



COMMONWEALTH of VIRGINIA

STATE COUNCIL OF HIGHER EDUCATION FOR VIRGINIA

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Peter Blake
Director

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November 1, 2019

The Honorable Ralph S. Northam
Governor, Commonwealth of Virginia
Patrick Henry Building, Third Floor
Richmond, VA 23218

The Honorable Thomas K. Norment, Jr.
Co-Chair Senate Committee on Finance
P.O. Box 6205
Williamsburg, VA 23188

The Honorable Emmett W. Hanger, Jr.
Co-Chair Senate Committee on Finance
P.O. Box 2
Mount Solon, VA 22843-0002

The Honorable S. Chris Jones
Chair, House Committee on Appropriations
P.O. Box 5059
Suffolk, Virginia 23435

Re: Virginia Research Investment Committee

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

As Chair of the Virginia Research Investment Committee (VRIC or the Committee), and on behalf of its members, I write to update you on the Committee's work over the past year, per Va. Code § 23.1-3132.E.

Since November, the Committee has awarded two additional research grants to public universities from the Virginia Research Investment Fund (VRIF), both in a Round 2 competition, and we have issued Calls for Proposals for two more VRIF grant competitions, Rounds 3 and 4. In December, VRIC received the Blueprint for the Commonwealth Cyber Initiative (CCI) and subsequently approved release of bond funds and general funds for the CCI "Hub." We also advised on and eventually certified four regional CCI "Node" partnerships. Throughout 2019, the Committee coordinated with the State Council of Higher Education for Virginia (SCHEV) on development of the Commonwealth Research and Technology Strategic Roadmap (the Roadmap), which VRIC approved in October and submitted to Governor Northam for final approval. We also continue to monitor the three projects funded through the VRIF Round 1 grants in 2017 (see the attached progress report). I am pleased to share the following details with you on these important fronts.

1. Virginia Research Investment Fund (VRIF): Round 2 Awards and Rounds 3 and 4 Competitions

The Committee solicited concept papers in late 2018 for the VRIF Round 2 grant competition (see attached Call for Concept Papers and the Instructions for Full Proposals). We targeted the second round of VRIF awards at supporting collaboration between public universities that would enhance the capacities of their translational research centers in targeted growth-opportunity areas. Through this capacity-building initiative, we sought to strengthen existing university-industry partnerships and to position successful grantees to be more competitive for future opportunities for funding from federal, state, non-profit and private entities. We received seven concept papers and invited full proposals in response to five.

In early March, we received five full proposals. Per statute, VRIC reviews only those proposals deemed worthy via an initial review by a panel of external experts. The panel's review indicated that two proposals could be made worthy via mentoring of the applicants, to which the Committee agreed. We subsequently approved two improved Round 2 proposals, one in August and one in October, that totaled \$3 million from the VRIF, with an additional \$4 million in matching funds committed by the universities and their private-sector partners.

- Launch of the Virginia SmallSat Data Consortium, a collaborative research center co-led by Old Dominion University and Virginia Tech, in partnership with the Virginia Commercial Space Flight Authority and NASA Langley Research Center: Up to \$1,500,000 over two years, with the partners providing \$1,800,000 in matching funds.
- Launch of the Commonwealth Center of Innovation for Autonomous Systems (C2IAS), a collaborative research center led by Virginia Tech with Old Dominion University as its partner, and in the first year involving private collaborators: Atlas-NA; Burton-LeRoy; Cambrian Design and Development; Procomm Aviation; Sanchez Engineering Services; SimIS; Textron; and UAVPro: Up to \$1,499,991 over three years, with the partners providing over \$2,200,000 in matching funds.

In August, VRIC issued Calls for Proposals for two new grant competitions: VRIF Round 3 and VRIF Round 4. In the Round 3 competition (see the attached Call for Proposals – Research Commercialization Advancement Plans), we seek to support the efforts of the public institutions of higher education to implement best practices for streamlining the commercialization of the products of university research. The awards will be time limited to 12 or 24 months, and the proposals are amount limited to \$100,000, \$200,000 or \$400,000, depending on the size of the receiving institution's annual research expenditures. Each public institution may serve as the lead on one proposal and as a partner on unlimited proposals. Proposals are due either October 21 or January 13. The Committee will act in December on worthy proposals received in October, and in March on worthy proposals received in January. The competition sets no maximum number of awards.

Through VRIF Round 4 (see the attached Call for Proposals – Comprehensive Support Services for Proof of Concept and Commercialization), we seek a disciplined process for streamlining the commercialization of products from university research via awardees re-granting or making mini-grants to teams of researchers in specified domain areas (big data, leveraging fiber and data center assets; unmanned systems; space and satellite systems; and life sciences) for proof of concept experiments and the provision of mentoring and other support to those teams before, during and after the POC grants. Recipients will provide direct assistance to university-based innovators and entrepreneurs to support POC and commercialization of technology by offering a range of services that drive innovation-based, high-growth entrepreneurship and startup acceleration. The awards will be time limited to 36 months, and the proposals are not amount limited. Two public institutions of higher education must co-lead each proposed effort, with one identified as the lead and fiscal agent. Proposals are due by January 13, with action by VRIC expected at our March meeting. The competition contemplates up to five awards, with no more than one per domain area.

2. Commonwealth Cyber Initiative: Blueprint, Hub and Regional Nodes

On December 1, 2018, and as required in the 2018 Acts of Assembly, Virginia Tech submitted the Blueprint for the Commonwealth Cyber Initiative (CCI) to VRIC. During the Committee's meeting on December 11, we discussed the document with President Tim Sands and representatives of the CCI Leadership Council. We passed a resolution (with three members abstaining) that acknowledged receipt of the document and concluded that it satisfied the requirements of the budget language, which did not require formal approval of the Blueprint by VRIC or other public bodies.

During that meeting last December, the Committee also considered the request submitted by Virginia Tech for release of a portion (\$1 million) of the \$5 million in bond funds appropriated to support the CCI "Hub" in Northern Virginia. VRIC voted to approve (with one abstention) release in FY2019 of \$200,000 in bond funds for facilities renovations and improvements and \$800,000 in bond funds for equipment (configured specifically to support the Hub's initial activities) for the CCI. We also consulted with members Jim Dyke and Doug Juanarena to form recommendations for the criteria and process that VRIC should use, and the documentation we should require, in considering requests for certification of regional CCI "Nodes." At our next meeting (March 12), we approved the work group's proposed Instructions for Application for Certification of CCI Regional Nodes.

Also at our March meeting, the Committee received an update on the CCI Hub, which included a request for the release of general funds appropriated thereto in FY 2020. Although VRIC members expressed a general willingness to release the funds, we also expressed need for additional information regarding investments by Virginia Tech and more-specific plans for collaboration (institutional and human) and measurements of outcomes and success. Therefore, we voted to approve (with one abstention) the release of \$10 million in general funds to Virginia Tech for the CCI Hub on July 1, 2019, contingent upon the university and the CCI Leadership Council providing to the Committee's satisfaction at its next (June) meeting the additional information described above.

In June and following receipt of the requested follow-up information on the Commonwealth Cyber Initiative, VRIC members expressed satisfaction with the details provided by Virginia Tech and the CCI Leadership Council. (An additional vote to release the funds was not necessary, as the respondents had fulfilled the prior approval's contingencies.) Also at our June meeting, we reviewed requests for, and acted in accordance with the budget language to certify, four CCI Regional Nodes:

- i. Southwest Virginia Regional Node (Founding partners: Virginia Tech; Radford; UVa-Wise);
- ii. Northern Virginia Regional Node (Founding partners: George Mason; James Madison; Mary Washington; Germanna Community College; Lord Fairfax CC; and Northern Virginia CC);
- iii. Coastal Virginia Regional Node (Founding partners: Old Dominion; Christopher Newport; William and Mary; Norfolk State; Paul D. Camp Community College; Thomas Nelson CC; and Tidewater CC); and
- iv. Central Virginia Regional Node (Founding partners: Virginia Commonwealth; Longwood; University of Virginia; Virginia State; Reynolds Community College; and John Tyler CC).

Our certification of the CCI Regional Nodes in June enabled their formal participation on the CCI Leadership Council. In August, VRIC provided formal guidance to the four Nodes on requesting funding via the Committee.

3. Commonwealth Research and Technology Strategic Roadmap

The Commonwealth Research and Technology Strategic Roadmap (the Roadmap) is Virginia's articulation of the research areas/domains/foci in which it has determined that state investment will yield the greatest impacts on economic development, workforce development and the public good generally. For the Roadmap, VRIC is responsible for collaborating with SCHEV, which develops the document, for approving the document and for submitting it to the Governor for final approval. The 2018-19 period marked the first implementation of this new process, and the Committee is pleased to report that a strong and useful document resulted.

As required by statute, SCHEV assembled last winter and worked closely throughout 2019 with a panel of independent external experts, who assisted with review of quantitative data and qualitative input from a wide variety of stakeholders in both the public and private sectors. VRIC set an ambitious target of Roadmap completion in October, in order to inform the budget-development (and potentially the legislation-drafting) process for the upcoming legislative session. After receiving updates at our meetings in March, June and August, the Committee approved the Roadmap at our meeting on October 8, and directed me to forward it to Governor Northam for final approval once staff had made the text agnostic in terms of entities that might be involved in implementation. I forwarded the final document to the Governor's Office on October 25; my staff and I stand ready to assist with any revisions to the Roadmap that Governor Northam desires and/or with drafting the announcement of his final approval.

The Roadmap document identifies six areas of research focus that we believe exhibit the most worth and promise for the Commonwealth:

Governor Northam
Senator Norment
Senator Hanger
Delegate Jones
November 1, 2019
Page 5

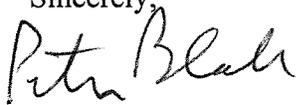
- i. Life and health sciences;
- ii. Autonomous systems;
- iii. Space and satellites;
- iv. Agricultural and environmental sciences;
- v. Cybersecurity; and
- vi. Data science and analytics.

We view the first four areas as standalone (vertical) research domains, while the final two represent more cross-cutting (horizontal) domains.

The document also details a variety of collaborative options for pursuing implementation of the focus areas, as well as recommendations for aligning research and development (R&D) and economic growth and for measuring the outcomes of these efforts. SCHEV and VRIC now will turn our attention to the enacting statute's desired establishment of "a process for maintaining an inventory of the Commonwealth's current ... [R&D] endeavors in both the public and private sectors that can be used to attract research and commercialization excellence." (Note that I have not attached the draft Roadmap here, as I do not want to create confusion if Governor Northam revises it prior to approval.)

I conclude by noting that we continue to monitor the progress of relevant initiatives, including development of the Global Genomics and Bioinformatics Research Institute. The Committee also seeks to broaden its members' knowledge base. In early October, we participated in the annual meeting of the Virginia Academy of Science, Engineering and Medicine (VASEM) at the National Academy in Washington; in November, we will participate in the celebration of recipients of grants from the Commonwealth's various research entities (e.g., VRIC; Center for Innovative Technology; the Catalyst/VBHRC; Commonwealth Health Research Board) at the Executive Mansion.

Thank you for your continued support of VRIC and its work. If this annual report spurs questions or requests for additional, updated or different information, please contact me. The Committee would welcome your attendance at any of our meetings, the next of which is December 10.

Sincerely,

Peter Blake
Chair, Virginia Research Investment Committee

cc: Members, Virginia Research Investment Committee

Attachments

ATTACHMENT
Second-Year Progress of Projects Awarded in VRIF Round 1

Key Takeaway: All three grantees have met the milestones on the timeline promised in their applications.

Virginia Tech
Machine Learning for Cyber Awareness and Defense
Timothy O'Shea
Collaborating start-up: DeepSig, Inc.

As rollout of the 5G and the Internet of Things (IoT) accelerates, security of wireless devices has become increasingly important for personal and commercial privacy and security. Solutions to provide full visibility and mitigation of cyber-threats occurring in this domain is severely lacking and this program aims to drastically change that.

Under this VRIF Grant funded program, which began in 2018, Virginia Tech and partnering Virginia based start-up company DeepSig Inc., are partnering to rapidly mature, transition and commercialize unique research which leverages machine learning to make sense of and to adapt wireless systems to provide both visibility and security for the diverse, dynamic, and rapidly growing wireless device ecosystem.

DeepSig attracted an additional \$2M in private investment in the company to bring total private investment at DeepSig to \$3.5M, growing from 8 to 15 highly skilled employees who are principally focused on artificial intelligence, machine learning, and signal processing software development, moving to a larger office space, increasing sales & revenue of the *OmniSIG* and *OmniPHY* software products (on the order of 7x this year), receiving several key valuable US Patent allowances and issuances within the exciting new green-field of machine learning driven communications systems, sponsoring several PhD graduate students, as well as developing a number of key partnership agreements with radio hardware manufacturers to jointly sell full system capabilities which employ DeepSig's software to enhance performance and reduce cost in new and existing markets and offerings.

Both DeepSig and Virginia Tech have made significant progress in commercialization and de-risking of the technology and approach. The *OmniSIG* sensor software has achieved a major milestone as the first machine learning based SDK and inference tool product on the market, allowing customers to train and deploy models to make sense out of all varieties of their own RF data sets.

OmniPHY has also made major progress by demonstrating that fully learned communications systems, which can adapt and improve their resilience to interference and threats in an environment through learning, can be used for UAV links, carrying streaming video and adapting the link in real time to protect from threats and interference.

This technology has also been demonstrated at the Brooklyn 5G Symposium alongside large commercial telecom equipment manufacturers, to show that it can be used to enhance future 5G base station and handset performance – representing the only such organization at the venue currently using and demonstrating machine learning over the air in prototype next generation wireless systems.

University of Virginia

Eliminating the Neurocognitive Consequences of Diabetes: The Virginia Hypoglycemia Safety Project

Sue Brown

Collaborating start-up: TypeZero Technologies

The University of Virginia has spent a decade developing improved treatment options for Type 1 diabetes, particularly in the field of automated insulin delivery (also called artificial pancreas [AP] or closed-loop control). Research in this area is beginning to investigate the impact of these systems on quality of life and other outcomes that are important to people living with Type 1 diabetes. One potentially important outcome is daily cognitive function, which can be negatively affected by both extreme high (hyperglycemia) and low (hypoglycemia) blood glucose changes. This project builds on this AP technology using novel methods to evaluate the impact on cognitive function of the artificial pancreas, in particular its dedicated safety system that automatically adjusts insulin levels to achieve better blood sugar control.

This research study uses an algorithm originally created at the University of Virginia (UVA) Center for Diabetes Technology which then underwent several iterations to make it more efficient and easier to use. The algorithm was then developed into a more user-friendly mobile AP system called inControl by TypeZero Technologies (now known as Dexcom Virginia R&D). This inControl algorithm was then ultimately embedded directly onto an insulin pump by Tandem Diabetes Care in what could be called a 3rd generation of the original UVA AP technology. This new generation is called Control-IQ and became available for research purposes during the course of this VRIF funding.

The clinical trial funded by VRIF is enrolling two groups of participants: children 6-10 years old and older adults (over 65 years of age) with Type 1 Diabetes. In addition to children with Type 1 Diabetes, researchers are also enrolling their parents (one parent who takes the most responsibility for the child's diabetes management). This allows researchers to investigate the impact of the AP technology on parents' quality of life. The researchers have successfully met their enrollment target of 45 participants (15 children, 15 parents, and 15 older adults).

The trial lasts 8-10 weeks for each participant. At the present time, 20 participants have completed the trial (13 older adults plus 7 pairs of young children and parents). Ten participants remain (2 older adults and 8 pairs of young children and parents) and the last participant will finish by December 2019. Data analysis and manuscript preparation will occur through March 2020.

An innovative program was developed specifically for this project. To assess cognitive function and other indices of quality of life, participants collect real-time daily data using a programmed

smart phone during the last 10-14 days of each study phase. This scientific method is called “Ecological Momentary Assessment” (EMA) and refers to data collection in real time during a person’s daily schedule. The program presents a list of moods and symptoms that are rated to assess daily emotional and physical status. The program then presents two brief cognitive tests involving number memory and mental math, both of which are reliable measures of working memory and problem solving. Participants complete this brief assessment 2 – 4 times each day on a randomized schedule that allows them to postpone the data collection to a later time if it signals them at an inconvenient time. The researchers submitted a proposal to NIH utilizing these techniques and programs for obtaining real-time assessments (ecological momentary analysis, or EMA) developed for this VRIF grant which was successfully funded.

An additional aim of this project is to explore the possible effects of this artificial pancreas technology on sleep quality and quantity. Little is known about the relationships between sleep improvements and automated insulin delivery. To investigate these relationships, researchers obtain sleep data using a wrist-worn device that is comparable to a watch, called an Actigraph. This device records movement and ambient light. Nighttime awakenings are particularly problematic for parents of children with type 1 diabetes due to the need to get up during the night to check the child’s blood sugar level. Researchers focused efforts on developing strategies and techniques for analysis and interpretation of this sleep data and are in the process of analyzing the sleep data. Anecdotal reports from parents indicate they sleep better when their children are on this AP technology. In fact, it is not uncommon for parents as well as participants to tell researchers that they have had some of their “best nights of sleep in a long time” with the use of the technology.

During the past year, Dr. Daniel Chernavvsky (the original Principal Investigator for this study) accepted a position in industry outside the University and remains adjunct faculty at UVA. Dr. Sue Brown assumed the role of PI. Using data from this grant, the researchers plan to submit abstracts for presentation at the premier International Diabetes Technology conference (ATTD) in February 2020. In addition, they plan to submit the overall study results for presentation at the American Diabetes Association (ADA) conference in June 2020. After these presentations, they will prepare and submit manuscripts based on the project to scientific diabetes journals.

Virginia Tech

Brain Cancer Treatment with High-Frequency Electroporation

Rafael Davalos

Collaborating start-up: VoltMed, Inc.

Brain tumors cause significant morbidity, mortality and devastation as the leading cause of cancer-related deaths in children and adolescents 0-19, surpassing leukemia. The most common and aggressive of all primary intracranial tumors is a type of glioma known as Glioblastoma (GBM) with a grim 5-year survival rate less than 5%, typically resulting in death within the first 15 months after diagnosis. Unfortunately, there will be approximately 12,386 new cases of GBM in the US this year.

A major reason for low survival is migration of glioma cells beyond the margins of the tumor into adjacent brain tissue. These infiltrative glioma cells may be a key factor in tumor progression and

resistance to therapy. Their treatment is limited by the blood-brain barrier (BBB), a biological barrier that isolates intracranial tissues from circulating pathogens and harmful molecules, hindering transport of therapeutics. The poor prognosis for GBM patients results from the failure of therapeutics to penetrate the BBB, combined with a lack of effective targeted therapies.

To improve the prognosis of GBM, the researchers are developing a minimally invasive device that can treat primary tumors and the infiltrative glial cells beyond the tumor margin through Integrated Nanosecond-Pulsed Irreversible Electroporation (INSPIRE™). This new treatment paradigm has the potential to result in complete remission. INSPIRE™ is a non-thermal ablation procedure in which very small surgical electrodes are temporarily inserted into the tumor site to emit low-energy, high-frequency pulsed electric fields in the range of 500ns – 2μs for approximately 5 minutes. INSPIRE™ destabilizes cell membranes, creating irreversible membrane nanopores that lead to cell death.

Results have shown that malignant cells are almost twice as susceptible as healthy cells to the energy dissipating away from the electrodes, indicating that INSPIRE™ can be used to ablate the tumor while selectively killing infiltrative glial cells in adjacent brain tissue. Critical structures remain intact and healthy brain tissue is preserved, thereby minimizing adverse effects, improving cognitive processing and patient outcomes.

This grant is providing funding necessary to advance INSPIRE™ through regulatory approval and market entry by building a pulse generator and electrosurgical probes with which to perform GLP-compliant *in vivo* studies. The INSPIRE™ device will comply with FDA design controls and all pertinent ISO, IEC, and ASTM standards. The GLP *in vivo* studies will permit characterization of the electric field threshold for inducing INSPIRE™ and BBB disruption with clinically-relevant electrode configurations; a key set of information for the Investigation Device Exemption (IDE) submission and subsequent treatment of human patients.

The researchers have partnered with Sterling Medical Device (Rochelle Park, NJ) to build the INSPIRE™ pulse generator. The design documentation is complete, and they are nearing the end of the development phase. The principal components of the generator will consist of power electronics, a touchscreen display, and a switch pedal, all of which will be housed in a wheeled cart. A working unit now exists and was tested in an MRI suite with partners at the University of Virginia. A final set of design activities are underway.

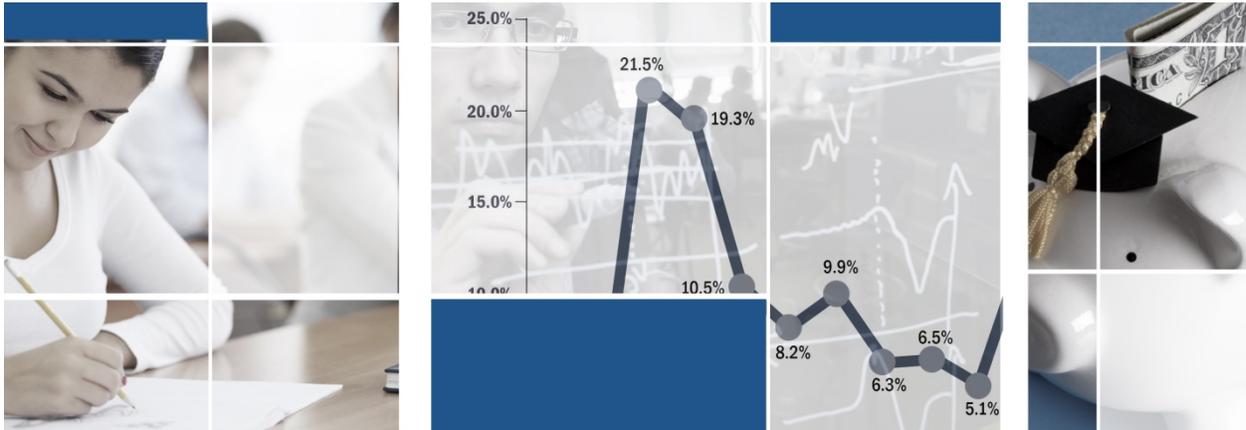
The researchers have been awarded an NIH SBIR Phase I grant for \$244K to support this effort and have partnered with Plastics One (Roanoke, VA) to finalize the construction of an MRI-compatible probe. The probe is now design locked. Preliminary ASTM testing associated with MRI safety (e.g., radiofrequency heating and image artifact) has been completed with UVA. Additionally, the researchers have demonstrated the ability to perform MRI thermometry during ablation protocols on *ex vivo* tissue. CIT awarded an SBIR matching funds grant in the amount of \$50,000.

