset class has been renamed net assets without donor restrictions:
- The temporarily restricted and permanently restricted net asset classes have been combined into a single net asset class called net assets with donor restrictions:

Notes to Financial Statements

June 30, 2019

Note 1. Nature of Organization and Summary of Significant Accounting Policies (continued)

- The financial statements include expenses by nature and function;
- Investment expenses are reported net of investment returns; and
- The financial statements include a disclosure about liquidity and availability of resources (Note 5).

Note 2. Concentration of Credit Risk

The Corporation maintains its cash balances in one financial institution and the accounts, at times, may exceed federally insured limits.

Note 3. Concentration of Revenue

The Corporation receives the majority of its funding from appropriations approved by the General Assembly of the Commonwealth of Virginia. Funding is typically granted for a two-year period as stipulated in the budget of the Commonwealth. These funds are net assets with donor restrictions and will be released in time through June 30, 2020. The funding is to be used to support the mission of the Corporation to capture and perform research in biosciences, as well as promote the development of bioscience infrastructure tools which can be used to facilitate additional research activities.

Note 4. Pledged Contributions Receivable

The Corporation's policy is to record only written pledged contributions receivable. Management estimates that no allowance for doubtful accounts is required.

The pledged contributions receivable as of June 30, 2019, are as follows:

Commonwealth of Virginia	\$ 3,750,000
College of William & Mary	50,000
Eastern Virginia Medical School	50,000
George Mason University	50,000
Old Dominion University	50,000
University of Virginia	50,000
Virginia Commonwealth University	50,000
Virginia Polytechnic Insitute and State University	 50,000
	\$ 4,100,000

Notes to Financial Statements

June 30, 2019

Note 5. Liquidity and Availability

Financial assets available for general expenditure that is, without donor or other restrictions limiting their use, within one year of June 30, 2019 are:

Financial assets at year end:	 2019
Cash and cash equivalents	\$ 3,883,102
Pledges receivable	 4,100,000
Total financial assets	7,983,102
Less board designations:	
Operating reserves	 (180,000)
Financial assets available to meet general	
expenditures over the next twelve months	\$ 7,803,102

The board designation for operation reserves is in place to ensure the Corporation's ongoing and future viability to withstand the impact of economic downturns and invest in strategic opportunities. The Corporation only holds liquid assets consisting of cash and cash equivalents. The Corporation uses a budgeting process to manage its cash flow and liquidity needs.

Note 6. Functional Expenses

The cost of providing various programs and other activities has been summarized on a functional basis in the statement of functional expenses. Accordingly, certain categories of expenses are attributed to program or supporting functions. Therefore, expenses require allocation on a reasonable basis that is consistently applied. The primary indirect expenses allocated are payroll taxes and salaries and wages. These are allocated based on an estimated percentage of time spent in each functional area.

Note 7. Prior Year Summarized Comparative Information

The financial statements include certain prior year summarized comparative information in total but not by net asset class. Such information does not include sufficient detail to constitute a presentation in conformity with generally accepted accounting principles. Accordingly, such information should be read in conjunction with the Corporation's financial statements for the year ended June 30, 2018, from which the summarized information was derived.

Note 8. Subsequent Events

Management has evaluated subsequent events through October 7, 2019, the date which the financial statements were available for issue.

Virginia Biosciences Health Research Corporation Fiscal Year 2020 Budget	on Fiscal Year 2019	Fiscal Year 2020
	ACTUAL	Proposed Budget
Income		
4005 - Program support	3,750,000	3,750,000
4010 - General and admin support		
4000 · Virginia General Assembly	3,750,000	3,750,000
4100 · Member University Contributions		
4110 · Eastern Va Medical School	50,000	50,000
4125 · George Mason University	50,000	50,000
4131 · Old Dominion University	50,000	50,000
4130 University of Virginia	50,000	50,000
4120 · Virginia Commonwealth	50,000	50,000
4105 · Virginia Tech	50,000	50,000
4135 - William and Mary	50,000	50,000
Total 4100 · Member University Contributions	350,000	350,000
4200 - Other Sources (Interest income)	4,109	· -
Total	I Income 4,104,109	4,100,000
Expenses Program Expenses:	41	
5120 - Collaborative Grant Program-Industry/Research Unive		
5120.6 Round 6	241,410	685,000
5120.7 Round 7	207,077	736,564
5120.8 Round 8	1,855,834	734,166
5120.9 Round 9	475,000	1,190,000
5120.10 Round 10	<u> </u>	1,200,000
Total 5120 Collaborative Grant Program	2,779,321	4,545,730
5290 - VNI Project Management		
5139 - VNRN		
5220 - VNI Project Manager	206,519	102,000
5240 - Administative support	66,468	48,000
5230 - Marketing	2,986	6,000
5250 - Travel	4,214	6,000
Total Virginia Neuroscience Initiative	280,187	162,000
5400 - Infrastructure for Neuroscience Addiction		
5410 - Consulting services - Deloitte	497,182	-
5410 - Consulting services - G to G	24,205	-
	- :	

Total direct program expenses

521,387 3,580,895

4,707,730

Virginia Biosciences Health Research Corporation Fiscal Year 2020 Budget

iscal Year 2020 Budget	Fiscal Year 2019	Fiscal Year 2020
	ACTUAL	Proposed Budget
6000 · Support and development		
6200 Salaries and Benefits		
6210 · Salaries and Wages	314,000	315,000
6215 · Payroll Taxes	19,734	20,000
Total 6200 · Salaries and Benefits	333,734	335,000
6400 · Program development		
6405 · Advertising/press releases	4,379	5,000
6415 - Conferences	6,610	7,500
6420 · Meals and Entertainment	397	1,000
6430 · Memberships and sponsorships	21,250	25,000
6499 · Other program development exp.	-	800
6425 · Travel and lodging	4,303	5,000
Total 6400 · Program development	36,939	44,300
Total Support and development	370,673	379,300
Total Program Expenses	3,951,568	5,087,030
6005 · General and administrative		
6010 · Accounting services	22,275	24,000
6020 · Audit and tax returns	9,500	10,000
6030 · Board of Directors Expense	-	1,000
6430 Memberships and sponsorships	5,998	
6064 - Mileage	279	*
5255 · Conferences	1,598	
6440 - Database	2,539	
6445 - Web Site	1,090	400
6050 · Legal Expenses	26,210	25,000
6099 · Miscellaneous operating expense	229	•
6055 · Office and Computer Supplies	4,329	1,000
60XX - Rent	3,375	4,000
6065 · Parking	2,353	2,000
6070 · Postage	•	200
6080 · Telephone	498	1,250
Total 6005 · General and administrative	80,273	68,850
Total Expenses	4,031,841	5,155,880
Current year income over (under) expenses	72,268	(1,055,880)

Virginia Biosciences Health Research Corporation Fiscal Year 2020 Budget

Fiscal Year 2020 Budget	Fiscal Year 2019	Fiscal Year 2020
	ACTUAL	Proposed Budget
Current year income over (under) expenses		(1,055,880)
Other Sources and Uses of Funds:		
Other sources		
Committed project funds carryforward		3,780,730
Other uses of funds		
Funds committed for future years		2,535,000
Operating reserve		180,000
7	Total uses of funds	2,715,000
Ending balance		9,850