The Path-to-Patient involves two FDA pre-submission meetings. The first IDE pre-submission packet was submitted Q2 2019, followed by a face-to-face meeting held at the agency in Silver Spring, MD in Q3 2019. The second pre-submission meeting is planned for Q4 2019, with a

focus on the human protocol and device bench testing. Following this meeting, the team will submit the full IDE application for conducting an Early Feasibility Study (EFS) on patients with recurrent, malignant glioma.

The researchers are also in the process of preparing two additional regulatory applications for Q4 2019. The first is a Breakthrough Designation Request. If successful, this would grant priority in FDA review and correspondences and could attract investors interested in commercializing INSPIRE™ technology. The second is a small business request. If successful, this would grant eligibility to receive FDA's small business reduced fees for the duration of the regulatory process.

October 26, 2018



Virginia Research Investment Fund Call for Concept Papers Research Center Capacity Building

Activity	Key Dates
Call for Concept Papers Issued	October 26, 2018
Concept Papers Due	December 3, 2018
Invitation for Full Proposals	January 11, 2019
Full Proposals Due	February 18, 2019
Award Announcement	June 11, 2019
Estimated Start Date	July 1, 2019

Table of Contents

Fast Facts 2

Virginia Research Investment Fund 3

 Commercialization of Academic Research; Economic Development 3

 Study to Assess Virginia’s Research Assets..... 3

Description of Funding Opportunity 4

 Eligible Applicants and Required Partnerships 4

 Type of Activities and Eligible Strategic Domain Areas..... 4

 Potential Uses of Funds 5

 Implementation of Best Practices 6

 Award Type and Amount 6

 Matching Funds Required..... 6

 Period of Performance..... 6

Concept Paper Submission Information and Contents 6

 Submission Information 6

 Concept Paper Contents 7

Application Processing, Review and Award 9



Call for Concept Papers Research Center Capacity Building

Fast Facts

Overview: The Virginia Research Investment Fund was created by the Virginia General Assembly in 2016 to foster economic development and job creation through innovative and collaborative research, development and commercialization efforts and the recruitment and retention of eminent researchers. The Fund encourages cooperation and collaboration among public institutions of higher education and with the private sector. Grants from the Fund are intended to position the Commonwealth as a national leader in science-based and technology-based research, development and commercialization.

Concept Papers for Research Center Capacity Building: Concept papers will be accepted for applied research centers focused on commercialization of the product(s) or services resulting from the research (i.e., Translational Research to Commercialization (TR2C) Centers). Limitations exist regarding the areas of research focus. Two or more institutions are required to collaborate.

Concept Papers Due: December 3, 2018

Invitations for Full Proposals: January 11, 2019

Invited Full Proposals Due: February 18, 2019

Estimated Start Date: July 1, 2019

Length of Award: One to three years

Award Amount: The maximum award amount is \$1.5 million.

Match: A 1:1 match is required.

Number of Grants: The Virginia Research Investment Committee has not determined the number of awards. VRIC has discretion to make no awards.

Website: <http://schev.edu/index/institutional/grants/va-research-investment-fund/vrif-call-for-concept-papers>

Questions:

Lynn Seuffert, Associate for Research Investment
State Council of Higher Education for Virginia
lynnseuffert@schev.edu

Documents for Download

Fast Facts

Call for Concept Papers

Best Practice Examples for Translational Research Centers

Optional Partner Commitment Form

Virginia Research Investment Fund

Commercialization of Academic Research; Economic Development

In recent years, several Virginia governmental entities have focused on the relationship between the commercialization of academic research and economic development. The 2016 Virginia General Assembly passed legislation to support the academic research enterprise in the Commonwealth, creating the Virginia Research Investment Fund (VRIF) and an awarding body, the Virginia Research Investment Committee (VRIC). Prospective applicants are encouraged to review the [amended statutes in full](#).

Study to Assess Virginia’s Research Assets

In 2017, SCHEV, on behalf of the Virginia Research Investment Committee, launched a comprehensive study to assess the Commonwealth’s research assets, including those at its public universities, federal research facilities and private-sector companies. SCHEV retained TEconomy Partners, LLC, to conduct the study, which was completed in January 2018. A final report and three detailed analyses are available on the right side bar [here](#).

VRIC convened a 14-member Implementation Advisory Team (IAT) to assist with development of an implementation plan for the study recommendations. The IAT met over the course of 2018 and, in October, presented to VRIC guidance which included key concepts and a recommended approach for changing the trajectory of Virginia’s innovation economy. The guidance included four activities: (1) generate more new high-growth-potential commercialization ideas; (2) focus on strategic domain areas; (3) launch and scale-up high-growth, product-oriented startups; and (4) coordinate a statewide network of innovation services.

The IAT guidance also describes Virginia’s competitive advantage and innovation assets in five strategic innovation domain areas: Cybersecurity technologies, Big Data (leveraging fiber and data center assets), unmanned autonomous systems applications (leveraging test and demonstration facilities), space and satellite development and applications, and life sciences. A sixth domain leaves the door open for state investment in significant, differentiated, new opportunities unfolding in Virginia in the future.

Details are available [here](#).

Description of Funding Opportunity

Eligible Applicants and Required Partnerships

Eligible lead applicants are public institutions of higher education in Virginia. At least two institutions must partner for each concept paper. An institution may submit an unlimited number of concept papers.

Type of Activities and Eligible Strategic Domain Areas

Evidence shows that translational research centers are effective tools for advancing commercialization of university research and entrepreneurial development, thereby driving economic growth. This competition is focused on the IAT’s guidance regarding (1) generating more new high-growth-potential commercialization ideas; and (2) focusing on strategic domain areas. The vehicle for implementing this guidance is the development of “Translational Research to Commercialization (TR2C) Centers.”

Generating high-growth-potential commercialization ideas is dependent on improving the pipeline from bench to licensing at universities.

Table 1: The Bench to Licensing Continuum for Research Commercialization

Bench		Technology Transfer		Technology Commercialization
<i>Pre-Competitive Research</i>	<i>Applied Research</i>	<i>Discovery to IP Creation</i>	<i>Translational Research</i>	<i>Licensing Activities</i>
<ul style="list-style-type: none"> • Largely, federal and philanthropic grants • Industry consortium 	<ul style="list-style-type: none"> • Help companies identify needed expertise and available IP • Individual company sponsored research into application or technology solution 	<ul style="list-style-type: none"> • Scouting IP • Invention disclosure • Provisional patents • Seek initial assessment and industry interest • Advance to next stage or return to inventor 	<ul style="list-style-type: none"> • Deeper market and technical assessment • Proof-of-concept to de-risk innovation • Go/No-Go decision on intellectual property (patent, copyright, trade secret, open access, etc.) 	<ul style="list-style-type: none"> • “Investment grade” ready technologies • Engage innovation partners • Licensing to startup and existing companies

Source: TEconomy Partners, LLC

The eligible strategic domain areas are:

- Big data, leveraging fiber and data center assets
- Unmanned systems
- Space and satellite systems
- Life sciences (see restrictions below)
- Significant, differentiated, new opportunity unfolding in Virginia (see instructions below)

Because the Commonwealth Cyber Initiative represents the Commonwealth’s flagship center for cybersecurity technologies, no proposals will be accepted for that domain. Likewise, no proposals will be accepted related to the five key areas of research at the Global Genomics and Bioinformatics Research Institute (GGBRI) that VRIC voted to endorse at the May 24, 2017,

meeting: (1) Genetics and genomics, understanding how the genome regulates its function in health and disease; (2) structural biology of disease/systems approach; (3) developmental biology; (4) computational biology; and (5) biomedically directed engineering.

Applicants may propose to focus their proposed TR2C Center on a “Significant, Differentiated, New Opportunity Unfolding in Virginia,” instead of one of the eligible identified strategic domain areas. Applicants that choose this option must provide an in-depth analysis of the emerging growth opportunity. See directions under Concept Paper Submission Information and Contents, below.

Within the targeted domain areas, the IAT suggested services on the continuum from market-driven product development and design through new startup launch:

- Identify unmet market needs in technology domain areas
- Pursue applied R&D projects and enhancements aligned with unmet market needs
- Scout for inventions with commercial value
- Inform commercialization questions for proof-of-concept projects to de-risk technologies
- Accelerate new venture formation
- Mentor scaling of emerging ventures

Potential Uses of Funds

Within the context of a Translational Research to Commercialization (TR2C) Center focused on an eligible strategic domain area, grantees could use the funds for activities that contribute to the statutory goals of VRIF and are required for the collaborative effort to be successful. The list below includes examples of costs commonly associated with building research center capacity and is not intended to limit innovative activities:

- Activities to create a formal relationship between the collaborating entities and common policies, practices and procedures, such as governance structure, agreements regarding ownership of intellectual property developed by the partners, memoranda of understanding, common research commercialization pathways that greatly improve the efficiency and productivity of the innovation ecosystem, etc.
- Activities to shore up early-stage centers of excellence and help position the center to apply for a large-scale federal center grant
- Identification of unmet market needs in the domain area and activities focused on market-pull to advance commercializable research that meets market needs
- Research involving key industry-identified need(s) for university-industry collaboration, such as pre-competitive research for new product development, applied research projects engaging students and faculty, testing and validation, standards development, etc.
- Scouting for inventions with commercial value
- Targeted support for proof-of-concept projects (for products of university-based research) supported by a mentoring network of private-sector experts and linked to venture investors (this includes both “filling the funnel” with early-stage high-risk, high-gain opportunities and “de-risking” technologies at scale in an organized way)
- Activities that result in a stronger technology cluster or ecosystem by building on the strategic plan for cluster development (which applicants can create using grant funds)
- Linking accelerators and university technology transfer offices
- Activities focused on accelerating new venture development in the targeted domain with mentor and technical networks
- Renovations, shared use labs and testing facilities, equipment (using bond funds)
- Recruitment of eminent researchers with a proven record of entrepreneurial success
- Costs of protecting intellectual property

Implementation of Best Practices

As mentioned, evidence shows that translational research centers are effective tools for advancing commercialization of university research and entrepreneurial development, thereby driving economic growth. More information and best practice examples for translational research centers are available [here](#).

Applicants are expected to incorporate the design features, traits and activities commonly found in successful research centers.

Award Type and Amount

VRIC has not determined the total amount of funding that might be awarded.

Both General Fund monies and bond funds are available. Use of bond funds is limited to research equipment and lab renovations and enhancements to existing space.

The maximum award amount is \$1.5 million. VRIC possesses discretion to make no awards.

Funds will be awarded in the form of a grant, with a Memorandum of Understanding between the State Council of Higher Education for Virginia and the lead institution. Bond funds will be distributed through the Virginia College Building Authority 21st Century College and Equipment Program and will require an additional agreement with the Virginia Department of the Treasury in conjunction with the bond closing.

Matching Funds Required

A 1:1 match is required, as detailed in Concept Paper Submission Information and Contents, below.

Period of Performance

Grant periods may be proposed ranging from one year to three years.

The grant period will begin on or about July 1, 2019.

Concept Paper Submission Information and Contents

Submission Information

The lead applicant should submit the concept paper with the signature of an authorized signer on the cover sheet. The concept paper is non-binding; however, applicants invited to submit a full proposal will not be allowed to change the targeted domain area and will be expected to keep the budget near or below the amount included in the concept paper. Should the partnering entities be invited to submit a full proposal, the consortium can submit with a different (eligible) lead institution, submit with a different Principal Investigator/Center Director or decline to submit.

Please submit the concept paper packet in pdf format by 5:00 p.m. on December 3, 2018, to Lynn Seuffert, Associate for Research Investment, at lynnseuffert@schev.edu.

Concept Paper Contents

Please do not include propriety information in your concept paper. Concept papers should include the following elements:

Cover sheet

Please include:

- Targeted domain area (include subspecialties if applicable)
- Name and contact information for lead institution
- Names of partnering public institution(s) of higher education (must include at least one)
- Name(s) of private-sector partner(s), if any, including whether located in state or out of state
- Names of any other partnering entities
- Length of requested grant period
- Amount of funds requested
- Estimated amount of matching funds (must be at least 1:1)
- Printed name, title and signature of authorized signer

Narrative (5 pages maximum, single spaced)

The narrative should describe the purpose and goals of the proposed Translational Research to Commercialization (TR2C) Center, the public and private partners and the intended activities. The narrative should also outline how the TR2C Center will differentiate and benefit the Commonwealth, align with the statutory goals for VRIF, align with guidance of the VRIC Implementation Advisory Team described above and follow best practice examples of translational research centers in other states (information available [here](#)).

If an applicant has chosen one of the identified strategic domain areas, there is no need to further justify why that domain is important to the Commonwealth. Focus the narrative instead on the activities of the proposed TR2C Center and how they will result in a national or global leadership role for Virginia in that domain.

Applicants may propose to focus their proposed TR2C Center on a “Significant, Differentiated, New Opportunity Unfolding in Virginia,” instead of one of the identified strategic domain areas. Applicants that choose this option must provide a separate document with an in-depth analysis of the emerging growth opportunity area. That analysis should further include information about the universities, centers and institutes and their private-sector partners in other states (publications, patents, grant awards, etc.) that are targeting the same field and provide compelling evidence that Virginia has a realistic opportunity to become a national or global leader.

Applicants proposing to employ entrepreneurs in residence should review the table below and define which role(s) and associated activities the EIR(s) will fill.

Table 2: Multiple Roles of Entrepreneurs-In-Residence (EIRs) Across Innovation Stages

Role of EIR	Activities	Skills of EIR	Typical Organizational Context
IP Miner	<ul style="list-style-type: none"> • Prospecting technologies – “walking the halls” • Providing guidance on making go/no-go IP decisions 	Subject domain knowledge of technologies and market opportunities	<ul style="list-style-type: none"> • Translational research center • University technology transfer

Role of EIR	Activities	Skills of EIR	Typical Organizational Context
Commercializer	<ul style="list-style-type: none"> • Market assessment • Determine proof-of-concept approach • Setting key product development milestones 	Understanding of market differentiation, market potential, market timing and market positioning	<ul style="list-style-type: none"> • Translational research center • University technology commercialization • Regional innovation/entrepreneur hub
New Venture Mentor	<ul style="list-style-type: none"> • Business planning and launch • Investor outreach and presentations • Product/first customer development 	Launching of new products and attracting investors	<ul style="list-style-type: none"> • Regional innovation/entrepreneurial hub • Translational research center • University technology transfer
Scalable Venture Driver	<ul style="list-style-type: none"> • Building management team • Positioning for IPO/investor relations • Entry in new market and expanding market presence 	Seasoned business executive who has grown a company 20x and successfully exited	<ul style="list-style-type: none"> • Regional innovation/entrepreneurial hub

Source: TEconomy Partners, LLC

Budget (3 pages maximum)

Please estimate separately the amount of General Fund monies and bond funds the partnership will request each year of the grant period and cumulatively. Include the estimated division of funds between the partnering entities. Briefly describe how each type of funding would be spent.

A 1:1 match is required. Briefly describe the estimated amount and source(s) of the match, along with a brief description of how matching funds would be spent.

When estimating the budget needs, please keep the following in mind:

- VRIF funds cannot be used for indirect costs.
- Commitment of a 1:1 match is a criteria for eligibility, rather than a review criteria (i.e., additional consideration will not be given to projects with commitments of greater than a 1:1 match).
- Unrecovered indirects can be counted toward the match (as calculated using the basis in the institution’s negotiated indirect agreement).
- Grantees cannot count Higher Education Equipment Trust Fund dollars toward the match.
- Grantees cannot use Education & General Program (E&G) funds to satisfy the match. (E&G revenues are derived mainly from state appropriations and student tuition and fees.)
- The funds proposed as matching funds cannot be the same funds that have already been committed as a match to another project.
- Grantees cannot count awards from VBHRC, CHRB, CIT, Go Virginia or the Tobacco Commission toward the match.
- If the match is another grant, that grantmaker’s terms and conditions or authorizing legislation must not prohibit use of those funds as a match.
- Grantees cannot match one VRIF grant award (or subaward) with another VRIF grant award (or subaward).

Allowable Attachments

The only allowable attachments are:

- Optional biosketches (in a format accepted by any federal agency) of the PI or Center Director at the lead institution and the Co-PI at each partnering institution
- Optional Partner Commitment Form available [here](#)
- Documentation described above if applicant has proposed to focus on a “Significant, Differentiated, New Opportunity Unfolding in Virginia”

Please do not attach letters of commitment or general letters of support.

Application Processing, Review and Award

Upon receipt via email of a concept paper package, SCHEV staff will respond by return email within two business days to confirm receipt.

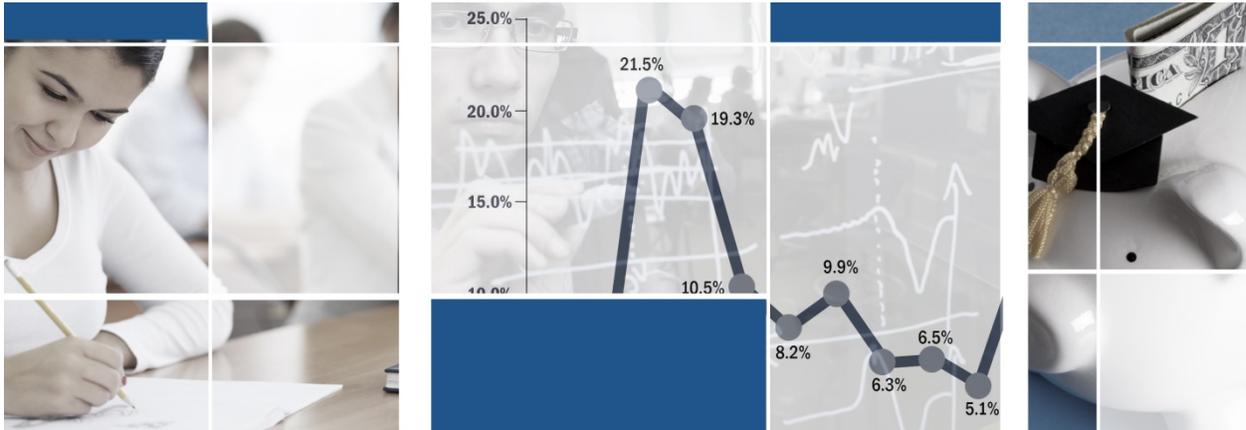
After an administrative review by SCHEV staff to ensure that concept paper packets are complete and conform to administrative requirements in this Call for Concept Papers, SCHEV staff and selected individual reviewers from external entities will read the concepts and make recommendations regarding invitations to the most-promising public-private collaborations to submit full proposals. These deliberations will be used to set the parameters for the instructions for the full proposals from invited applicants.

In addition to considering how the proposed TR2C Center will differentiate and benefit the Commonwealth, align with the statutory goals for VRIF, align with guidance of the VRIC Implementation Advisory Team and follow best practice examples of translational research centers in other states, the selected reviewers will consider the potential of the TR2C Center to (i) culminate in the commercialization of research; (ii) culminate in the formation or spin-off of viable companies; (iii) promote the build-out of a targeted domain area; (iv) promote applied research and development in the targeted domain area; (v) provide modern facilities or infrastructure for research and development; (vi) result in significant capital investment and job creation; or (vii) promote collaboration among the public institutions of higher education in the Commonwealth.

After full proposals are submitted, a peer review panel(s) will be convened by SCHEV staff to read, comment, score and rank the proposals in accordance with statute. Upon an application receiving a favorable evaluation, SCHEV staff would forward the application, along with the scoring or prioritization, to the Committee for further review and a decision whether to award a grant from the Fund in June 2019.

Additional information about review and award of invited full proposals will be provided in the instructions for full proposals.

January 11, 2019



Virginia Research Investment Fund Instructions for Invited Full Proposals Research Center Capacity Building

Activity	Key Dates
Invitations for Full Proposals Issued	January 11, 2019
Full Proposals Due [Note extended deadline]	March 4, 2019
Award Announcement	June 11, 2019
Estimated Start Date	July 1, 2019

Table of Contents

Virginia Research Investment Fund 2

 Commercialization of Academic Research; Economic Development 2

 Statutory Purpose and Goals..... 3

 Study to Assess Virginia’s Research Assets..... 3

 Measures and Key Indicators of Progress Toward Goals 3

Virginia Research Investment Committee 4

Best Practices and Shared Values in Principled Grantmaking..... 5

Virginia’s Freedom of Information Act and Open Meetings Law 5

Application and Submission Information..... 6

 Invited Full Proposal 6

 Budget and Budget Narrative 7

 Matching Funds Guidelines 8

Application Processing, Review and Award 9

Reporting Requirements10

Award Administration12

Appendix A: Application Template – Research Center Capacity Building.....13

Appendix B: Data Tables17

Appendix C: For health sciences research center proposals only – Global Genomics and
Bioinformatics Research Institute – Areas of Research Focus22

Appendix D: Assurances and Certifications – Terms and Conditions of Award31

Virginia Research Investment Fund

Commercialization of Academic Research; Economic Development

In recent years, several Virginia governmental entities have focused on the relationship between the commercialization of academic research and economic development. Current Governor Northam issued “A Comprehensive Economic Development Policy for the Commonwealth” (the Comprehensive Policy) on December 7, 2018. Former Governor McAuliffe issued Executive Orders #23 and #26, regarding the establishment of the New Virginia Economy workforce initiative, strategic plan and steering committee. The State Council of Higher Education for Virginia issued The Virginia Plan for Higher Education. The General Assembly created the Virginia Initiative for Growth and Opportunity in Each Region (GO Virginia), the Virginia Research Investment Fund (VRIF) and the Virginia Research Investment Committee (VRIC).

The Comprehensive Policy, New Virginia Economy, GO Virginia and VRIF

- Push new boundaries as a global leader in the information technology sector by building on strengths in cybersecurity and unmanned systems, and expanding into new frontiers like the Internet of Things (IoT) and machine learning (the Comprehensive Policy)
- Support small businesses and courageous entrepreneurs; each business should have a supportive partner in the Commonwealth (mentorship, capital and peer support); build healthy and inclusive networks of innovators and entrepreneurs; invest in community network-building, partner with world-class universities to commercialize potentially industry-changing technologies and connect those bright ideas to those with expertise and financial resources; Virginia's small business and startup ecosystem will create a stronger, more diversified and resilient economy (the Comprehensive Policy)
- Accelerate innovation and entrepreneurs by pursuing policies and public-private partnerships which attract talent, encourage entrepreneurship, promote business development and investment, and champion the creation and commercialization of cutting-edge products and services (New Virginia Economy)
- Propel the diversification of the economy through collaborative regional opportunities and activities (Virginia Growth and Opportunity Board)
- Invest research funding to leverage private investment and collaboration among universities to commercialize their activities (John O. “Dubby” Wynne and Thomas F. Farrell II, Op-Ed, Richmond Times Dispatch, Nov. 12, 2016)
- Channel the impact of higher education to state and regional economic development (Virginia Plan for Higher Education)

The Virginia Plan: Higher Education’s Mission and Vision and SCHEV’s Priority Initiatives

Mission: Higher education in Virginia will advance postsecondary learning, research and public service that enhance the civic and financial health of the Commonwealth and the well-being of all its people.

Vision: Higher education will transform the lives of Virginians, our communities and our Commonwealth.

SCHEV Initiative #6: Promote economic development for the Commonwealth by implementing a long-term plan that supports recruitment and retention of research faculty, provides matches to federal and private research grants, and enhances commercialization of higher education research.

Target: By 2030, Virginia’s share of the national academic research and development expenditure total will have increased from 2.12% to 2.75% (a 30% increase), potentially representing an additional economic impact of \$1 billion or more.

Statutory Purpose and Goals

The 2016 Virginia General Assembly passed legislation to support the academic research enterprise in the Commonwealth, creating the Virginia Research Investment Fund (VRIF) and an awarding body, the Virginia Research Investment Committee (VRIC). Prospective applicants are encouraged to review the [amended statutes in full](#).

Study to Assess Virginia’s Research Assets

In 2017, SCHEV, on behalf of the Virginia Research Investment Committee, launched a comprehensive study to assess the Commonwealth’s research assets, including those at its public universities, federal research facilities and private-sector companies. SCHEV retained TEconomy Partners, LLC, to conduct the study, which was completed in January 2018. A final report and three detailed analyses are available on the right side bar [here](#).

VRIC convened a 14-member Implementation Advisory Team (IAT) to assist with development of an implementation plan for the study recommendations. The IAT met over the course of 2018 and, in October, presented to VRIC guidance which included key concepts and a recommended approach for changing the trajectory of Virginia’s innovation economy. The guidance included four activities: (1) generate more new high-growth-potential commercialization ideas; (2) focus on strategic domain areas; (3) launch and scale-up high-growth, product-oriented startups; and (4) coordinate a statewide network of innovation services.

The IAT guidance also describes Virginia’s competitive advantage and innovation assets in five strategic innovation domain areas: Cybersecurity technologies, Big Data (leveraging fiber and data center assets), unmanned autonomous systems applications (leveraging test and demonstration facilities), space and satellite development and applications, and life sciences. A sixth domain leaves the door open for state investment in significant, differentiated, new opportunities unfolding in Virginia in the future. Details are available [here](#).

Measures and Key Indicators of Progress Toward Goals

Measures of success are listed below. Additional measures could be added to document progress toward the ultimate goal to position Virginia as a national leader. Because the return on R&D investment may occur many years in the future and may be difficult to attribute to a specific project, some measures will be tracked both in relation to specific VRIF projects and overall state ranking or achievement. Finally, long-range indicators related to individual projects will be tracked for five years after the end of the grant period.

Measures Tracking Progress on Pathway to Research Commercialization

Stage: Discovery to IP Creation:

- Funding and # of projects in pre-competitive research/applied research to meet industry-driven unmet market needs
- # of invention disclosures

Stage: Translational Research:

- # of completed market assessments for invention disclosures
- # of completed proof-of-concept projects
- # of patent application filings and patent awards

Stage: Licensing to Initial New Firm Formation:

- # of licenses executed: total and with start-ups, in-state existing businesses and out-of-state existing businesses
- Regulatory milestones achieved by products under development in startups or other licensees
- Amount and source of investment capital raised by startups
- Evidence of valuation increases in university startups based on institutional investors or other external sources
- Startup economic footprint: square footage occupied, sales generated, jobs, average salaries, local and state taxes paid, and related economic indicators
- Sales generated through licensing by in-state existing businesses

Measures related to each strategic domain area

- # of identified unmet market needs validated by customer engagement and market research
- # of invention disclosures generated through scouting university labs and faculty research
- Results of applied research projects: follow-on funding, IP generated and licenses
- Results of proof-of-concept projects funded: IP generated, licenses and startups formed
- Results of pre-seed investments in startups: follow-on funding, product sales, jobs created

Virginia Research Investment Committee

The Virginia Research Investment Committee (VRIC) is charged by statute to evaluate applications, taking into account the review, scoring or prioritization by a panel of peer reviewers, and then to decide whether to approve an application for an award of a grant from the Fund (§23.1-3133 E & F).

Membership on VRIC is established by §23.1-3132. The Committee consists of five ex officio members and four non-legislative citizen members who are also members of the Virginia Growth and Opportunity (GO Virginia) Board.

Ex officio members:

- Director of the Council – Peter Blake (Chair)
- Secretary of Commerce and Trade – Brian Ball
- Secretary of Finance – Aubrey Layne
- Staff Director of the House Appropriations Committee – Robert Vaughn
- Co-Directors of the Senate Finance Committee – April Kees and Jason Powell

Citizen members from GO Virginia:

- John “Dubby” Wynne (appointed by the House of Delegates)
- Heywood Fralin (appointed by the Senate)
- James “Jim” Dyke (appointed by the Governor)
- Doug Juanarena (appointed by the Governor)

Committee members’ terms on VRIC are coincident with their terms in office and their terms on the GO Virginia Board, respectively.

Best Practices and Shared Values in Principled Grantmaking

To maintain public trust, these shared values drive VRIC best practices in principled grantmaking and form the foundation for the guidelines that govern the VRIF proposal, peer review and award processes. These shared values closely follow the core values of the National Institutes of Health.

Expert Assessment: Expertise on peer review panels will be suitable for evaluating the potential impact of the proposed work. No proposals will be funded that were not favorably evaluated by a peer review panel.

Transparency: Decisions for awards will be made solely using published review criteria.

Impartiality: Inappropriate influences will be removed from the review process. Award decisions will be rendered without the influence of conflicts of interest or the appearance of conflicts of interest. Awards will be made without bias or predisposition, either personal or professional. Awards will not be made based on predetermination.

Fairness: All applications will be evaluated using the same review processes. Decisions will be rendered based on information included in the proposal. ***After a call for proposals is issued for a round of funding, all conversations between institutions/researchers and VRIC members about specific projects will cease.***

Privacy Protection for Applicants and Peer Review Panel Members: Peer review panel members and VRIC members will honor the spirit of the FOIA exclusions and closed meeting allowances for VRIF processes to ensure the privacy protection of applicants and peer reviewers.

Virginia's Freedom of Information Act and Open Meetings Law

Introduction

The Virginia Freedom of Information Act (FOIA) does not provide the same protection from exposure as federal Sunshine Laws for unfunded or funded grant proposals. Applicants should consult with their institution's counselor from the Office of the Attorney General.

Required Action: Applicants must make a written request for protection, identifying with specificity the data, information or other materials for which protection is sought and stating the reason why protection is necessary. Please follow the directions below.

Description of FOIA Exclusion for VRIF

The Virginia Freedom of Information Act (FOIA) as codified at Va. Code §2.2-3705.6 Item 28 addresses protection for proposals submitted to VRIC. Please read the entirety of Item 28, available [here](#).

The statute allows only the following information contained in a public record to be excluded from the mandatory disclosure provisions: Information relating to a grant application, or accompanying a grant application, submitted to the Virginia Research Investment Committee, to the extent that such records would reveal:

1. Trade secrets as defined in the Uniform Trade Secrets Act (§59.1-336 et seq.), disclosure of which would be harmful to the competitive position of a party to the grant application.
2. Financial information of a party to the grant application that is not a public body, including balance sheets and financial statements, that are not generally available to the public through regulatory disclosure or otherwise, disclosure of which would be harmful to the competitive position of a party to the grant application.
3. Research-related information produced or collected by a party to the grant application in the conduct of or as a result of study or research on medical, rehabilitative, scientific, technical, technological or scholarly issues, when such information has not been publicly released, published, copyrighted or patented, disclosure of which would be harmful to the competitive position of a party to the grant application.

The statute requires that the request for protection by applicants occur at the time the materials are submitted to VRIC.

Item 28 also gives VRIC the authority to approve or deny the request for protection.

Directions for Requesting Protection from Mandatory Disclosure

Applicants should submit two versions of their application packet. In one version, applicants should redact the information for which protection is sought. For each redaction, applicants should indicate (in the margin, via comments added to a pdf or on a separate cover sheet) the reason why protection is necessary, keeping in mind that the statute allows three types of information to be protected when disclosure would be harmful to the competitive position of a party to the grant application.

SCHEV staff will notify applicants within two weeks of submission whether their request has been approved. If the request was not approved, SCHEV staff will work with applicants to navigate a path to protection or withdraw the application.

SCHEV Response to FOIA Request

In the event that SCHEV receives a FOIA request, the decision regarding what, if any, information is to be withheld from disclosure pursuant to the Virginia Freedom of Information Act rests within the sole discretion of the SCHEV FOIA officer, SCHEV staff, the VRIC Chair and SCHEV's Attorney General representative. It is anticipated that the redacted version of the application would be released, without regard to whether the proposal was funded or not. SCHEV staff will inform the Center Director and lead institution the extent of the information released in response to the FOIA request.

Description of Open Meetings Law Exclusion for VRIF

Virginia's open meetings law is codified at Va. Code §2.2-3711, "Closed meetings authorized for certain limited purposes." Item A.48 addresses the requirements for closed meetings of the Virginia Research Investment Committee. The full text is available [here](#).

Application and Submission Information

Invited Full Proposal

While the concept paper was non-binding, applicants invited to submit a full proposal should not change the targeted domain area and should keep the budget near or below the amount included in the concept paper. Invited consortia can submit with a different (eligible) lead institution, submit with a different Center Director or decline to submit.

Please use the full proposal template in Appendix A. Applicants also must submit the data tables in Appendix B. If the proposed domain area of the research center is health sciences, please use the information in Appendix C to complete Section 8 of the full proposal.

- Proposals may be single spaced.
- Font must be either Times New Roman 12 pt. or Arial 11 pt.
- Font for figures, tables, formulas and diagrams can be reduced no smaller than Times New Roman 10 pt. or Arial 9 pt.
- Margins, in all directions, must be at least an inch; margins for illustrations, graphics, diagrams, tables or figures that take up a full page may be reduced no smaller than half an inch.
- Inclusion of links to additional information is allowed; however, reviewers are not required to follow the links or consider the additional information in the scoring of applications.
- Pages should be numbered on the bottom right.
- Inclusion of other information in headers or footers is at the discretion of the applicant.

The full proposal, the corresponding redacted proposal (see FOIA section, above) and the optional Excel budget spreadsheet (if used) should be submitted via a single email to the SCHEV Associate for Research Investment, lynnseuffert@schev.edu. One pdf containing the full proposal and one pdf containing the redacted proposal is preferred. However, the Associate will accept submissions with multiple attachments for each version of the proposal. Please name the attachments so that the Associate can readily distinguish the redacted proposal and also determine that the application packet is complete. If applicants are not submitting a redacted proposal because the application includes no information for which protection is sought, please state that in the email.

Due date for full proposals: March 4, 2019

Budget and Budget Narrative

Please provide a detailed budget for each year of the grant period and cumulatively. The detailed budget should reflect planned expenditures of general fund amounts, bond funds and the required 1:1 matching funds.

Please consider using the template Excel budget spreadsheet available [here](#). Please contact the SCHEV Associate for Research Investment for assistance with the formulas or to resolve issues with the spreadsheet.

Budgets also will be accepted in alternate formats (for example, a format published by an institution's office of sponsored programs or a budget extracted from an institution's electronic research administration portal).

Alternate budget formats should include all the usual direct cost budget categories: salaries/wages, benefits, travel, supplies, equipment, renovations/enhancements, rent, other direct costs, subrecipients (subawards or contracts to collaborating entities or vendors), etc. Alternate formats also should include planned expenditures of general fund amounts, bond funds and the required 1:1 matching funds.

Any amounts requested from VRIF (i.e., included in the "VRIF Request" columns in the template budget) for equipment and renovations/enhancements are assumed to constitute a request for bond funding.

Amounts in the “VRIF Request” columns for all other budget categories are assumed to be requests for general fund monies.

VRIF funds cannot be used for indirect costs.

The amounts for each budget line item must be documented and justified in the budget narrative. For proposals that contain a subaward(s), each subaward must include a separate budget narrative.

Matching Funds Guidelines

The budget narrative should include an explanation of the source(s) of matching funds.

Match requirements:

- Commitment of a 1:1 match is a criteria for eligibility, rather than a review criteria (i.e., additional points will not be awarded for commitments of greater than a 1:1 match; however, applicants can note in their proposals or budget narratives an estimate of the total cost of the project and an indication of the total match that might be expended during the grant period).
- Unrecovered indirects can be counted toward the match (as calculated using the basis in the institution’s negotiated indirect agreement).
- Grantees cannot count toward the match grant awards from VBHRC, CHRB, CIT, Tobacco Commission, GO Virginia, Virginia Economic Development Partnership.
- Grantees cannot count Higher Education Equipment Trust Fund dollars toward the match.
- Grantees cannot match one VRIF grant award (or subaward) with another VRIF grant award (or subaward).
- Use of Education & General Program (E&G) funds to satisfy the match, while not prohibited, should be rare. (E&G revenues are derived mainly from state appropriations and student tuition and fees.)
- Time and effort of personnel who will be paid by the institution (i.e., in-kind effort) usually cannot be counted toward the match (see also, bullet above regarding E&G funds). Please contact SCHEV staff prior to including in-kind time and effort as part of the match. VRIC members will consider unfavorably this source of matching funds when making award decisions.
- The matching funds must be in-hand at time of award (or committed as documented by a legally binding grant award or pledge; applicants must identify which funds are in-hand and which are pledged).
- Documentation of pledges or grant awards should be kept at the institution (not included in the grant application package) and must include a payment or estimated drawdown schedule aligned with the requested grant period. Pledge payment schedules showing receipts to date and scheduled future payments are to be included in progress reports.
- If pledged funds are not received on the expected schedule within the grant period, the university must replace the funds not received with another eligible match or the unmatched portion of the grant award will be rescinded.
- The grantee institution must notify SCHEV staff of unpaid pledges immediately when a gift or grant has been revoked.
- The funds proposed as matching funds cannot be the same funds that have already been committed as a match to another project. However, three-way or circular matches

are allowable. For example, dollars are used as the match for a non-VRIF grant, then that grant is used as a match for VRIF.

- If the match is another grant, that grantmaker's terms and conditions or authorizing legislation must not prohibit use of those funds as a match.
- If the match is another grant, the nexus between the two projects must be clear (as determined by the VRIF peer review panel).
- Expenditure of matching funds must be tracked and reported in progress reports.
- The commitment of matching funds is legally binding and is subject to audit.
- The signature of the applicant's authorized signer indicates that the Vice President/Provost for Research (or equivalent, or designee) has conducted due diligence to ensure the offered match complies with these guidelines.

Application Processing, Review and Award

Upon receipt via email of an application package, SCHEV staff will respond by return email within two business days to confirm receipt.

Review of applications is a three-stage process. The statutes that created VRIF state the criteria to be considered.

The first stage is an administrative review by SCHEV staff to ensure that proposal packets are complete and conform to administrative requirements in these Instructions for Invited Full Proposals.

The statute requires that conforming applications be assigned to an external peer review panel with recognized science and technology expertise. The panel(s) will score and comment on the applications. The statute further states: "Such entities include, but are not limited to, the Virginia Biosciences Health Research Corporation, the Innovation and Entrepreneurship Investment Authority, the Virginia Academy of Science, Engineering and Medicine, or any other entity deemed appropriate by the Council, including a scientific advisory committee created by the Council for the sole purpose of reviewing one or more applications received pursuant to this article."

At the time of publication of these Instructions for Invited Full Proposals, the peer review panel(s) are expected to comprise members of the Virginia Academy of Sciences, Engineering and Medicine; current and former directors of major academic research centers; venture capitalists and/or angel investors; and experienced entrepreneurs with expertise in start-ups created to commercialize the products of research.

Following peer review and in preparation for the third stage of review, SCHEV staff may conduct additional due diligence and/or ask applicants for clarifying information.

SCHEV staff will prepare a summary statement for each proposal that includes information such as the reviewers' scores, written comments, a summary of strengths and weaknesses, or other summary highlights of the peer review panel discussion.

An application may be designated Not Recommended for Further Consideration (NRFC) if it lacks significant and substantial merit; presents serious ethical problems in the protection of human subjects from research risks; or presents serious ethical problems in the use of vertebrate animals, biohazards and/or select agents. Applications designated as NRFC will not proceed to VRIC because such proposals cannot be funded.

After the scores and comments have been summarized and the proposals ranked, in compliance with Va. Code §23.1-3133 E, SCHEV staff will forward to VRIC any proposal receiving a favorable evaluation, along with the scoring or prioritization.

The third stage is review by VRIC. In compliance with Va. Code §2.2-3711, “Closed meetings authorized for certain limited purposes,” these meetings will be closed to the public.

VRIC members will review the proposals, starting with the prioritization, scores and comments of the peer review panel and then adding their expertise and knowledge of the statewide impact and contribution the projects might have, including criteria such as:

- Whether the projected impact of the project merits the investment of state funds
- Members’ prioritization, on a case-by-case basis, of the criteria
- The connection of the project to GO Virginia, if any, including the distribution of grant funding across GO Virginia regions
- The previous and pending state funding for the project and VRIC’s interpretation of the merits of continuing to use state funding to further the progress of the project
- The source of matching funds, with E&G funds and/or in-kind effort viewed least favorably

VRIC will then hold a public meeting where a formal vote will be taken to determine which proposals will be funded. This meeting might occur directly following the closed meeting or on a different date.

SCHEV staff will forward reviewer scores and comments for unfunded proposals to the Center Director.

Finally, per statute, all decisions by VRIC shall be final and not subject to further review or appeal. The Governor may announce any award approved by the Committee.

Reporting Requirements

Reports are required at intervals during the grant period. A final cumulative report also is required. Grantees will be required to continue to report progress on some measures for five years after the end of the grant period. Adjustments might be made to the due dates below, depending on the date of award for each round of competition as well as the timeline and milestones in each proposal.

Annual General Audience Progress Report

VRIC is required to submit a report to the General Assembly each November 1. In preparation for the submission of that report, grantees will submit a general audience progress report by September 30 of each year.

The format for this report is still under development. SCHEV staff anticipate that information of interest to Virginia’s elected representatives, members of the House Appropriations Committee and Senate Finance Committee, and taxpayers will be requested.

Semi-Annual Financial Reports

Semi-annual financial reports are required. These reports will be due on January 31 and July 31, documenting the financial status of the project through December 31 and June 30, respectively.

SCHEV staff will accept reports generated from an institution's research dashboard or other accounting system reporting function.

The reports should include information regarding the total amount awarded, the amount forwarded to the lead institution, the amount encumbered to date, the amount spent to date and the amounts remaining (from the disbursement and total) for each budget category and for the same budget categories for each subaward.

Reports showing the same information for matching funds are required, if possible on the same report or a separate parallel report. For matching funds that were based on a pledge, pledge payment schedules showing receipts to date and scheduled future payments are to be included in progress reports.

Semi-Annual Technical Narrative Progress Reports

On January 31 and July 31, technical progress reports in narrative form will be due, describing achievements through December 31 and June 30, respectively.

Reports Due Upon Request for No-Cost Extension

Requests for no-cost extensions should be made at least sixty (60) days prior to the desired effective date of the requested change. Preferably, grantees should anticipate the need to request a no-cost extension and make that request in concert with a scheduled progress report.

If more than 30 days have passed since the submission of the reports above, grantees will be required to submit reports at the time of a no-cost extension request. In addition to the reports, the request should provide a brief narrative justification for the extension, length of requested extension (maximum one year), amount of unexpended balance and a timeline for activities and expenditure of the remaining funds.

Final Cumulative Narrative and Financial Reports

Final, cumulative narrative and financial reports are due 60 days after the end of the grant period.

Reports Due on Some Measures for Five Years After End of Grant Period

Annually, for five years after the end of the grant period, grantees are required to submit reports documenting continuing progress on some of the indicators listed in Measures and Key Indicators of Progress Toward Goals. Potential indicators to be tracked include:

- Licenses, copyrights, patents, inventions or income-producing processes discovered or arising from research supported in whole or in part by the VRIF
- FDA filings and approvals arising from research supported in whole or in part by the VRIF
- Follow-on grant awards or other funds received as a result of research supported in whole or in part by the VRIF
- Publications in peer-reviewed journals; impact factor of journal, number of times publications are "Cited By" other researchers
- Presentations at national conferences, both peer-reviewed and invited
- Awards bestowed on researchers who are members of research centers supported by VRIF (National Academy membership, etc.)
- Start-ups and spin-off companies created
- Jobs created

More information will be provided to grantees near the end of the grant period.

Award Administration

Information about post-award administration of grants is under development.

SCHEV staff would like to build a relationship with grantees and foster a collaborative approach to addressing issues and removing any roadblocks that arise.

For details regarding post-award revisions that require prior approval, along with other conditions of award, please see Appendix D: Terms and Conditions of Award, specifically Attachment 1. Special Terms and Conditions.

Appendix A: Application Template – Research Center Capacity Building

An invited full proposal must contain the following sections:

1. Cover Sheet
2. Signature of AOR
3. Table of Contents
4. Executive Summary
5. Results from Prior State Funding
6. Description of Pending Proposals for State Funding
7. Proposal Narrative
8. For health sciences research center proposals only – Distinction from the Global Genomics and Bioinformatics Research Institute
9. References Cited
10. Biographical Sketch(es)
11. Budget and Budget Justification
12. Appendix B: Data Tables

1. Cover Sheet (Available [here](#))

2. Signature Page for Authorized Organizational Representative (AOR) (Available [here](#))

3. Table of Contents

4. Executive Summary (2 points; 1 page)

Provide a one-page summary suitable for a general audience. This summary will be posted on the VRIF website if the project is funded. Reviewers will score this section based on whether the summary renders the project comprehensible to a general audience and contains information of interest to tax payers and General Assembly members as they form opinions about the project, the impact of VRIF as a whole and the wisdom of continuing appropriations for VRIF in future budget cycles.

5. Results from Prior State Funding (unscored, but considered by VRIC)

List appropriations by the General Assembly and grants awarded through state-funded competitions to any members of the research center for prior projects within the last five years. Briefly describe the results. Describe the relationship to this proposed project (if none, please state that). You must include information related to the following competitions: VBHRC, CHRB, CIT, Tobacco Commission, GO Virginia, Virginia Economic Development Partnership. Pursuant to Va. Code §23.1-3133 B.1., VRIC will consider this information when determining the merits of continuing to use state funding to further the progress of the project.

6. Description of Pending Proposals for State Funding (unscored, but considered by VRIC)

List pending proposals to state-funded grant competitions or for appropriations from the General Assembly and describe their relationship to this proposed project. You must include information related to the following competitions: VBHRC, CHRB, CIT, Tobacco Commission, GO Virginia, Virginia Economic Development Partnership. Pursuant to Va. Code §23.1-3133 B.2., VRIC will consider this information when determining the merits of continuing to use state funding to further the progress of the project.

7. Proposal Narrative (28 points total; 15 single-spaced pages maximum)

Research Center and Surrounding Ecosystem – History and Current Status (5 points; about 3 pages)

Provide a history of the research center and the surrounding innovation ecosystem, ending with the current status. Please include information about the history of collaboration among the partnering entities, the pipeline of intellectual property that will be tapped (applicants may summarize or aggregate the information provided in the data tables in Appendix B, some of which is related to the IP pipeline), the current process for industry and investors to connect with university research at the center, etc. Please describe identified gaps in the center’s commercialization capacity and in the surrounding innovation ecosystem.

Governance Structure (4 points; up to 2 pages)

Describe the governance structure, including any boards, committees, councils or panels; the roles, accountabilities and privileges of the partners; roles and accountabilities of institutional technology transfer offices (to ensure intellectual property policies that accelerate technology transfer and innovation); and any other relevant project management practices. Please ensure that the governance structure includes mechanisms for self-assessment; incorporating the perspectives of industry and investors; strategic planning; determining research directions and project selection; recruiting and integrating new partners over time; resolving disputes between the partnering entities; managing conflicts of interest; etc. **Inclusion of a mechanism for incorporating external expertise is required.** Memoranda of Understanding or other formal agreement between the partnering entities must be complete and fully executed within the first six months of the grant period.

Required Milestones(1 point; about ½ page)

Please provide information about the milestones below that will be achieved by the research center during the grant period and then estimated at 10 years after grant award.

Milestone	End of Grant Period	December 2028
Research expenditures (annual)		
Invention disclosures (total cumulative)		
Number of completed proof-of-concept projects (total cumulative)		
Patent applications (total cumulative)		
Licenses to in-state companies (total cumulative)		
Start-ups launched (total cumulative)		

Applicant-Identified Milestones and Timeline (2 points; about 1 page)

List the milestones and timeline for the activities proposed in this application. Please review and include relevant metrics listed under Measures and Key Indicators of Progress Toward Goals, above.

Full Description (13 points; about 7 pages)

Thoroughly describe your plan of work and the design of the activities to be undertaken during the grant period. Keep in mind the Call for Concept Papers section describing the Type of Activities. Include the vision, objectives, research thrusts, research plans, barriers the research will address, mechanisms to accelerate innovation, market-pull activities, promotion of entrepreneurship, ecosystem development plans and activities, etc. Explain how the proposed activities will improve the efficiency of the IP pipeline, better connect industry and investors to the center, and integrate the center with the surrounding innovation ecosystem. This description should clearly show the alignment between the size, scale or complexity of the project and the requested length of the grant period and total cost (requested amount plus match). Include the

value-added that each partner brings to the ecosystem. While workforce development is not a focus of VRIF funding, please include a description of the research and entrepreneurial experiences that will be made available to students, if any.

Impact (2 points; about 1 page)

Describe the expected economic impact and the overall impact. Include information about your discussion(s) with representative(s) of the relevant GO Virginia Regional Council(s) and participating organizations. Describe the connection your proposed project has, if any, to the Regional Council plans for diversifying the economy. Please estimate the number of jobs that will be created at the research center, through the launch of start-up companies and through scale-up of existing companies (for example, number of jobs in 1 to 3 years, 4 to 6 years, 6 to 10 years). For overall impact, reviewers will score based on whether the successful completion of the proposed activities will exert a sustained, powerful influence in Virginia and nationally (i.e., contribute to national recognition for Virginia; improve scientific knowledge, technical capability and/or clinical practice; change the field of research, etc.).

Potential Sources of Follow-On Funding (1 point; about ½ page)

Briefly describe your plan to secure the follow-on funding. In scoring this section, reviewers will consider whether the project will be well positioned to attract follow-on funding from the sources identified.

Conclusion (unscored)

Key reasons why your proposal should be funded. State your case in a few sentences.

8. For health sciences research center proposals only – Distinction from the Global Genomics and Bioinformatics Research Institute (unscored, but evaluated by the peer review panel and VRIC)

Please review the planned focus of the Global Genomics and Bioinformatics Research Institute (GGBRI) partnership between INOVA and some of Virginia's public institutions of higher education. Using the information provided in Appendix C, describe how the proposed focus of your research center and associated activities are distinct from that of the GGBRI. If your research center will be utilizing knowledge generated by the areas of research covered by the GGBRI, please describe why it is advantageous to the Commonwealth to fund your center in addition to the funding already appropriated to the GGBRI. Regarding overlap of your proposed research center and/or the named members of it with the proposed research and commercialization activities or the leadership team and researchers at the GGBRI, please explain why your proposed research center is not instead partnering with the GGBRI and competing for the state appropriations for that effort.

9. References Cited (unscored)

Each reference must include the names of all authors, the article and journal title, book title, volume number, page numbers and year of publication. Inclusion of a website address is optional.

10. Biographical Sketch(es) (10 points)

A biographical sketch is required for the Center Director at the lead institution and the Associate or Co-Director(s) responsible for the contributions of the partnering institutions. Biosketches are welcome for other senior or key personnel, including partner-company management personnel. Applicants can choose to use either NIH-style or NSF-style biosketch format. Non-scientist key personnel can submit a resume. Documents are limited to five pages each.

Reviewers will consider the scientific and technical expertise/credibility of named personnel and whether the management and scientific team have the expertise to achieve the goals. Further,

reviewers will score based on their confidence that your proposed collaboration is substantive, with true synergies that will ensure creative debate and innovation and includes personnel with complementary and integrated expertise.

Do not submit any personal information in the biographical sketch. This includes items such as: home address; home telephone or cell phone numbers; home e-mail address; marital status; personal hobbies; etc. Biosketches are subject to release through a FOIA request, even if the proposal is not funded.

11. Budget and Budget Justification (10 points)

Budget and justification must include line items for both VRIF funds and matching funds. Please consider using the template Excel budget spreadsheet posted on the VRIF website [here](#). Reviewers will consider whether personnel are allocating the necessary time to achieve the goals, whether costs are reasonable and allocable to the described activities, whether distribution of funds and resources across partners is appropriate, and whether the applicant has committed a 1:1 match.

Appendix B: Data Tables

[Click on this sentence for a Word version of Appendix B formatted for legal-size paper.](#)

Part I: Partners

Institutions of Higher Education

In this section, please list the institutions of higher education (whether public or private) participating in the research center; include the name and title of the person who will lead the day-to-day effort at each institution and the estimated annual percentage of effort that person will spend.

Further, each participating institution should fill out the tables in Part II.

Businesses

For each business partner, please provide the following information.

Business Name	HQ City, State & Local Office	Number of Employees in Region	Annual Revenue (specify whether total or regional)	Annual R&D Expenditures from Own Funding (Total and in region, if possible)	Annual R&D Expenditures from Other Funding (i.e., federal or other contract) (total and in region, if possible)	Number of Students Hosted for Paid Experiential Learning* at Regional/Local Office in 2018

* Paid experiential learning includes internships, apprenticeships, research experiences, etc.

Other Research Center and Innovation Ecosystem Partners

For other non-higher education institution partners, including federal labs, programs that support the regional innovation ecosystem, etc., please provide the following information.

Organization Name	For-Profit, Non-Profit, Government	Primary Function (accelerator, funder, grantmaker, mentor, convener, industry group, economic development, research, etc.)

Part II: Participating Institution Information

Each institution should complete Tables 1 through 5. Add rows as necessary.

Participating Faculty – Research Effort

Please use the appropriate table below to provide the requested information for faculty members who will be actively involved as formal members of the research center.

Table 1: Tenured Faculty

Name	Title	Department & School	List other centers in which faculty is also a member	Appointment Type (12 month, 9 month, etc.)	Average Annual Research Expenditures Over 3 Years As PI*	Annual Research Effort Percent (Total)	Annual Research Effort Percent Committed to Center Specialty Area (Subset of Total)

Name	Title	Department & School	List other centers in which faculty is also a member	Appointment Type (12 month, 9 month, etc.)	Average Annual Research Expenditures Over 3 Years As PI*	Annual Research Effort Percent (Total)	Annual Research Effort Percent Committed to Center Specialty Area (Subset of Total)

* Use an average of extramural funding expended over fiscal years 2015-2016, 2016-2017, and 2017-2018 on research projects for which the faculty member was the PI or the lead researcher at your institution on a multi-institutional project (i.e., Co-PI). If two faculty members at the same institution were Co-PIs on a single project, list the expenditures under one faculty member only.

Table 2: Tenure-Track Faculty

Name	Title	Department & School	List other centers in which faculty is also a member	Appointment Type (12 month, 9 month, etc.)	Average Annual Research Expenditures Over 3 Years As PI*	Research Effort Percent (Total)	Research Effort Percent Committed to Center Specialty Area (Subset of Total)

* Use an average of extramural funding expended over fiscal years 2015-2016, 2016-2017, and 2017-2018 on research projects for which the faculty member was the PI or the lead researcher at your institution on a multi-institutional project (i.e., Co-PI). If two faculty members at the same institution were Co-PIs on a single project, list the expenditures under one faculty member only.

Table 3: Non-Tenure Track Faculty

Name	Title	Department & School	List other centers in which faculty is also a member	Appointment Type (12 month, 9 month, etc.)	Average Annual Research Expenditures Over 3 Years As PI*	Research Effort Percent (Total)	Research Effort Percent Committed to Center Specialty Area (Subset of Total)

* Use an average of extramural funding expended over fiscal years 2015-2016, 2016-2017, and 2017-2018 on research projects for which the faculty member was the PI or the lead researcher at your institution on a multi-institutional project (i.e., Co-PI). If two faculty members at the same institution were Co-PIs on a single project, list the expenditures under one faculty member only.

Participating Faculty – Scholarly, Research and Innovation Output

Collectively, for those faculty listed in the tables above, please provide the following information about their research and innovation output.

Table 4: Recent Activity of Participating Faculty

Activity	July 1, 2014 – June 30, 2015	July 1, 2015 – June 30, 2016	July 1, 2016 – June 30, 2017	July 1, 2017 – June 30, 2018
Total research expenditures				
Research expenditures in center specialty area (subset of figure above)				
Research expenditures from industry source (subset of first line)				
Research expenditures in center specialty area from industry source (subset of figure above)				
Total invention disclosures submitted to TTO (any domain area)				

Activity	July 1, 2014 – June 30, 2015	July 1, 2015 – June 30, 2016	July 1, 2016 – June 30, 2017	July 1, 2017 – June 30, 2018
Invention disclosures submitted to TTO in center specialty domain area (subset of figure above)				
Total patent applications filed (any domain area)				
Total patent applications filed in center specialty domain area (subset of figure above)				
Total licenses executed				
Total companies launched				
Number and value of SBIR/STTR awards to companies included above				
Number of undergrads participating in research experiences with the listed faculty				

Table 5: Cumulative Activity of Participating Faculty – All Research Domain Areas

Activity	2008-2018 (cumulative)	Notes
Patent applications filed		
Patents awarded		
Patents pending		
Licenses executed		
Companies launched		
Number and value of SBIR/STTR awards to companies included above		
Number of exits or IPOs		
Number of high-growth companies*		Please describe your definition of high growth here.

* The Organization for Economic Co-operation and Development (OECD) established a standard definition of high-growth: “**annualized revenue growth of 20 percent or more each year during a three-year period, or 72.8 percent over the entire three years.**” Inc. Magazine’s Inc 5000 lists companies that have revenue exceeding \$2 million in the previous year, and revenue three-years prior to that in excess of \$100,000 and that **increased revenue by 43% each year at the median and employment by 35% at the median over the past three years.** Economists at the Census Bureau “demonstrated that firms achieving **one-year growth rates in revenue above 25 percent** account for 12 percent of firms but 50 percent of economy-wide revenue in a given year. Businesses achieving **one-year employment growth above 25 percent** account for 17 percent of firms yet 59 percent of job creation.” Source: Brookings: <https://www.brookings.edu/research/high-growth-firms-and-cities-in-the-us-an-analysis-of-the-inc-5000/>

Appendix C: For health sciences research center proposals only – Global Genomics and Bioinformatics Research Institute – Areas of Research Focus

Strategy and Focus



GGBRI Mission

- The overarching mission of the Institute is to improve the quality of the human condition and its environment
- Five key areas of research
 - Genetics and Genomics, understanding how the genome regulates its function in health and disease
 - Structural Biology of Disease/Systems Approach
 - Developmental Biology
 - Computational Biology
 - Biomedically Directed-Engineering

Research Focus and Cores

Research Focus

- Genetic and genomic regulation of the functioning genome
- Understanding DNA repair mechanisms and their regulation
- Understanding specific regulation of gene transcription via DNA binding proteins
- Understanding the role of DNA repeats in subsequent mutations and disease risk
- Regulation of gene expression
- Methylation, chromatin heterochromatin regulation
- Regulation of chromosome organization
- Regulatory mechanisms in splice variation
- RNA editing and RNA determined regulation of gene expression

Clinical Research Opportunities

- Genomic medicine
- Phenotyping clinical conditions
- Advancing molecular pathology/diagnostics
- Supporting translational research in humans
- Developing models of disease risk and progression
- Characterizing in-vitro models of disease
- Developing specific gene therapies
- Utilizing longitudinal disease cohorts

Research Focus

- Protein-DNA interactions
- Translational regulation and protein modification
- Gene-environment interactions
- Gene-microbiome interactions and disease
- Metabolomics
- Gene-behavior interactions and disease
- Mechanisms of aging
- Subcellular imaging
- Integration of anatomic imaging and gene expression

Clinical Research Opportunities

- Acute injury repair
- Infectious disease resistance
- Metabolomics
- Endocrine organ system function
- Lipid metabolism and obesity
- Maternal fetal medicine congenital defects, preterm birth, autism
- Childhood obesity
- Biomarkers of disease and targets for drug discovery
- Neural development in childhood
- Ischemic brain injury and recovery
- Cognitive degeneration

Research Focus

- Embryogenesis and genetic regulation of in-utero development
- Protein conformational switches in development and disease
- Genetic regulation of chromatin folding
- Neuro-glial interactions in the developing brain
- Regulation of asymmetric cell division
- Stem cell biology

Clinical Research Opportunities

- Maternal fetal biology and medicine
- Still birth causes
- Causes of very early and extreme pre-term birth
- Understanding the basis of inherited disease risk
- Placental biology and its role in fetal development
- Development of diagnostics and therapeutics applicable to gestation and fetal development
- In utero fetal interventions

Research Focus

- Bioinformatics
- Large scale data harmonization and integration
- Data standardization and analytics
- Mathematical modeling of complex systems
- Modeling of cellular communication pathways
- Signal transduction
- Subcellular real time imaging algorithms
- Modeling of drug-gene interactions
- Analytics to support large scale genomic and proteomic data sets
- Integration of molecular imaging and genomic/proteomic data sets
- Integrating applications of machine learning into large scale data sets
- Computer engineering for next generation biology

Clinical Research Opportunities

- Subtyping of complex disease phenotypes at the molecular level
- Development of computational models of disease and care delivery
- Clinical and genetic models of disease risk
- Models of progression from risk and wellness to measurable signs of disease
- Developing in-vitro genomic based disease models
- Developing specific gene therapies

Research Focus

- Biomechanical modeling
- Developing technologies for genomic research
- Developing in-vitro systems utilizing computer driven micro circuitry, microprocessors, microfluidics, molecular motors, single molecule tracking, protein modification technology
- Developing real time imaging systems for subcellular molecular imaging
- Developing micro systems robotics
- Developing in-vitro microsystems to support 3-D tissue growth on a micro chip for drug assays and drug development

Clinical Research Opportunities

- Development of biosensors for human use in translational research and in actual care
- Applications of system engineering approaches to disease specific translational research
- Preclinical drug development assays and modeling systems
- Refining tools and methods for intrauterine interventions and monitoring
- Developing models and tools to assist work in tissue regeneration and transplantation

- Biorepository
- Flow Cytometry & Immune Monitoring
- Next Generation Sequencing
- Microscopy and Imaging
- Proteomics – Mass Spectrometry
- Histology/ Pathology
- Cell / Tissue Culture
- Nuclear Magnet Resonance (NMR)
- Cellular/Molecular Assay
- Genomic Extraction
- Genome Editing
- Cell Model
- Bioinformatics / Biostatistics
- Polymerase Chain Reaction (PCR)*
- Walk-in Cold Room*
- Freezers Room*
- Glassware/ Autoclave*
- Fume Hood Alcove

* Also distributed on typical lab floors



- The proteomics core lab represents a scientific collaboration between GMU, UVA and Inova
- Principal investigators are Thomas Conrads Ph.D. (Inova) and Chip Petricoin Ph.D. (GMU)
- Core facility will be located in the GGBRI

Appendix D: Assurances and Certifications – Terms and Conditions of Award

Assurances and Certifications

The Authorized Organizational Representative (AOR) signing the signature page is assuring and certifying the following:

Assurance Regarding Freedom of Information Act Exclusion: The Virginia Freedom of Information Act does NOT completely protect unfunded or funded grant proposals from exposure. The AOR is assuring that the applicant institution has consulted with the project team and the attorney general representative, if necessary, regarding whether a written request for protection is being made to the Virginia Research Investment Committee in accordance with Va. Code §2.2-3705.6, item 28. If the applicant is invoking the exclusion contained in item 28, the AOR is assuring that a redacted version of the application packet is being submitted that identifies with specificity the data, information or other materials for which protection is sought and states the reason why protection is necessary. The Committee shall determine whether the requested exclusions from disclosure are necessary to protect the trade secrets, financial information or research-related information of the applicant. The Committee shall make a written determination of the nature and scope of the protection to be afforded by it under the Va. Code.

Certification Regarding Organizational Support: The AOR is certifying that there is organizational support for this proposal, that matching funds will be secured as described in the proposal and that the Vice President for Research (or equivalent, or designee) has conducted due diligence to ensure the offered match complies with the guidelines in the Instructions for Invited Full Proposals. Further, if the proposed plan for matching funds does not materialize, the AOR is certifying that the institution will submit a revised plan to comply with the required 1:1 match.

Certification Regarding Collaborating Entity AOR Approval: The applicant AOR is certifying that the AORs (or equivalent) of all collaborating entities have made the same assurances and certifications and that documentation of such exists.

Certification Regarding State Funds: The AOR is certifying that the organization understands that VRIF is awarding state funds. The organization will comply with all rules and regulations regarding state funds, including but not limited to the Commonwealth Accounting Policies and Procedures Manual, the Virginia Public Procurement Act (when applicable) and the Library of Virginia's Virginia Public Records Management Manual.

Certification Regarding Conflict of Interest: The AOR is certifying that the organization has implemented and is enforcing a written policy on conflicts of interest in research and that, to the best of his/her knowledge, all financial disclosures required by the conflict of interest policy were made; and that conflicts of interest, if any, were, or prior to the organization's expenditure of any funds under the award, will be, satisfactorily managed, reduced or eliminated in accordance with the organization's conflict of interest policy.

Certification Regarding Compliance with the Animal Welfare Act. The AOR is certifying that proposed projects involving use of any vertebrate animal for research or education will be approved by the submitting organization's Institutional Animal Care and Use Committee (IACUC) before or substantially concurrent with an award. If the involvement of animals is indefinite at the time of award, the AOR is certifying that, prior to conducting any animal activities, and prior to expending any grant funds for those animal activities, IACUC approval will

be obtained. It is an institutional responsibility to ensure that the research described in the application is congruent with any corresponding protocols approved by the IACUC.

Certification Regarding Compliance with the Common Rule. The AOR is certifying that proposed projects involving research with human subjects will ensure that subjects are protected from research risks in conformance with the relevant federal policy known as the Common Rule (Federal Policy for the Protection of Human Subjects). All projects involving human subjects must either (1) have approval from the organization's Institutional Review Board (IRB) before or substantially concurrent with issuance of a VRIF award or (2) maintain documentation that the IRB has declared the research exempt from IRB review, in accordance with the applicable subsection, as established in section 101(b) of the Common Rule.

If human subjects research is anticipated within the period of the award but definite plans for involvement of human subjects cannot be described in the application, then the AOR is certifying that, prior to the involvement of human subjects, the project will obtain IRB approval or exemption. It is an institutional responsibility to ensure that the human subjects research described in the application is congruent with any corresponding protocols approved by the IRB.

Certification Regarding Education in the Protection of Human Research Participants. The AOR is certifying that, if the proposed project involves research with human subjects, all senior/key personnel involved in human subjects research have received training in the protection of human subjects. Senior/key personnel include all individuals responsible for the design or conduct of the study, including senior/key personnel of collaborating partner entities or alternate performance sites if they are participating in research that involves human subjects.

Certification Regarding Responsible Conduct of Research: The AOR is certifying that the institution has a plan to provide appropriate training and oversight in the responsible and ethical conduct of research to undergraduates, graduate students and postdoctoral researchers who will be supported by VRIF to conduct research.

Terms and Conditions

DO NOT SIGN AND SUBMIT AT TIME OF APPLICATION

Grantor and grantee agree that this MOU will be performed in accordance with the following:

1. The statement of work and budget for this award are as specified in the grantee's proposal submitted _____ (date) _____ and incorporated herein by reference. In its performance of the statement of work, grantee shall be an independent entity and not an employee or agent of grantor.
2. Matters concerning the performance of this award should be directed to the appropriate party's contact, as shown in Attachments 3A & 3B.
3. Matters concerning the request or negotiation of any changes in the terms, conditions or amounts cited in this award agreement, and any changes requiring prior approval, should be directed to the appropriate party's Contact, as shown in Attachments 3A & 3B. Any such changes made to this MOU require the written approval of each party's Authorized Official as shown in Attachments 3A & 3B.
4. Incorporated into this MOU by reference are the VRIF Instructions for Invited Full Proposals, the entirety of the grantee's application packet including the assurances and certifications, the special terms and conditions in Attachment 1 and the general terms and conditions in Attachment 2.

By an Authorized Official of Grantor

By an Authorized Official of Grantee

(To be signed only if award is made)

(To be signed only if award is made)

Signature

Signature

Printed Name

Printed Name

Title

Title

Date: _____

Date: _____

Attachment 1: Special Terms and Conditions

Applicability

The terms and conditions in the MOU and all attachments apply directly to the grantee and also apply to collaborating entities, subrecipients and contractors. The grantee is accountable for the performance of the project, program or activity; the appropriate expenditure of funds under the award by all parties; and all other obligations of the grantee, as cited in the MOU and all attachments.

Site Visits

VRIC members and/or staff may conduct site visits during the course of the grant period.

Changes

Funds may not be transferred between the budget detailing the planned expenditure of general fund amounts and the budget detailing the planned expenditure of bond funds.

The changes listed below require the prior approval of the grantor. Requests should be directed to the grantor's Contact, as shown in Attachments 3A & 3B.

- Changes to the scope of the project
- Changes to milestones and timelines that impact the schedule for disbursement of funds
- Changes to collaborating entities
- Changes to key personnel named in the approved proposal
- Reduction of effort of the Center Director of 10% or more from the level in the approved proposal
- Plans for continued progress during extended absence of the Center Director
- Changes to the budget detailing the planned expenditure of general fund amounts resulting in a deviation of 20% or more in any budget category; the request must include the current allocation of resources along with specific detail and justification for the reallocation

No-cost extensions require the approval of the grantor. Requests for a no-cost extension should be addressed to and received by the Contact, as shown in Attachments 3A & 3B, not less than sixty (60) days prior to the desired effective date of the requested change. See "Reporting Requirements" section of the Instructions for Invited Full Proposals.

Disbursement of Funds, Accounting and Audit

After receiving a written request from the Virginia Research Investment Committee, grantor will authorize the State Comptroller and the Virginia Department of Planning and Budget to release the first payment to the grantee. The first payment will be sufficient for the grantee to achieve the first milestone on the timeline included in the grantee's proposal.

After initial disbursement, subsequent payments will be contingent upon successful performance against key milestones and other performance standards outlined in the proposal. Non-compliance with the terms and conditions of this award, including reporting requirements, and/or failure to achieve milestones on the approved timeline could result in a hold on disbursement of additional funds until the grantee is in compliance.

All payments shall be considered provisional and subject to adjustment within the total estimated cost in the event such adjustment is necessary as a result of an adverse audit finding against the grantee.

Award monies not expended by the end of the period of performance must be returned.

The grantee will oversee the expenditure of all grant funds by all parties and ensure that all funds are expended in strict compliance with state rules, regulations and guidelines, the terms and conditions of this MOU, professional accounting standards and all applicable state laws and requirements.

The grantee will maintain systematic accounting records of all expenditures relating to this award, including the supporting source documentation. Records will be retained by the grantee in accordance with Library of Virginia Record Retention Policy.

Records will be available for inspection and/or audit by SCHEV, the Virginia Auditor of Public Accounts or other appropriate entity.

Transfer of Award or Change of Center Director

If the Center Director leaves the grantee institution during the grant period, the grant will not be transferred to a new institution. The grantee institution will have the opportunity to propose a new Center Director, subject to approval of SCHEV staff and the Chair of the VRIC. If an agreement cannot be reached regarding assignment of a new Center Director, a collaborating institution, if any, could propose to become the lead grantee. If no agreement can be reached, the award will be terminated and unexpended and unobligated funds must be returned.

Reporting

Report type and due dates are required as detailed in the Instructions for Invited Full Proposals.

Future Applications to VRIF

Award recipients and their partners who are delinquent in any VRIF obligation are not eligible to apply for or receive future VRIF funding until obligations are resolved.

Termination of Award

SCHEV may terminate this award in the event of non-compliance with the terms and conditions of this MOU, significant lack of progress including failure to achieve milestones on the timeline set forth in the proposal, or other extenuating conditions. In the case of termination, the grantee will return any unexpended and unobligated funds.

Acknowledgments

Professional publications or presentations resulting from activities supported by this award must acknowledge the Virginia Research Investment Fund.

Acknowledgments of the Virginia Research Investment Fund are appreciated on poster presentations, printed programs, news releases, web news, e-mail alerts or announcements regarding grant-funded activities.

Attachment 2: General Terms and Conditions

- A. **VENDORS MANUAL**: NA
- B. **APPLICABLE LAWS AND COURTS**: This contract shall be governed in all respects by the laws of the Commonwealth of Virginia and any litigation with respect thereto shall be brought in the courts of the Commonwealth. The agency and the grantee are encouraged to resolve any issues in controversy arising from the award of the contract or any contractual dispute using Alternative Dispute Resolution (ADR) procedures (Code of Virginia, §2.2-4366). ADR procedures are described in Chapter 9 of the Vendors Manual. The grantee shall comply with all applicable federal, state and local laws, rules and regulations.
- C. **ANTI-DISCRIMINATION**: By signing this contract, the grantee certifies to the State Council of Higher Education for Virginia that they will conform to the provisions of the Federal Civil Rights Act of 1964, as amended, as well as the Virginia Fair Employment Contracting Act of 1975, as amended, where applicable, the Virginians With Disabilities Act, the Americans With Disabilities Act and §2.2-4311 of the Virginia Public Procurement Act (VPPA). The grantee shall not discriminate against any recipient of goods, services or disbursements made pursuant to the contract on the basis of the recipient's religion, religious belief, refusal to participate in a religious practice or on the basis of race, age, color, gender or national origin and shall be subject to the same rules as other organizations that contract with public bodies to account for the use of the funds provided; however, if the faith-based organization segregates public funds into separate accounts, only the accounts and programs funded with public funds shall be subject to audit by the public body. (Code of Virginia, §2.2-4343 1.E.).
1. During the performance of this contract, the grantee agrees as follows:
 - a. The grantee will not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, age, disability or any other basis prohibited by state law relating to discrimination in employment, except where there is a bona fide occupational qualification reasonably necessary to the normal operation of the grantee. The grantee agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.
 - b. The grantee, in all solicitations or advertisements for employees placed by or on behalf of the grantee, will state that such grantee is an equal opportunity employer.
 - c. Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient for the purpose of meeting these requirements.
 2. The grantee will include the provisions of 1. above in every subcontract or purchase order over \$10,000, so that the provisions will be binding upon each subcontractor or vendor.
- D. **ETHICS IN PUBLIC CONTRACTING**: By signing this contract with the State Council of Higher Education for Virginia, the grantee certifies that their offer is made without collusion or fraud and that they have not offered or received any kickbacks or inducements from any other contractor, supplier, manufacturer or subcontractor in connection with their offer and that they have not conferred on any public employee having official responsibility for this transaction any payment, loan, subscription, advance, deposit of money, services or

anything of more than nominal value, present or promised, unless consideration of substantially equal or greater value was exchanged.

- E. **IMMIGRATION REFORM AND CONTROL ACT OF 1986**: By signing this contract with the State Council of Higher Education for Virginia, the grantee certifies that the grantee does not, and shall not during the performance of the contract, knowingly employ an unauthorized alien as defined in the federal Immigration Reform and Control Act of 1986.
- F. **DEBARMENT STATUS**: By signing this contract, grantee shall certify that they are not currently debarred by the Commonwealth of Virginia from contracts for the type of activities covered by the Scope of Work/proposal, nor are they an agent of any person or entity that is currently so debarred.
- G. **ANTITRUST**: By entering into this contract, the grantee conveys, sells, assigns and transfers to the State Council of Higher Education for Virginia all rights, title and interest in and to all causes of action it may now have or hereafter acquire under the antitrust laws of the United States and the Commonwealth of Virginia, relating to the particular goods or services purchased or acquired by the State Council of Higher Education for Virginia under said contract.
- H. **MANDATORY USE OF STATE FORM AND TERMS AND CONDITIONS FOR IFBs AND RFPs**: NA
- I. **CLARIFICATION OF TERMS**: NA
- J. **PAYMENT**: See “Disbursement of Funds, Accounting and Audit” in Attachment 1: Special Terms and Conditions.
- I. **TESTING AND INSPECTION**: The State Council of Higher Education for Virginia reserves the right to conduct any test/inspection it may deem advisable to assure goods and services conform to the specifications in the Scope of Work.
- J. **ASSIGNMENT OF CONTRACT**: A contract shall not be assignable by the grantee in whole or in part without the written consent of the State Council of Higher Education for Virginia.
- K. **PRECEDENCE OF TERMS**: The following General Terms and Conditions VENDORS MANUAL (NA), APPLICABLE LAWS AND COURTS, ANTI-DISCRIMINATION, ETHICS IN PUBLIC CONTRACTING, IMMIGRATION REFORM AND CONTRAL ACT OF 1986, DEBARMENT STATUS, ANTITRUST, MANDATORY USE OF STATE FORM AND TERMS AND CONDITIONS (NA), CLARIFICATION OF TERMS (NA), PAYMENT (NA) shall apply in all instances. In the event there is a conflict between any of the other General Terms and Conditions and any Special Terms and Conditions, the Special Terms and Conditions shall apply.
- L. **QUALIFICATIONS OF (BIDDERS/OFFERORS)**: NA
- M. **TESTING AND INSPECTION**: NA (duplicate of I. above)
- N. **ASSIGNMENT OF CONTRACT**: NA (duplicate of J. above)
- O. **CHANGES TO THE CONTRACT**: See Attachment 1: Special Terms and Conditions.
- P. **DEFAULT**: See Attachment 1: Special Terms and Conditions.

- Q. **TAXES:** Sales to the Commonwealth of Virginia are normally exempt from state sales tax. State sales and use tax certificates of exemption, Form ST-12, will be issued upon request.
- R. **USE OF BRAND NAMES:** NA
- S. **TRANSPORTATION AND PACKAGING:** NA
- T. **INSURANCE:** NA
- U. **ANNOUNCEMENT OF AWARD:** NA
- V. **DRUG-FREE WORKPLACE:** During the performance of this contract, the grantee and subcontractors agree to provide a drug-free workplace for the grantee's employees. Grantee will inform employees that the unlawful manufacture, sale, distribution, dispensation, possession or use of a controlled substance or marijuana is prohibited in the grantee's workplace.
- W. **NONDISCRIMINATION OF GRANTEES:** Grantee shall not be discriminated against because of race, religion, color, sex, national origin, age, disability, faith-based organizational status, any other basis prohibited by state law relating to discrimination in employment or because grantee employs ex-offenders unless the State Council of Higher Education for Virginia has made a written determination that employing ex-offenders on the specific contract is not in its best interest. If the award of this contract is made to a faith-based organization and an individual, who applies for or receives goods, services or disbursements provided pursuant to this contract, objects to the religious character of the faith-based organization from which the individual receives or would receive the goods, services or disbursements, the public body shall offer the individual, within a reasonable period of time after the date of his objection, access to equivalent goods, services or disbursements from an alternative provider.
- X. **eVA BUSINESS-TO-GOVERNMENT VENDOR REGISTRATION, CONTRACTS AND ORDERS:** NA
- Y. **AVAILABILITY OF FUNDS:** The parties herein understand and agree that the agency shall be bound hereunder only to the extent of the funds available or which may hereafter become available for the purpose of this agreement.
- Z. **SET-ASIDES:** NA
- AA. **BID PRICE CURRENCY:** NA
- BB. **AUTHORIZATION TO CONDUCT BUSINESS IN THE COMMONWEALTH:** NA

Additional Terms and Conditions

- A. **RENEWAL OF CONTRACT:** NA
- B. **ADDITIONAL INFORMATION:** NA
- C. **DELIVERY POINT:** N/A
- D. **eVA Business-To-Government Contracts and Orders:** NA

- E. **PRIME GRANTEE RESPONSIBILITIES**: The grantee shall be responsible for completely supervising and directing the work under this contract and all subcontractors that he may utilize, using his best skill and attention.

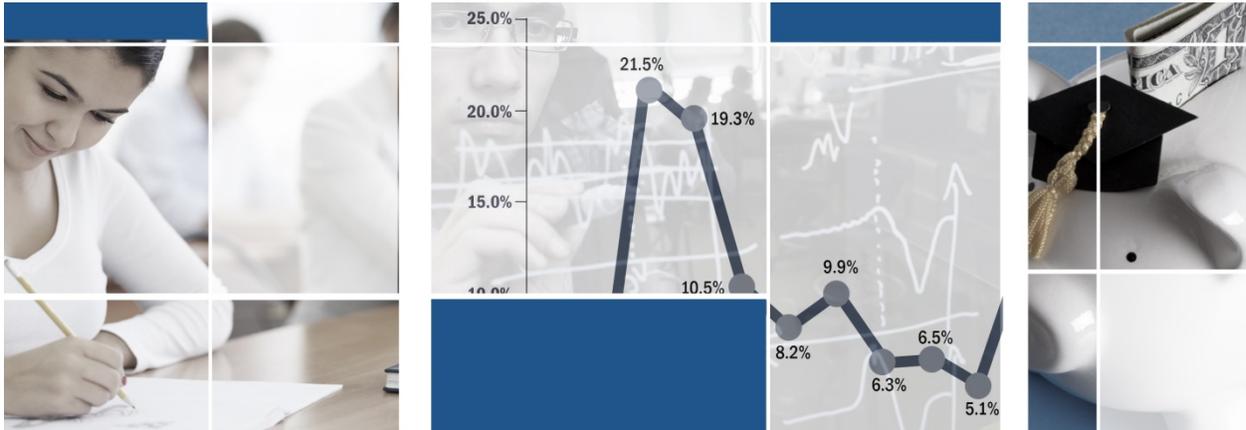
Subcontractors who perform work under this contract shall be responsible to the prime grantee. The grantee agrees that he is as fully responsible for the acts and omissions of his subcontractors and of persons employed by them as he is for the acts and omissions of his own employees.

- F. **PROPOSAL ACCEPTANCE PERIOD**: NA

- G. **WARRANTY**: NA

- H. **SUBCONTRACTS**: No portion of the work shall be subcontracted without prior written consent of the purchasing agency. In the event that the grantee desires to subcontract some part of the work specified herein, the grantee shall furnish the purchasing agency the names, qualifications and experience of their proposed subcontractors. The grantee shall, however, remain fully liable and responsible for the work to be done by its subcontractor(s) and shall assure compliance with all requirements of the contract.

August 13, 2019



Virginia Research Investment Fund Call for Proposals – Round 3 Research Commercialization Advancement Plans

Activity	Key Dates
Call for Proposals Issued	August 13, 2019
Proposal Due Dates: Institutions may submit one proposal on either due date A or due date B	A. October 21, 2019 B. January 13, 2020
Award Announcement	A. December 10, 2019 B. TBD, March-April 2020
Estimated Start Date	A. January 1, 2020 B. TBD, April-May 2020

Table of Contents

Virginia Research Investment Fund 2

 Commercialization of Academic Research; Economic Development 2

 Statutory Purpose and Goals 2

 Study to Assess Virginia’s Research Assets 2

Virginia Research Investment Committee..... 2

Best Practices and Shared Values in Principled Grantmaking..... 3

Virginia’s Freedom of Information Act and Open Meetings Law 3

Description of Funding Opportunity 5

 Eligible Applicants 5

 Limited Submission 5

 Type of Activities 5

 Award Type and Amount..... 5

 Matching Funds Required..... 5

 Period of Performance 6

Application Contents and Submission Information 6

 Application Contents 6

 Application Submission 8

Application Processing, Review and Award 8

Reporting Requirements 9

Award Administration..... 9

Appendix A: Synopsis of Opportunities to Advance Commercialization Identified by
TEconomy Partners..... 10

Appendix B: Assurances and Certifications – Terms and Conditions of Award 15

Virginia Research Investment Fund

Commercialization of Academic Research; Economic Development

In recent years, several Virginia governmental entities have focused on the relationship between the commercialization of academic research and economic development. Current Governor Northam issued “A Comprehensive Economic Development Policy for the Commonwealth” (the Comprehensive Policy) on December 7, 2018. Former Governor McAuliffe issued Executive Orders #23 and #26, regarding the establishment of the New Virginia Economy workforce initiative, strategic plan and steering committee. The State Council of Higher Education for Virginia issued The Virginia Plan for Higher Education. The General Assembly created the Virginia Initiative for Growth and Opportunity in Each Region (GO Virginia), the Virginia Research Investment Fund (VRIF) and the Virginia Research Investment Committee (VRIC).

Statutory Purpose and Goals

The 2016 Virginia General Assembly passed legislation to support the academic research enterprise in the Commonwealth, creating the Virginia Research Investment Fund (VRIF) and an awarding body, the Virginia Research Investment Committee (VRIC). Prospective applicants are encouraged to review the [amended statutes in full](#).

Study to Assess Virginia’s Research Assets

In 2017, SCHEV, on behalf of the Virginia Research Investment Committee, launched a comprehensive study to assess the Commonwealth’s research assets, including those at its public universities, federal research facilities and private-sector companies. SCHEV retained TEconomy Partners, LLC, to conduct the study, which was completed in January 2018. A final report and three detailed analyses are available on the right side bar [here](#).

The third detailed analysis at the link above entitled, “Phase II – Environmental Scan of University Technology Transfer, Commercialization and Industry Partnership Activities,” includes 34 recommendations related to technology transfer in Virginia.

That is the focus of this Round 3 grant competition.

Virginia Research Investment Committee

The Virginia Research Investment Committee (VRIC) is charged by statute to evaluate applications, taking into account the review, scoring or prioritization by a panel of peer reviewers, and then to decide whether to approve an application for an award of a grant from the Fund (§23.1-3133 E & F).

Membership on VRIC is established by §23.1-3132. The Committee consists of five ex officio members and four non-legislative citizen members who are also members of the Virginia Growth and Opportunity (GO Virginia) Board.

Ex officio members:

- Director of the Council – Peter Blake (Chair)
- Secretary of Commerce and Trade – Brian Ball
- Secretary of Finance – Aubrey Layne
- Staff Director of the House Appropriations Committee – Robert Vaughn
- Co-Directors of the Senate Finance Committee – April Kees and Jason Powell

Citizen members from GO Virginia:

- James “Jim” Dyke (appointed by the Governor)
- Heywood Fralin (appointed by the Senate)
- Doug Juanarena (appointed by the Governor)
- Todd Stottlemeyer (appointed by the House of Delegates)

Committee members’ terms on VRIC are coincident with their terms in office and their terms on the GO Virginia Board, respectively.

Best Practices and Shared Values in Principled Grantmaking

To maintain public trust, these shared values drive VRIC best practices in principled grantmaking and form the foundation for the guidelines that govern the VRIF proposal, peer review and award processes. These shared values closely follow the core values of the National Institutes of Health.

Expert Assessment: Expertise on peer review panels will be suitable for evaluating the potential impact of the proposed work. No proposals will be funded that were not favorably evaluated by a peer review panel.

Transparency: Decisions for awards will be made solely using published review criteria.

Impartiality: Inappropriate influences will be removed from the review process. Award decisions will be rendered without the influence of conflicts of interest or the appearance of conflicts of interest. Awards will be made without bias or predisposition, either personal or professional. Awards will not be made based on predetermination.

Fairness: All applications will be evaluated using the same review processes. Decisions will be rendered based on information included in the proposal. ***After a call for proposals is issued for a round of funding, all conversations between institutions/researchers and VRIC members about specific projects will cease.***

Privacy Protection for Applicants and Peer Review Panel Members: Peer review panel members and VRIC members will honor the spirit of the FOIA exclusions and closed meeting allowances for VRIF processes to ensure the privacy protection of applicants and peer reviewers.

Virginia’s Freedom of Information Act and Open Meetings Law

Introduction

The Virginia Freedom of Information Act (FOIA) does not provide the same protection from exposure as federal Sunshine Laws for unfunded or funded grant proposals. Applicants should consult with their institution’s counselor from the Office of the Attorney General.

Required Action: Applicants must make a written request for protection, identifying with specificity the data, information or other materials for which protection is sought and stating the reason why protection is necessary. Please follow the directions below.

Description of FOIA Exclusion for VRIF

The Virginia Freedom of Information Act (FOIA) as codified at Va. Code §2.2-3705.6 Item 28 addresses protection for proposals submitted to VRIC. Please read the entirety of Item 28, available [here](#).

The statute allows only the following information contained in a public record to be excluded from the mandatory disclosure provisions: Information relating to a grant application, or accompanying a grant application, submitted to the Virginia Research Investment Committee, to the extent that such records would reveal:

1. Trade secrets as defined in the Uniform Trade Secrets Act (§59.1-336 et seq.), disclosure of which would be harmful to the competitive position of a party to the grant application.
2. Financial information of a party to the grant application that is not a public body, including balance sheets and financial statements, that are not generally available to the public through regulatory disclosure or otherwise, disclosure of which would be harmful to the competitive position of a party to the grant application.
3. Research-related information produced or collected by a party to the grant application in the conduct of or as a result of study or research on medical, rehabilitative, scientific, technical, technological or scholarly issues, when such information has not been publicly released, published, copyrighted or patented, disclosure of which would be harmful to the competitive position of a party to the grant application.

The statute requires that the request for protection by applicants occur at the time the materials are submitted to VRIC.

Item 28 also gives VRIC the authority to approve or deny the request for protection.

Directions for Requesting Protection from Mandatory Disclosure

Applicants should submit two versions of their application packet. In one version, applicants should redact the information for which protection is sought. For each redaction, applicants should indicate (in the margin, via comments added to a pdf or on a separate cover sheet) the reason why protection is necessary, keeping in mind that the statute allows three types of information to be protected when disclosure would be harmful to the competitive position of a party to the grant application.

SCHEV staff will notify applicants within two weeks of submission whether their request has been approved. If the request was not approved, SCHEV staff will work with applicants to navigate a path to protection or withdraw the application.

SCHEV Response to FOIA Request

In the event that SCHEV receives a FOIA request, the decision regarding what, if any, information is to be withheld from disclosure pursuant to the Virginia Freedom of Information Act rests within the sole discretion of the SCHEV FOIA officer, SCHEV staff, the VRIC Chair and SCHEV's Attorney General representative. It is anticipated that the redacted version of the application would be released, without regard to whether the proposal was funded or not. SCHEV staff will inform the lead applicant institution the extent of the information released in response to the FOIA request.

Description of Open Meetings Law Exclusion for VRIF

Virginia's open meetings law is codified at Va. Code §2.2-3711, "Closed meetings authorized for certain limited purposes." Item A.48 addresses the requirements for closed meetings of the Virginia Research Investment Committee. The full text is available [here](#).

Description of Funding Opportunity

Eligible Applicants

Eligible lead applicants are public institutions of higher education in Virginia.

Limited Submission

Each public institution of higher education may submit one proposal as lead applicant. Institutions can participate as a partner in unlimited additional applications. Two due dates are offered to provide an option for institutions desiring additional time to develop a proposal. No advantage will accrue to institutions submitting on the earlier due date.

Type of Activities

The purpose of this grant competition is to support public institutions to implement best practices for streamlining the commercialization of the products of university research.

Applicants should propose activities that align with recent reports and recommendations related to advancing and enhancing the transformation of university practices for commercializing the products of university research. Applicants are encouraged to review the reports listed below and propose to use grant funds to implement at their institutions recommendations and best practices contained in the reports.

- TEconomy Partners Detailed Analysis: Phase II – Environmental Scan of University Technology Transfer, Commercialization and Industry Partnership Activities: Practices, Policies, Organization and Opportunities to Advance (January 2018); see Appendix A of this Call for Proposals for a synopsis of the recommendations, expected outcomes for the recommendations keyed to each stage of commercialization, and recommendations that are not applicable to this competition
- APLU: [Technology Transfer Evolution: Driving Economic Prosperity](#) (November 2017)
- University of Michigan Economic Growth Institute: [Maximizing Innovation and Technology Commercialization of Federal Research Investments](#) (March 2019)

If an applicant wishes to propose to implement a best practice that is not contained in these reports, applicants should cite the source and provide a link.

Award Type and Amount

Institutions are eligible to request grant amounts based on their total research expenditures for FY2019. If FY2019 data is not yet available, please use FY2018 expenditure data.

- Research expenditures over \$100 million: up to \$400,000
- Research expenditures between \$25 million and \$100 million: up to \$200,000
- Research expenditures under \$25 million: up to \$100,000

Funds will be awarded in the form of a grant, with a Memorandum of Understanding between the State Council of Higher Education for Virginia and the lead institution.

Matching Funds Required

A 1:1 match is required; see below for details.

Period of Performance

Grant periods may be proposed ranging from 12 to 24 months.

The grant period for applications submitted by October 21 will begin on or about January 1, 2020. The grant period for applications submitted in early 2020 will begin around May 2020.

Application Contents and Submission Information

Application Contents

Please use the proposal template provided below.

- Proposals may be single spaced.
- Font must be either Times New Roman 12 pt. or Arial 11 pt.
- Font for figures, tables, formulas and diagrams can be reduced no smaller than Times New Roman 10 pt. or Arial 9 pt.
- Margins, in all directions, must be at least an inch; margins for illustrations, graphics, diagrams, tables or figures that take up a full page may be reduced no smaller than half an inch.
- Inclusion of links to additional information is allowed; however, reviewers are not required to follow the links or consider the additional information in the review of applications.
- Pages should be numbered on the bottom right.
- Inclusion of other information in headers or footers is at the discretion of the applicant.

Proposals should include the following elements:

Cover sheet

Please include:

- Name and contact information for lead institution
- Names of any partners
- Length of requested grant period
- Amount of funds requested
- Estimated amount of matching funds (must be at least 1:1)
- Printed name, title and signature of authorized signer

Narrative

Proposal narratives must include the sections listed below in the same order and with identical headings. No other documents or attachments are allowed. If submitted, unallowable attachments will be removed prior to review.

- Executive Summary: (1 page limit; will be published on website and used for press release if proposal is funded)
- Project Description (7-page limit; suggested length for each section is listed below):
 - Outcome(s): State the expected outcome(s) for your project; should be concise, specific, measurable and achieved by the end of the grant period (1/2 page)
 - Brief History: Describe the history of the activities you are proposing to improve and how you reached the decision to prioritize the solution(s) described below (1 page)
 - Problem or Gap: Describe the problem or gap you are trying to solve through the grant activities (1 page)

- Solution: Describe the solution; include your plan of work and the design of the activities to be undertaken during the grant period; please ensure that the activities are designed to address and solve the problem(s) or gap(s) identified in the previous section (4 pages)
- Milestones and Timeline: Set your progress and/or outcome milestones; state the date each will be achieved (1/2 page)
- Conclusion: State the key reasons your proposal should be funded (state your case in one or two sentences)

Budget and Budget Narrative

Please provide a detailed budget for each year of the grant period and cumulatively. The detailed budget should reflect planned expenditures of grant funds and the required 1:1 matching funds. Therefore, if you are requesting \$200,000, your budget should total at least \$400,000.

Budgets will be accepted in any format (for example, a format published by an institution's office of sponsored programs or a budget extracted from an institution's electronic research administration portal) that includes all the usual direct cost budget categories: salaries/wages, benefits, travel, supplies, other direct costs, subrecipients (subawards or contracts to collaborating entities or vendors), etc.

VRIF funds cannot be used for indirect costs.

VRIF funds cannot be used to supplant funding that currently supports the institution's research commercialization efforts.

The amounts for each budget line item must be documented and justified in the budget narrative. For proposals that contain a subaward(s), each subaward must include a separate budget narrative. There is no page limit for the budget narrative.

Matching Funds Guidelines

The budget narrative should include an explanation of the source(s) of matching funds.

Match requirements:

- Commitment of a 1:1 match is a criteria for eligibility, rather than a review criteria (i.e., additional points will not be awarded for commitments of greater than a 1:1 match; however, applicants can note in their proposals or budget narratives an estimate of the total cost of the project and an indication of the total match that might be expended during the grant period).
- Unrecovered indirects can be counted toward the match (as calculated using the basis in the institution's negotiated indirect agreement).
- Grantees cannot count toward the match grant awards from VBHRC, CHRB, CIT, Tobacco Commission, GO Virginia, Virginia Economic Development Partnership.
- The matching funds must be in-hand at time of award (or committed as documented by a legally binding grant award or pledge; applicants must identify which funds are in-hand and which are pledged).
- If the match is another grant, that grantmaker's terms and conditions or authorizing legislation must not prohibit use of those funds as a match.
- If the match is another grant, the nexus between the two projects must be clear (as determined by the VRIF peer reviewers).
- Expenditure of matching funds must be tracked and reported in progress reports.
- The commitment of matching funds is legally binding and is subject to audit.

The signature of the applicant's authorized signer indicates that the Vice President/Provost for Research (or equivalent, or designee) has conducted due diligence to ensure the offered match complies with these guidelines.

Application Submission

The full proposal, the corresponding redacted proposal (see FOIA section, above) and an Excel budget spreadsheet (if used) should be submitted via a single email to the SCHEV Associate for Research Investment, lynnseuffert@schev.edu. One pdf containing the full proposal and one pdf containing the redacted proposal is preferred. Please name the attachments so that the Associate can readily distinguish the redacted proposal and also determine that the application packet is complete. If applicants are not submitting a redacted proposal because the application includes no information for which protection is sought, please state that in the email.

Due dates for proposals: October 21, 2019 and January 13, 2020.

Application Processing, Review and Award

Upon receipt via email of an application package, SCHEV staff will respond by return email within two business days to confirm receipt.

Review of applications is a three-stage process. The statutes that created VRIF state the criteria to be considered.

The first stage is an administrative review by SCHEV staff to ensure that proposal packets are complete and conform to administrative requirements in this Call for Proposals.

The statute requires that conforming applications be assigned to external peer reviewer(s) with recognized science and technology expertise. The reviewer(s) will comment on the application, including perceived strengths and weaknesses.

Following peer review and in preparation for the third stage of review, SCHEV staff may conduct additional due diligence and/or ask applicants for clarifying information.

SCHEV staff will prepare a summary statement for each proposal that includes information such as the reviewers' comments, a summary of strengths and weaknesses, or other summary highlights of the peer review process.

In compliance with Va. Code §23.1-3133 E, SCHEV staff will forward to VRIC any proposal receiving a favorable evaluation.

The third stage is review by VRIC. In compliance with Va. Code §2.2-3711, "Closed meetings authorized for certain limited purposes," these meetings will be closed to the public. VRIC members will review the proposals, starting with the comments of the peer reviewer(s) and then adding their expertise and knowledge of the statewide impact and contribution the projects might have.

VRIC will then hold a public meeting where a formal vote will be taken to determine which proposals will be funded. This meeting might occur directly following the closed meeting or on a different date.

Finally, per statute, all decisions by VRIC shall be final and not subject to further review or appeal. The Governor may announce any award approved by the Committee.

Reporting Requirements

Financial Reports

Financial reports are due 30 days after the end of the grant period. SCHEV will accept reports generated from an institution's accounting system reporting function.

The reports must include information regarding the total amount awarded, the amount forwarded to the institution at the beginning of the grant period, the amount spent and the amounts remaining for each budget category and for the same budget categories for each subaward. Reports showing the same information for matching funds are also required.

Technical Narrative Progress Reports

Technical progress reports in narrative form will be due 30 days after the end of the grant period.

In addition, grantees are expected to share documents they create, such as new licensing agreements, policies and procedures, etc.

There is no required template for these reports. Grantees should describe progress on the grantee's proposed milestones and adherence to the timeline.

Reports Due Upon Request for No-Cost Extension

Requests for no-cost extensions should be made at least sixty (60) days prior to the desired effective date of the requested change.

Grantees will be required to submit reports at the time of a no-cost extension request. In addition to the reports, the request should provide a brief narrative justification for the extension, length of requested extension (maximum six months), amount of unexpended balance and a timeline for activities and expenditure of the remaining funds.

Award Administration

SCHEV staff would like to build a relationship with grantees and foster a collaborative approach to addressing issues and removing any roadblocks that arise.

For details regarding post-award revisions that require prior approval, along with other conditions of award, please see Appendix A: Terms and Conditions of Award, specifically Attachment 1. Special Terms and Conditions.

Appendix A: Synopsis of Opportunities to Advance Commercialization Identified by TEconomy Partners

Stage 1: Discovery to IP Creation

Outcomes for Stage 1 include:

- Invention disclosure
- Research collaboration
- Advance to next stage or return to inventor

Recommended Improvements:

1. Work with university leadership to clarify that university policy and goals for university technology transfer and commercialization do not include revenue maximization – and develop a funding mechanism for technology commercialization activities that does not rely on funds derived from a portion of earned licensing revenue.
2. Set out clear metrics for measuring value creation that may include revenue generation – but which include other measures as well. Definitions used by the Association of University Technology Managers should be deployed, where possible. Measures could include:
 - numbers of startups formed
 - number of commercialization licenses or similar agreements
 - regulatory milestones achieved by products under development in startups or licensees
 - amount and source of investment capital raised by startups
 - evidence of valuation increases in university startups based on institutional investors or other external sources
 - amounts of square footage occupied, jobs, average salaries, local and state taxes paid, and related economic indicators based on startup activities
3. NA for this competition; requires state action.
4. Create shared regional and/or statewide programs for entrepreneurial training, business plan competitions, and start-up company residencies for graduate students/post-docs. As feasible, include “invention prospecting” initiatives within the scope of these programs by providing proactive “invention prospecting” interactions between technology transfer experts and academic researchers.
5. NA for this competition; requires state action.
6. Annual or bi-annual regional or statewide innovation showcases and pitch events should be offered to get more Virginia university researchers engaged and, as importantly, to announce to prospective industry and investor partners that Virginia universities are “open for business.”
7. NA for this competition; a new competition with this focus is under development.
8. Technology transfer offices in Virginia should enhance their efforts to create and share standard invention management and translational research/commercialization process maps (with as much specificity as feasible regarding time frames for key decisions, key decision makers, contact information, and related details).
9. Universities should develop criteria (with time frames) for offering to release invention disclosures to the inventor(s) in cases where it is not prepared to invest in patenting, marketing or licensing the invention which is the subject of the invention disclosure.

10. Ensure that university technology commercialization offices have mechanisms for seeking and considering external expert input in formulating and managing their strategies for seeking IP protection.
11. Create budget lines to allow university technology commercialization offices to pursue more “at-risk” patent filings, including full utility patents and international patents, where careful vetting and opportunity analysis indicates that such investment is justified.
12. Include patent strategy expertise and criteria for industry advisory boards, boards of directors, and other expert bodies advising technology commercialization offices.
13. Examine how to address the concern of ensuring Virginia public research universities can make use of the sovereign immunity defense in protecting their IP claims, which are available to public research universities in other states.

Stage 2: Market-Driven Translational Research

Outcomes for Stage 2 include:

- Market assessment
- Proof-of-concept projects
- Intellectual property filing (patent, copyright, trade secret, open access, etc.)

Recommended Improvements:

14. Explore and pursue funding opportunities to develop capacities throughout Virginia’s universities to engage with business, customer, patient, regulatory, and related issues critical in advancing the commercialization of university research inventions.
15. Develop mechanisms to identify networks of alumni, community members, and related expert stakeholders willing to partner with technology commercialization offices in translational research and early stage technology de-risking initiatives.
16. NA for this competition; a new competition with this focus is under development.
17. The Boards of the non-profit corporations administering the technology commercialization function at each university in Virginia should be expanded to maximize engagement by representatives of business, industry, entrepreneurs and investors which align well with the respective university’s research and economic development focus.
18. Develop a shared network of Virginia university alumni with specific technology area domain expertise, market knowledge and entrepreneurial management skills that all universities can tap. Feature showcase events for this alumni network at different locations across the Commonwealth that represent technologies being advanced across multiple universities.
19. Consider development of regional technology commercialization resource centers in areas where a shared resource could be particularly useful in creating a critical mass of deal flow, translational research networks and resources, investor and partnership development initiatives, and technology development and deployment initiatives focusing on regional economic development priorities and industry clusters. A pilot initiative in Norfolk serving Old Dominion University, Norfolk State University, and the Eastern Virginia Medical School is suggested due to the proximity of these institutions, their expressed desire to explore mechanisms to partner more effectively in technology commercialization and in innovation and entrepreneurship, and their shared focus on leveraging innovation and research assets to help drive economic development in their region.

Stage Three: Licensing and New Firm Creation

Outcomes for Stage 3 include:

- “Investment grade” ready technologies
- # of licenses executed: total and with start-ups, in-state existing business and out-of-state existing businesses
- Regulatory milestones achieved by products under development in startups or other licensees
- Amount and source of investment capital raised by startups
- Evidence of valuation increases in university startups based on institutional investors or other external sources
- Startup economic footprint: square footage occupied, sales generated, jobs, average salaries, local and state taxes paid, and related economic indicators
- Sales generated by licensing generated by in-state existing businesses

Recommended Improvements:

20. Pursue efforts to further standardize term sheets and boilerplate agreements – and post examples of these standardized terms on university-related websites. Efforts are underway across Virginia’s universities to create common templates and this is a very promising development that needs to be vetted with industry and venture capital representatives before it is finalized.
21. Virginia universities should be encouraged to share their knowledge and access to expertise available to them via industry advisory boards, board members of technology commercialization 501(c)(3) organizations, alumni networks, and specialized consulting resources to provide confirmation, reassurance and reinforcement of the objective and high-quality approach to transactions undertaken by technology transfer offices in Virginia.
- 22. A strategic plan should be developed identifying milestones and criteria for launching, growing, and supporting accelerator programs so that all Virginia universities have access and engagement with the programs and facilities. Startup acceleration programs are critical factors in increasing the number, success, and rate of growth of startup companies in Virginia. Accelerators involve facilities, core labs and equipment, proof-of-concept and seed investment capital, access to shared services, management talent, and related resources. **Funding in this competition can be used only for the strategic plan and not the operation of an accelerator, proof-of-concept or seed funding, etc.****
23. Business schools are increasingly interested in incorporating major classroom and experiential educational activities in areas related to technology assessment, business planning and finance, company formation and management, and venture capital investments. More mutually beneficial linkages should be established involving technology commercialization offices and business schools.
24. A “how-to” implementation strategy should be developed and shared with all Virginia universities advising them on the organization and management of university-affiliated seed funds.
25. University technology transfer offices should be encouraged to develop networks and creative approaches to partnering with philanthropic organizations, angel networks, alumni networks, and others willing to provide seed investment capital in support of launching early stage startup companies.
26. NA for this competition.

Stage 4: Applied Research Collaborations with Industry Partners

Outcomes for Stage 4 include:

- Industry consortium – funding, # of projects
- Open innovation partnerships with industry, NGOs, others – funding, # of projects
- Individual company specific application or technology solution – funding, # of projects

Recommended Improvements:

27. Each Virginia university, at a minimum, should develop and market standard term sheets for sponsored research, FAQ pages, boilerplate research agreements, and other tools and information sources designed to “demystify” the process for industry in developing collaborative research agreements with universities. Even more impactful would be to have common templates for industry sponsored research used by all Virginia research institutions, including master agreements, which have been vetted with industry representatives.
28. To promote the wider university strengths found across Virginia and raise Virginia’s ability to compete for master agreement relationships with industry, consider creating “multi-university access” to master agreement relationships negotiated by individual Virginia universities. This unique collaborative approach can work best by having a primary university that maintains the overall relationship, but reaches out to other universities around specific needs of the company that are beyond their research capabilities. An effort in this regard is currently being developed with multi-university collaboration with MITRE, who manages a number of Federal Funded Research and Development Centers, spurred by MITRE’s interest in broadening its access to university research expertise as it serves its national security clients.
29. A key complement to opening up master agreements for use by other Virginia research universities is the development of a portal for industry seeking to identify university research and innovation resources and utilize this mechanism to identify and catalyze applications among universities (either solo application or in collaboration with other campuses) in Virginia for competitive industry center or consortium grants.
30. Create research business development initiatives on Virginia campuses designed to identify and communicate about core areas of strength and capacity in research and innovation, and to market those capacities and opportunities to prospective industry research funders. These efforts should be especially targeted to identifying strengths, facilities, and key competencies which align with key industry sectors in Virginia.
31. Address the growing expectation by industry that when a company is solely funding research it should be the beneficiary of any intellectual property generated. This has led to a growing effort across universities to advance predictable and streamlined processes for industry to take ownership of intellectual property from sponsored research with universities, and for straight-forward contracting processes. For instance, the University of Minnesota, through an approach called Minnesota Innovation Partnerships, or MN-IP, allows a company sponsoring research at the university to pre-pay a fee and receive an exclusive worldwide license at a set royalty rate. The University of Minnesota noted that in its first four years the program resulted in 83 partnerships to develop products and services across industries like composite materials, pharmaceuticals and medical devices, with partnering companies ranging from small local startups to large multinationals. Penn State has gone further by allowing the company sponsoring the research an option to request ownership of Intellectual Property (IP) resulting from the sponsored project, if all the Penn State researchers involved in the project agree to release the IP.
32. A strategic research business development approach should also focus Virginia universities on becoming and remaining the “research partner of choice” for startup companies launched by Virginia universities. This should include both streamlined agreements and favorable terms for sponsored research with university start-ups. The success and rate of growth of

university startups can be advanced by maintaining close research and development relationships between the companies and the universities from which they emanated. Further, as these companies grow and achieve critical business development and financing milestones, they can become the next generation of key corporate partners with universities – funding research, hiring faculty as consultants, providing internships to students, recruiting university graduates into their workforce, engaging in open innovation – all of which create a robust innovation ecosystem and a “sticky environment” in which these companies are more likely to remain as they grow.

33. NA for this competition; requires state action.

34. NA for this competition.

Appendix B: Assurances and Certifications – Terms and Conditions of Award

Assurances and Certifications

The Authorized Organizational Representative (AOR) signing the signature page is assuring and certifying the following:

Assurance Regarding Freedom of Information Act Exclusion: The Virginia Freedom of Information Act does NOT completely protect unfunded or funded grant proposals from exposure. The AOR is assuring that the applicant institution has consulted with the project team and the attorney general representative, if necessary, regarding whether a written request for protection is being made to the Virginia Research Investment Committee in accordance with Va. Code §2.2-3705.6, item 28. If the applicant is invoking the exclusion contained in item 28, the AOR is assuring that a redacted version of the application packet is being submitted that identifies with specificity the data, information or other materials for which protection is sought and states the reason why protection is necessary. The Committee shall determine whether the requested exclusions from disclosure are necessary to protect the trade secrets, financial information or research-related information of the applicant. The Committee shall make a written determination of the nature and scope of the protection to be afforded by it under the Va. Code.

Certification Regarding Organizational Support: The AOR is certifying that there is organizational support for this proposal, that matching funds will be secured as described in the proposal and that the Vice President for Research (or equivalent, or designee) has conducted due diligence to ensure the offered match complies with the guidelines in the Call for Proposals. Further, if the proposed plan for matching funds does not materialize, the AOR is certifying that the institution will submit a revised plan to comply with the required 1:1 match.

Certification Regarding Collaborating Entity AOR Approval: The applicant AOR is certifying that the AORs (or equivalent) of all collaborating entities have made the same assurances and certifications and that documentation of such exists.

Certification Regarding State Funds: The AOR is certifying that the organization understands that VRIF is awarding state funds. The organization will comply with all rules and regulations regarding state funds, including but not limited to the Commonwealth Accounting Policies and Procedures Manual, the Virginia Public Procurement Act (when applicable) and the Library of Virginia's Virginia Public Records Management Manual.

Certification Regarding Conflict of Interest: The AOR is certifying that the organization has implemented and is enforcing a written policy on conflicts of interest in research and that, to the best of his/her knowledge, all financial disclosures required by the conflict of interest policy were made; and that conflicts of interest, if any, were, or prior to the organization's expenditure of any funds under the award, will be, satisfactorily managed, reduced or eliminated in accordance with the organization's conflict of interest policy.

Certification Regarding Compliance with the Animal Welfare Act. The AOR is certifying that proposed projects involving use of any vertebrate animal for research or education will be approved by the submitting organization's Institutional Animal Care and Use Committee (IACUC) before or substantially concurrent with an award. If the involvement of animals is indefinite at the time of award, the AOR is certifying that, prior to conducting any animal activities, and prior to expending any grant funds for those animal activities, IACUC approval will be obtained. It is an institutional responsibility to ensure that the research described in the application is congruent with any corresponding protocols approved by the IACUC.

Certification Regarding Compliance with the Common Rule. The AOR is certifying that proposed projects involving research with human subjects will ensure that subjects are protected from research risks in conformance with the relevant federal policy known as the Common Rule (Federal Policy for the Protection of Human Subjects). All projects involving human subjects must either (1) have approval from the organization's Institutional Review Board (IRB) before or substantially concurrent with issuance of a VRIF award or (2) maintain documentation that the IRB has declared the research exempt from IRB review, in accordance with the applicable subsection, as established in section 101(b) of the Common Rule.

If human subjects research is anticipated within the period of the award but definite plans for involvement of human subjects cannot be described in the application, then the AOR is certifying that, prior to the involvement of human subjects, the project will obtain IRB approval or exemption. It is an institutional responsibility to ensure that the human subjects research described in the application is congruent with any corresponding protocols approved by the IRB.

Certification Regarding Education in the Protection of Human Research Participants. The AOR is certifying that, if the proposed project involves research with human subjects, all senior/key personnel involved in human subjects research have received training in the protection of human subjects. Senior/key personnel include all individuals responsible for the design or conduct of the study, including senior/key personnel of collaborating partner entities or alternate performance sites if they are participating in research that involves human subjects.

Certification Regarding Responsible Conduct of Research: The AOR is certifying that the institution has a plan to provide appropriate training and oversight in the responsible and ethical conduct of research to undergraduates, graduate students and postdoctoral researchers who will be supported by VRIF to conduct research.

Terms and Conditions

DO NOT SIGN AND SUBMIT AT TIME OF APPLICATION

Grantor and grantee agree that this MOU will be performed in accordance with the following:

1. The statement of work and budget for this award are as specified in the grantee's proposal submitted _____ (date) _____ and incorporated herein by reference. In its performance of the statement of work, grantee shall be an independent entity and not an employee or agent of grantor.
2. Matters concerning the performance of this award should be directed to the appropriate party's contact, as shown in Attachments 3A & 3B.
3. Matters concerning the request or negotiation of any changes in the terms, conditions or amounts cited in this award agreement, and any changes requiring prior approval, should be directed to the appropriate party's Contact, as shown in Attachments 3A & 3B. Any such changes made to this MOU require the written approval of each party's Authorized Official as shown in Attachments 3A & 3B.
4. Incorporated into this MOU by reference are the VRIF Call for Proposals, the entirety of the grantee's application packet including the assurances and certifications, the special terms and conditions in Attachment 1 and the general terms and conditions in Attachment 2.

By an Authorized Official of Grantor

By an Authorized Official of Grantee

(To be signed only if award is made)

(To be signed only if award is made)

Signature

Signature

Printed Name

Printed Name

Title

Title

Date: _____

Date: _____

Attachment 1: Special Terms and Conditions

Applicability

The terms and conditions in the MOU and all attachments apply directly to the grantee and also apply to collaborating entities, subrecipients and contractors. The grantee is accountable for the performance of the project, program or activity; the appropriate expenditure of funds under the award by all parties; and all other obligations of the grantee, as cited in the MOU and all attachments.

Site Visits

VRIC members and/or staff may conduct site visits during the course of the grant period.

Changes

The changes listed below require the prior approval of the grantor. Requests should be directed to the grantor's Contact, as shown in Attachments 3A & 3B.

- Changes to the scope of the project
- Changes to milestones and timelines that impact the schedule for disbursement of funds
- Changes to collaborating entities
- Changes to key personnel named in the approved proposal
- Reduction of effort of the PI or any Co-PI of 10% or more from the level in the approved proposal
- Plans for continued progress during extended absence of the PI or any Co-PI
- Changes to the budget detailing the planned expenditure of general fund amounts resulting in a deviation of 20% or more in any budget category; the request must include the current allocation of resources along with specific detail and justification for the reallocation

No-cost extensions require the approval of the grantor. Requests for a no-cost extension should be addressed to and received by the Contact, as shown in Attachments 3A & 3B, not less than sixty (60) days prior to the desired effective date of the requested change. See "Reporting Requirements" section of the Call for Proposals.

Disbursement of Funds, Accounting and Audit

After receiving a written request from the Virginia Research Investment Committee, grantor will authorize the State Comptroller and the Virginia Department of Planning and Budget to release the first payment to the grantee. The first payment will be sufficient for the grantee to achieve the first milestone on the timeline included in the grantee's proposal.

After initial disbursement, subsequent payments will be contingent upon successful performance against key milestones and other performance standards outlined in the proposal. Non-compliance with the terms and conditions of this award, including reporting requirements, and/or failure to achieve milestones on the approved timeline could result in a hold on disbursement of additional funds until the grantee is in compliance.

All payments shall be considered provisional and subject to adjustment within the total estimated cost in the event such adjustment is necessary as a result of an adverse audit finding against the grantee.

Award monies not expended by the end of the period of performance must be returned.

The grantee will oversee the expenditure of all grant funds by all parties and ensure that all funds are expended in strict compliance with state rules, regulations and guidelines, the terms

and conditions of this MOU, professional accounting standards and all applicable state laws and requirements.

The grantee will maintain systematic accounting records of all expenditures relating to this award, including the supporting source documentation. Records will be retained by the grantee in accordance with Library of Virginia Record Retention Policy.

Records will be available for inspection and/or audit by SCHEV, the Virginia Auditor of Public Accounts or other appropriate entity.

Transfer of Award or Change of Principal Investigator

If the Principal Investigator leaves the grantee institution during the grant period, the grant will not be transferred to a new institution. The grantee institution will have the opportunity to propose a new Principal Investigator, subject to approval of SCHEV staff and the Chair of the VRIC. If an agreement cannot be reached regarding assignment of a new Principal Investigator, a collaborating institution, if any, could propose to become the lead grantee. If no agreement can be reached, the award will be terminated and unexpended and unobligated funds must be returned.

Reporting

Report type and due dates are required as detailed in the Call for Proposals.

Future Applications to VRIF

Award recipients and their partners who are delinquent in any VRIF obligation are not eligible to apply for or receive future VRIF funding until obligations are resolved.

Termination of Award

SCHEV may terminate this award in the event of non-compliance with the terms and conditions of this MOU, significant lack of progress including failure to achieve milestones on the timeline set forth in the proposal, or other extenuating conditions. In the case of termination, the grantee will return any unexpended and unobligated funds.

Acknowledgments

Professional publications or presentations resulting from activities supported by this award must acknowledge the Virginia Research Investment Fund.

Acknowledgments of the Virginia Research Investment Fund are appreciated on poster presentations, printed programs, news releases, web news, e-mail alerts or announcements regarding grant-funded activities.

Attachment 2: General Terms and Conditions

- A. **VENDORS MANUAL:** NA
- B. **APPLICABLE LAWS AND COURTS:** This contract shall be governed in all respects by the laws of the Commonwealth of Virginia and any litigation with respect thereto shall be brought in the courts of the Commonwealth. The agency and the grantee are encouraged to resolve any issues in controversy arising from the award of the contract or any contractual dispute using Alternative Dispute Resolution (ADR) procedures (Code of Virginia, §2.2-4366). ADR procedures are described in Chapter 9 of the Vendors Manual. The grantee shall comply with all applicable federal, state and local laws, rules and regulations.
- C. **ANTI-DISCRIMINATION:** By signing this contract, the grantee certifies to the State Council of Higher Education for Virginia that they will conform to the provisions of the Federal Civil Rights Act of 1964, as amended, as well as the Virginia Fair Employment Contracting Act of 1975, as amended, where applicable, the Virginians With Disabilities Act, the Americans With Disabilities Act and §2.2-4311 of the Virginia Public Procurement Act (VPPA). The grantee shall not discriminate against any recipient of goods, services or disbursements made pursuant to the contract on the basis of the recipient's religion, religious belief, refusal to participate in a religious practice or on the basis of race, age, color, gender or national origin and shall be subject to the same rules as other organizations that contract with public bodies to account for the use of the funds provided; however, if the faith-based organization segregates public funds into separate accounts, only the accounts and programs funded with public funds shall be subject to audit by the public body. (Code of Virginia, §2.2-4343 1.E.).
1. During the performance of this contract, the grantee agrees as follows:
 - a. The grantee will not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, age, disability or any other basis prohibited by state law relating to discrimination in employment, except where there is a bona fide occupational qualification reasonably necessary to the normal operation of the grantee. The grantee agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.
 - b. The grantee, in all solicitations or advertisements for employees placed by or on behalf of the grantee, will state that such grantee is an equal opportunity employer.
 - c. Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient for the purpose of meeting these requirements.
 2. The grantee will include the provisions of 1. above in every subcontract or purchase order over \$10,000, so that the provisions will be binding upon each subcontractor or vendor.
- D. **ETHICS IN PUBLIC CONTRACTING:** By signing this contract with the State Council of Higher Education for Virginia, the grantee certifies that their offer is made without collusion or fraud and that they have not offered or received any kickbacks or inducements from any other contractor, supplier, manufacturer or subcontractor in connection with their offer and that they have not conferred on any public employee having official responsibility for this transaction any payment, loan, subscription, advance, deposit of money, services or

anything of more than nominal value, present or promised, unless consideration of substantially equal or greater value was exchanged.

- E. **IMMIGRATION REFORM AND CONTROL ACT OF 1986:** By signing this contract with the State Council of Higher Education for Virginia, the grantee certifies that the grantee does not, and shall not during the performance of the contract, knowingly employ an unauthorized alien as defined in the federal Immigration Reform and Control Act of 1986.
- F. **DEBARMENT STATUS:** By signing this contract, grantee shall certify that they are not currently debarred by the Commonwealth of Virginia from contracts for the type of activities covered by the Scope of Work/proposal, nor are they an agent of any person or entity that is currently so debarred.
- G. **ANTITRUST:** By entering into this contract, the grantee conveys, sells, assigns and transfers to the State Council of Higher Education for Virginia all rights, title and interest in and to all causes of action it may now have or hereafter acquire under the antitrust laws of the United States and the Commonwealth of Virginia, relating to the particular goods or services purchased or acquired by the State Council of Higher Education for Virginia under said contract.
- H. **MANDATORY USE OF STATE FORM AND TERMS AND CONDITIONS FOR IFBs AND RFPs:** NA
- I. **CLARIFICATION OF TERMS:** NA
- J. **PAYMENT:** See “Disbursement of Funds, Accounting and Audit” in Attachment 1: Special Terms and Conditions.
- I. **TESTING AND INSPECTION:** The State Council of Higher Education for Virginia reserves the right to conduct any test/inspection it may deem advisable to assure goods and services conform to the specifications in the Scope of Work.
- J. **ASSIGNMENT OF CONTRACT:** A contract shall not be assignable by the grantee in whole or in part without the written consent of the State Council of Higher Education for Virginia.
- K. **PRECEDENCE OF TERMS:** The following General Terms and Conditions VENDORS MANUAL (NA), APPLICABLE LAWS AND COURTS, ANTI-DISCRIMINATION, ETHICS IN PUBLIC CONTRACTING, IMMIGRATION REFORM AND CONTRAL ACT OF 1986, DEBARMENT STATUS, ANTITRUST, MANDATORY USE OF STATE FORM AND TERMS AND CONDITIONS (NA), CLARIFICATION OF TERMS (NA), PAYMENT (NA) shall apply in all instances. In the event there is a conflict between any of the other General Terms and Conditions and any Special Terms and Conditions, the Special Terms and Conditions shall apply.
- L. **QUALIFICATIONS OF (BIDDERS/OFFERORS):** NA
- M. **TESTING AND INSPECTION:** NA (duplicate of I. above)
- N. **ASSIGNMENT OF CONTRACT:** NA (duplicate of J. above)
- O. **CHANGES TO THE CONTRACT:** See Attachment 1: Special Terms and Conditions.
- P. **DEFAULT:** See Attachment 1: Special Terms and Conditions.

- Q. **TAXES:** Sales to the Commonwealth of Virginia are normally exempt from state sales tax. State sales and use tax certificates of exemption, Form ST-12, will be issued upon request.
- R. **USE OF BRAND NAMES:** NA
- S. **TRANSPORTATION AND PACKAGING:** NA
- T. **INSURANCE:** NA
- U. **ANNOUNCEMENT OF AWARD:** NA
- V. **DRUG-FREE WORKPLACE:** During the performance of this contract, the grantee and subcontractors agree to provide a drug-free workplace for the grantee's employees. Grantee will inform employees that the unlawful manufacture, sale, distribution, dispensation, possession or use of a controlled substance or marijuana is prohibited in the grantee's workplace.
- W. **NONDISCRIMINATION OF GRANTEES:** Grantee shall not be discriminated against because of race, religion, color, sex, national origin, age, disability, faith-based organizational status, any other basis prohibited by state law relating to discrimination in employment or because grantee employs ex-offenders unless the State Council of Higher Education for Virginia has made a written determination that employing ex-offenders on the specific contract is not in its best interest. If the award of this contract is made to a faith-based organization and an individual, who applies for or receives goods, services or disbursements provided pursuant to this contract, objects to the religious character of the faith-based organization from which the individual receives or would receive the goods, services or disbursements, the public body shall offer the individual, within a reasonable period of time after the date of his objection, access to equivalent goods, services or disbursements from an alternative provider.
- X. **eVA BUSINESS-TO-GOVERNMENT VENDOR REGISTRATION, CONTRACTS AND ORDERS:** NA
- Y. **AVAILABILITY OF FUNDS:** The parties herein understand and agree that the agency shall be bound hereunder only to the extent of the funds available or which may hereafter become available for the purpose of this agreement.
- Z. **SET-ASIDES:** NA
- AA. **BID PRICE CURRENCY:** NA
- BB. **AUTHORIZATION TO CONDUCT BUSINESS IN THE COMMONWEALTH:** NA

Additional Terms and Conditions

- A. **RENEWAL OF CONTRACT:** NA
- B. **ADDITIONAL INFORMATION:** NA
- C. **DELIVERY POINT:** N/A
- D. **eVA Business-To-Government Contracts and Orders:** NA

- E. **PRIME GRANTEE RESPONSIBILITIES**: The grantee shall be responsible for completely supervising and directing the work under this contract and all subcontractors that he may utilize, using his best skill and attention.

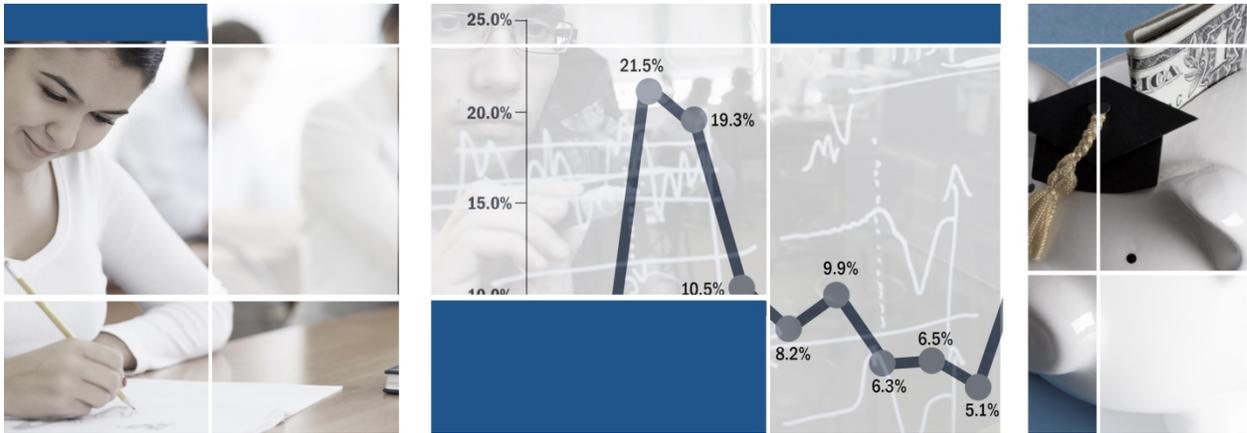
Subcontractors who perform work under this contract shall be responsible to the prime grantee. The grantee agrees that he is as fully responsible for the acts and omissions of his subcontractors and of persons employed by them as he is for the acts and omissions of his own employees.

- F. **PROPOSAL ACCEPTANCE PERIOD**: NA

- G. **WARRANTY**: NA

- H. **SUBCONTRACTS**: No portion of the work shall be subcontracted without prior written consent of the purchasing agency. In the event that the grantee desires to subcontract some part of the work specified herein, the grantee shall furnish the purchasing agency the names, qualifications and experience of their proposed subcontractors. The grantee shall, however, remain fully liable and responsible for the work to be done by its subcontractor(s) and shall assure compliance with all requirements of the contract.

August 13, 2019



Virginia Research Investment Fund Call for Proposals – Round 4 COMPREHENSIVE SUPPORTIVE SERVICES FOR PROOF OF CONCEPT AND COMMERCIALIZATION

Activity	Key Dates
Call for Proposals Issued	August 13, 2019
Proposal Due Date	January 13, 2020
Award Announcement	April – May 2020
Estimated Start Date	June 1, 2020

Table of Contents

Virginia Research Investment Fund 2

 Commercialization of Academic Research; Economic Development 2

 Statutory Purpose and Goals 2

 Study to Assess Virginia’s Research Assets 2

Virginia Research Investment Committee..... 3

Best Practices and Shared Values in Principled Grantmaking..... 3

Virginia’s Freedom of Information Act and Open Meetings Law 4

Description of Funding Opportunity 5

 Eligible Applicants 5

 Goal 5

 Type of Activities 6

 Guidelines for Proof-of-Concept Mini-Grants 6

 Award Type and Amount..... 6

 Matching Funds Required..... 7

 Number of Awards 7

 Period of Performance 7

Application Contents and Submission Information 7

 Application Contents..... 7

 Application Submission 10

Application Processing, Review and Award 10

Reporting Requirements 11

Award Administration..... 13

Appendix A: Assurances and Certifications – Terms and Conditions of Award 14

Virginia Research Investment Fund

Commercialization of Academic Research; Economic Development

In recent years, several Virginia governmental entities have focused on the relationship between the commercialization of academic research and economic development. Current Governor Northam issued “A Comprehensive Economic Development Policy for the Commonwealth” (the Comprehensive Policy) on December 7, 2018. Former Governor McAuliffe issued Executive Orders #23 and #26, regarding the establishment of the New Virginia Economy workforce initiative, strategic plan and steering committee. The State Council of Higher Education for Virginia (SCHEV) issued The Virginia Plan for Higher Education. The General Assembly created the Virginia Initiative for Growth and Opportunity in Each Region (GO Virginia), the Virginia Research Investment Fund (VRIF) and the Virginia Research Investment Committee (VRIC).

Statutory Purpose and Goals

The 2016 Virginia General Assembly passed legislation to support the academic research enterprise in the Commonwealth, creating the Virginia Research Investment Fund (VRIF) and an awarding body, the Virginia Research Investment Committee (VRIC). Prospective applicants are encouraged to review the [amended statutes in full](#).

Study to Assess Virginia’s Research Assets

In 2017, SCHEV, on behalf of VRIC, launched a comprehensive study to assess the Commonwealth’s research assets, including those at its public universities, federal research facilities and private-sector companies. SCHEV retained TEconomy Partners, LLC, to conduct the study, which was completed in January 2018. A final report and three detailed analyses are available on the right side bar [here](#).

The TEconomy study recommended a high-value approach to proof-of-concept funding across universities that offers hands-on mentoring and engagement with venture capital investors:

Proof-of-concept funding is most effective when it is carried out as part of a more integrated commercialization process. The process of commercializing research discoveries to the marketplace is highly complex, interactive and market-driven and calls for enhancing research discoveries into technology solutions to meet the need(s) of customers in the marketplace. It involves a number of activities, such as assessing the technology and its potential markets against current products in the marketplace, e.g., technology and market assessments. It involves proof-of-concept of the viability of the technology and optimizing its engineering and design to meet price points of the marketplace to enhance the potential for sales and growth. The success of any related start-up companies involves identifying and recruiting the business and management team and securing the sources of investment or financing that will carry the product and/or firm through various stages of growth and development toward becoming an established company/product in domestic and global markets. (page 47)

The study identified the former Virginia Innovation Partnership (VIP) program as an example of a best practice and recommended that the program be renewed.

The VIP program was funded by an i6 Challenge grant awarded to the University of Virginia by the U.S. Economic Development Administration, Office of Innovation and Entrepreneurship. The program operated in Virginia between 2012 and 2015. The effort involved nearly all of Virginia’s research universities. It targeted support for 20 proof-of-concept projects annually through a competitive process, supported by a mentoring network of private sector experts and linked to venture investors, including a major annual event to pitch those projects that supported forming

new company start-ups. The results of VIP were very promising – 147 proof-of-concept ideas were submitted by 12 Virginia universities, with 36 projects funded and completed, 21 patents filed and two trade secrets established. Twelve new start-ups formed, which raised \$4.3 million over the period of the grant. The study recommended renewal of the initiative to create a national brand for Virginia related to this capability – effectively advertising to the industry and investment communities that Virginia’s innovation pipeline is more substantially de-risked and investment worthy than is typically found in universities in the US.

A high-value approach to proof-of-concept funding is the focus of this Round 4 grant competition.

Virginia Research Investment Committee

The Virginia Research Investment Committee (VRIC) is charged by statute to evaluate applications, taking into account the review, scoring or prioritization by a panel of reviewers, and then to decide whether to approve an application for an award of a grant from the Fund (§23.1-3133 E & F).

Membership on VRIC is established by §23.1-3132. The Committee consists of five ex officio members and four non-legislative citizen members who are also members of the Virginia Growth and Opportunity (GO Virginia) Board.

Ex officio members:

- Director of the Council – Peter Blake (Chair)
- Secretary of Commerce and Trade – Brian Ball
- Secretary of Finance – Aubrey Layne
- Staff Director of the House Appropriations Committee – Robert Vaughn
- Co-Directors of the Senate Finance Committee – April Kees and Jason Powell

Citizen members from GO Virginia:

- James “Jim” Dyke (appointed by the Governor)
- Heywood Fralin (appointed by the Senate)
- Doug Juanarena (appointed by the Governor)
- Todd Stottlemeyer (appointed by the House of Delegates)

Committee members’ terms on VRIC are coincident with their terms in office and their terms on the GO Virginia Board, respectively.

Best Practices and Shared Values in Principled Grantmaking

To maintain public trust, these shared values drive VRIC best practices in principled grantmaking and form the foundation for the guidelines that govern the VRIF proposal, peer review and award processes. These shared values closely follow the core values of the National Institutes of Health.

Expert Assessment: Expertise on peer review panels will be suitable for evaluating the potential impact of the proposed work. No proposals will be funded that were not favorably evaluated by a peer review panel.

Transparency: Decisions for awards will be made solely using published review criteria.

Impartiality: Inappropriate influences will be removed from the review process. Award decisions will be rendered without the influence of conflicts of interest or the appearance of conflicts of interest. Awards will be made without bias or predisposition, either personal or professional. Awards will not be made based on predetermination.

Fairness: All applications will be evaluated using the same review processes. Decisions will be rendered based on information included in the proposal. ***After a call for proposals is issued for a round of funding, all conversations between institutions/researchers and VRIC members about specific projects will cease.***

Privacy Protection for Applicants and Peer Review Panel Members: Peer review panel members and VRIC members will honor the spirit of the FOIA exclusions and closed meeting allowances for VRIF processes to ensure the privacy protection of applicants and peer reviewers.

Virginia's Freedom of Information Act and Open Meetings Law

Introduction

The Virginia Freedom of Information Act (FOIA) does not provide the same protection from exposure as federal Sunshine Laws for unfunded or funded grant proposals. Applicants should consult with their institution's counselor from the Office of the Attorney General.

Required Action: Applicants must make a written request for protection, identifying with specificity the data, information or other materials for which protection is sought and stating the reason why protection is necessary. Please follow the directions below.

Description of FOIA Exclusion for VRIF

The Virginia Freedom of Information Act (FOIA) as codified at Va. Code §2.2-3705.6. Item 28 addresses protection for proposals submitted to VRIC. Please read the entirety of Item 28, available [here](#).

The statute allows only the following information to be excluded from the mandatory disclosure provisions: Information relating to a grant application, or accompanying a grant application, submitted to the Virginia Research Investment Committee, to the extent that such records would reveal:

1. Trade secrets as defined in the Uniform Trade Secrets Act (§59.1-336 et seq.), disclosure of which would be harmful to the competitive position of a party to the grant application.
2. Financial information of a party to the grant application that is not a public body, including balance sheets and financial statements, that are not generally available to the public through regulatory disclosure or otherwise, disclosure of which would be harmful to the competitive position of a party to the grant application.
3. Research-related information produced or collected by a party to the grant application in the conduct of or as a result of study or research on medical, rehabilitative, scientific, technical, technological or scholarly issues, when such information has not been publicly released, published, copyrighted or patented, disclosure of which would be harmful to the competitive position of a party to the grant application.

The statute requires that the request for protection by applicants occur at the time the materials are submitted to VRIC.

Item 28 also gives VRIC the authority to approve or deny the request for protection.

Directions for Requesting Protection from Mandatory Disclosure

Applicants should submit two versions of their application packet. In one version, applicants should redact the information for which protection is sought. For each redaction, applicants should indicate (in the margin, via comments added to a pdf or on a separate cover sheet) the reason why protection is necessary, keeping in mind that the statute allows three types of information to be protected when disclosure would be harmful to the competitive position of a party to the grant application.

SCHEV staff will notify applicants within two weeks of submission whether their request has been approved. If the request was not approved, SCHEV staff will work with applicants to navigate a path to protection or withdraw the application.

SCHEV Response to FOIA Request

In the event that SCHEV receives a FOIA request, the decision regarding what, if any, information is to be withheld from disclosure pursuant to the Virginia Freedom of Information Act rests within the sole discretion of the SCHEV FOIA officer, SCHEV staff, the VRIC Chair and SCHEV's Attorney General representative. It is anticipated that the redacted version of the application would be released, without regard to whether the proposal was funded or not. SCHEV staff will inform the lead applicant institution the extent of the information released in response to the FOIA request.

Description of Open Meetings Law Exclusion for VRIF

Virginia's open meetings law is codified at Va. Code §2.2-3711, "Closed meetings authorized for certain limited purposes." Item A.48 addresses the requirements for closed meetings of the Virginia Research Investment Committee. The full text is available [here](#).

Description of Funding Opportunity

Eligible Applicants

Eligible lead applicants are public institutions of higher education in Virginia. While one institution must be named as the lead and fiscal agent, VRIC expects that two institutions will co-lead the administration of the proposed program. Further, VRIC expects that any proposal related to the cybersecurity strategic growth opportunity area will be submitted collectively by the Commonwealth Cyber Initiative Leadership Council.

Goal

The goal is to create a disciplined process to streamline commercialization of the products of university research for each strategic growth opportunity area through re-granting or mini-grants to teams of researchers for proof of concept (POC) experiments and the provision of mentoring and other support to those research teams before, during and after the POC grants.

The strategic growth opportunity areas are: Big data, leveraging fiber and data center assets; cybersecurity; unmanned systems; space and satellite systems; and life sciences.

As with all programs funded by the Virginia Research Investment Fund (VRIF), the ultimate objective is job creation through commercializing the products of university research via licensing technology to start-up or existing companies located in Virginia.

Type of Activities

The winning grantee(s) will provide direct assistance to university-based innovators and entrepreneurs to support proof-of-concept and commercialization of technology by offering a range of services that drive innovation-based, high-growth entrepreneurship and startup acceleration, such as technology advisement, market evaluation, business planning, mentoring and access to early-stage capital. Applicants must explain how they will leverage Virginia's existing strengths, capabilities and competitive advantages, including leveraging the experiences of successful entrepreneurs and business executives while fostering a culture of innovation.

Guidelines for Proof-of-Concept Mini-Grants

Sub-granting of VRIF funds for proof-of-concept and/or commercialization projects is subject to the following guidelines:

- Only public institutions of higher education can lead sub-grant projects
- Subgrant projects should lead to commercializable products of university research, rather than furthering treatment protocols or other research and technology advances
- Institutions must waive F&A rates for sub-grant projects (waived F&A would count toward the required match for the overall prime grant-funded program)
- Matching funds should not be required of subgrantees, where possible
- Grant funds can flow down to sub-sub-awardees, including but not limited to public or private institutions of higher education, start-up companies formed to commercialize the product, vendors who manufacture prototypes, patent attorneys, consultants to assist with FDA approval, etc.
- VRIF funds can be used for any costs that are required to move the product toward commercialization, including prototyping costs, patenting costs, tuition for graduate students working on the project, paid internships, etc.
- Grantee will determine whether and how to include scoring that favors or disfavors certain usage of VRIF funds
- The process for re-granting must include peer reviewers who are external to the institutions administering the program. The reviewers should include, at minimum, technical experts (research scientists, clinicians, engineers, etc.), venture capitalists and/or angel investors, and experienced entrepreneurs with expertise in start-ups created to commercialize the products of research. The majority of peer reviewers should be from outside academia.
- The process for re-granting must include a plan for monitoring sub-grantees and include the schedule of reporting that will be required
- All the terms and conditions in Appendix A flow down to all subrecipients.

Award Type and Amount

Each award will fund a program for one strategic opportunity area. Applicants wishing to lead or co-lead programs in multiple opportunity areas must submit a separate proposal for each domain.

Applicants may request any amount.

Funds will be awarded in the form of a grant, with a Memorandum of Understanding between the State Council of Higher Education for Virginia and the lead institution.

Matching Funds Required

A 1:1 match is required; see below for details.

Number of Awards

Up to five grants may be awarded (no more than one grant will be awarded for each strategic domain area; VRIC may opt to award no grants for a strategic domain area)

Period of Performance

The grant period will be three years, with the option to renew for a 4th and 5th year if funds are available and promised performance metrics are achieved.

Application Contents and Submission Information

Application Contents

Please use the proposal template provided below.

- Proposals may be single spaced.
- Font must be either Times New Roman 12 pt. or Arial 11 pt.
- Font for figures, tables, formulas and diagrams can be reduced no smaller than Times New Roman 10 pt. or Arial 9 pt.
- Margins, in all directions, must be at least an inch; margins for illustrations, graphics, diagrams, tables or figures that take up a full page may be reduced no smaller than half an inch.
- Inclusion of links to additional information is allowed; however, reviewers are not required to follow the links or consider the additional information in the review of applications.
- Pages should be numbered on the bottom right.
- Inclusion of other information in headers or footers is at the discretion of the applicant.

Proposals must include the sections listed below in the same order and with identical headings. No other documents or attachments are allowed. If submitted, unallowable attachments will be removed prior to review.

The page limit for the application package, not including the budget, budget narrative and biosketches, is 20.

Cover Sheet: 1-page limit

Please include:

- Title of proposed program
- Targeted strategic domain area
- Name and contact information for lead institution
- Name and contact information for co-lead institution
- Amount of funds requested over three years
- Estimated amount of matching funds (must be at least 1:1)
- Printed name, title and signature of authorized signer

Executive Summary: 1-page limit; will be published on website and used for press release if proposal is funded.

Results from Prior State Funding: Include information related only to state funding for the same program proposed in this application.

Description of Pending Proposals for State Funding: Include information related only to state funding for the same program proposed in this application.

Background: Describe previous experience (1) administering a program of this type, if any, and (2) commercializing the products of university research specific to the targeted strategic domain area.

Program Director(s): Name the program director(s) and briefly describe their qualifications. Attach biosketches or resumes (see below for instructions). If an applicant intends to hire a program director(s), the applicant must name an interim program director who will be available on the first of day of the grant period and remain on the project, meeting each proposed milestone and timely producing all deliverables, until a permanent program director is hired. In addition to providing the interim program director's qualifications, applicants should describe the qualifications that will be required of the newly hired director.

If the program director(s) are not situated within the technology transfer offices (or equivalent) of the applicant institutions, describe the active role and integrated participation of all institutions' technology transfer offices.

Program Management and Governance Structure: Describe the proposed management structure, project management practices, communication plan and accountabilities of each of the collaborating institutions. Please describe a governance structure comprised of an inclusive group of stakeholders; overall, across all governing councils, steering and/or advisory committees and review panels, the majority of members should be from outside academia.

Description of Proposed Program: Applicants must propose a program that includes, at minimum, the following required elements. Please describe how these elements will be packaged into a disciplined process to streamline commercialization of the products of university research.

- Processes for identification of research teams or products through (1) "scouting" for promising innovations that address unmet market needs and (2) self-nomination by research teams that have identified or disclosed commercializable technology
- A process for choosing which of the identified teams or products will receive support
- Identification of the skills needed by mentors tailored to the targeted domain area
- A clear plan to recruit qualified mentors
- A process to match mentors to projects that would then be eligible to compete for proof-of-concept funds
- Funding for proof-of-concept projects at a stage or stages chosen by the applicant institutions as most appropriate to the targeted domain area; i.e., de-risking new technology
- A process for application, selection, award and monitoring of proof-of-concept projects.
- Supportive services that mentors and consultants might provide to researchers; for example:
 - Technology/research advisement
 - Experiment design and assistance with application for proof-of-concept funds
 - Regulatory evaluation and advisement

- Market evaluation
- Business planning
- Business opportunity articulation
- Educational programs or work experiences to prepare students and researchers for entrepreneurial challenges and work environments
- Link technology and researchers to external networks
- Identification of and access to early-stage capital (VRIF funds cannot be used to capitalize a seed fund)
- Applicants may also include elements such as:
 - Hosting special events to showcase inventions, ideas, research, technologies and entrepreneurs to promote the exchange of ideas that leads to the formation of new collaborations and ultimately to the commercialization of innovations
 - Engaging local business associations and governments to ensure that high growth entrepreneurs and companies are more fully integrated into the local business community and that their growing needs are addressed by a robust support network that includes specialized and readily-accessed technical assistance and access to capital, business associations and government officials

Timeline, Milestones and Deliverables: Please include implementation milestones such as finalizing governance documents and memoranda of understanding between the co-leading institutions, mentor recruitment, finalizing processes for researchers to request the support of mentors and for re-granting, recruiting peer reviewers and awarding the first sub-grants, as well as projected output and outcome milestones listed under Reporting Requirements, below.

Biographical Sketches: 18-page limit. A biographical sketch is required for the Program Director at the lead institution and the Co-Director(s) responsible for the contributions of the co-leading institution. Biosketches may be submitted for other senior or key personnel. Applicants can choose to use either NIH-style or NSF-style biosketch format. Non-scientist key personnel can submit a resume. Documents are limited to three pages each.

Budget and Budget Narrative: Please provide a detailed budget for each year of the grant period and cumulatively. The detailed budget should reflect planned expenditures of grant funds and the required 1:1 matching funds. Therefore, applicants requesting \$5 million, should submit a budget totaling at least \$10 million.

Budgets will be accepted in any format (for example, a format published by an institution's office of sponsored programs or a budget extracted from an institution's electronic research administration portal) that includes all the usual direct cost budget categories: salaries/wages, benefits, travel, supplies, other direct costs, subrecipients (subawards or contracts to collaborating entities or vendors), etc.

VRIF funds cannot be used for indirect costs.

The amounts for each budget line item must be documented and justified in the budget narrative. For proposals that contain a subaward(s), each subaward must include a separate budget narrative. There is no page limit for the budget narrative.

Matching Funds Guidelines

The budget narrative should include an explanation of the source(s) of matching funds.

Match requirements:

- Commitment of a 1:1 match is a criteria for eligibility, rather than a review criteria (i.e., additional points will not be awarded for commitments of greater than a 1:1 match; however, applicants can note in their proposals or budget narratives an estimate of the total cost of the project and an indication of the total match that might be expended during the grant period).
- Unrecovered indirects can be counted toward the match (as calculated using the basis in the institution's negotiated indirect agreement).
- Grantees cannot count toward the match grant awards from VRIF, VBHRC, CHRB, CIT, Tobacco Commission, GO Virginia, Virginia Economic Development Partnership.
- The matching funds must be in-hand at time of award (or committed as documented by a legally binding grant award or pledge; applicants must identify which funds are in-hand and which are pledged).
- If the match is another grant, that grantmaker's terms and conditions or authorizing legislation must not prohibit use of those funds as a match.
- If the match is another grant, the nexus between the two projects must be clear.
- The funds proposed as matching funds cannot be the same funds that have already been committed as a match to another project.
- Expenditure of matching funds must be tracked and reported in progress reports.
- The commitment of matching funds is legally binding and is subject to audit.

The signature of the applicant's authorized signer indicates that the Vice President/Provost for Research (or equivalent, or designee) has conducted due diligence to ensure the offered match complies with these guidelines.

Application Submission

The full proposal, the corresponding redacted proposal (see FOIA section, above) and an Excel budget spreadsheet (if used) should be submitted via a single email to the SCHEV Associate for Research Investment, lynnseuffert@schev.edu. One pdf containing the full proposal and one pdf containing the redacted proposal is preferred. Please name the attachments so that the Associate can readily distinguish the redacted proposal and also determine that the application packet is complete. If applicants are not submitting a redacted proposal because the application includes no information for which protection is sought, please state that in the email.

Due date: January 13, 2020

Application Processing, Review and Award

Upon receipt via email of an application package, SCHEV staff will respond by return email within two business days to confirm receipt.

Review of applications is a three-stage process. The statutes that created VRIF state the criteria to be considered.

The first stage is an administrative review by SCHEV staff to ensure that proposal packets are complete and conform to administrative requirements in this Call for Proposals.

The statute requires that conforming applications be assigned to external peer reviewer(s) with recognized science and technology expertise. The reviewer(s) will comment on the application, including perceived strengths and weaknesses.

Following peer review and in preparation for the third stage of review, SCHEV staff may conduct additional due diligence and/or ask applicants for clarifying information.

SCHEV staff will prepare a summary statement for each proposal that includes information such as the reviewers' comments, a summary of strengths and weaknesses, or other summary highlights of the peer review process.

In compliance with Va. Code §23.1-3133 E, SCHEV staff will forward to VRIC any proposal receiving a favorable evaluation.

The third stage is review by VRIC. In compliance with Va. Code §2.2-3711, "Closed meetings authorized for certain limited purposes," these meetings will be closed to the public. VRIC members will review the proposals, starting with the comments of the peer reviewer(s) and then adding their expertise and knowledge of the statewide impact and contribution the projects might have.

VRIC will then hold a public meeting where a formal vote will be taken to determine which proposals will be funded. This meeting might occur directly following the closed meeting or on a different date.

Finally, per statute, all decisions by VRIC shall be final and not subject to further review or appeal. The Governor may announce any award approved by the Committee.

Reporting Requirements

Reports are required at intervals during the grant period. A final cumulative report also is required. Grantees will be required to continue to report progress on some measures for five years after the end of the grant period.

Annual General Audience Progress Report

VRIC is required to submit a report to the General Assembly each November 1. In preparation for the submission of that report, grantees will submit a general audience progress report by September 30 of each year.

Annual Financial Reports

Annual financial reports are due July 31, 2021 and each July 31 thereafter, documenting the financial status of the project through June 30.

SCHEV will accept reports generated from an institution's accounting system reporting function.

The reports should include information regarding the total amount awarded, the amount forwarded to the lead institution, the amount encumbered to date, the amount spent to date and the amounts remaining (from the disbursement and total) for each budget category and for the same budget categories for each subaward.

Reports showing the same information for matching funds are required, if possible on the same report or a separate parallel report.

Annual Technical Narrative Progress Reports

Annual technical progress reports in narrative form will be due July 31, 2021 and each July 31 thereafter, describing achievements through June 30.

There is no required template for these reports. Grantees should describe progress on the grantee’s proposed milestones and adherence to the timeline, in addition to reporting on the relevant output and outcome measures below.

Reports Due Upon Request for No-Cost Extension

Requests for no-cost extensions should be made at least sixty (60) days prior to the desired effective date of the requested change. Preferably, grantees should anticipate the need to request a no-cost extension and make that request in concert with a scheduled progress report.

If more than 30 days have passed since the submission of the reports above, grantees will be required to submit reports at the time of a no-cost extension request. In addition to the reports, the request should provide a brief narrative justification for the extension, length of requested extension (maximum one year), amount of unexpended balance and a timeline for activities and expenditure of the remaining funds.

Final Cumulative Narrative and Financial Reports

Final, cumulative narrative and financial reports are due 60 days after the end of the grant period.

Output and Outcome Metrics to Be Reported

The narrative progress reports should include progress on the outputs and outcomes below. In addition, VRIC may require that, annually for five years after the end of the grant period, grantees submit reports documenting continuing progress on output and outcome metrics to be selected at a later date.

- Number of applications for POC projects
- Dollar amount of requests
- Number of institutions applying
- Number of POC grant awards
- Dollar amount awarded
- Number of grants awarded to each institution
- Total dollars awarded to each institution
- Follow-on funding:
 - Angel, seed, venture capital or other equity investments (number of investors and dollar amounts)
 - Industry
 - Foundations
 - Federal grants
 - State grants
- Number of invention disclosures
- Number of patent applications filed
- Number of patents granted
- Number of technologies licensed
- Number of new products launched by participants
- Publications
- Presentations
- Number of new companies started

- Number of existing companies supported
- Number of companies that move out of state
- Job creation, in Virginia and compared to job creation at companies that move out of Virginia
- Number of events (e.g., networking or mentoring sessions, boot camps) held
- Number of Small Business Innovation Research (SBIR) proposals supported and awards received
- Change in valuation of start-up or existing company pre- vs. post- proof of concept

Award Administration

SCHEV staff would like to build a relationship with grantees and foster a collaborative approach to addressing issues and removing any roadblocks that arise.

For details regarding post-award revisions that require prior approval, along with other conditions of award, please see Appendix A: Terms and Conditions of Award, specifically Attachment 1. Special Terms and Conditions.

Appendix A: Assurances and Certifications – Terms and Conditions of Award

Assurances and Certifications

The Authorized Organizational Representative (AOR) signing the signature page is assuring and certifying the following:

Assurance Regarding Freedom of Information Act Exclusion: The Virginia Freedom of Information Act does NOT completely protect unfunded or funded grant proposals from exposure. The AOR is assuring that the applicant institution has consulted with the project team and the attorney general representative, if necessary, regarding whether a written request for protection is being made to the Virginia Research Investment Committee in accordance with Va. Code §2.2-3705.6, item 28. If the applicant is invoking the exclusion contained in item 28, the AOR is assuring that a redacted version of the application packet is being submitted that identifies with specificity the data, information or other materials for which protection is sought and states the reason why protection is necessary. The Committee shall determine whether the requested exclusions from disclosure are necessary to protect the trade secrets, financial information or research-related information of the applicant. The Committee shall make a written determination of the nature and scope of the protection to be afforded by it under the Va. Code.

Certification Regarding Organizational Support: The AOR is certifying that there is organizational support for this proposal, that matching funds will be secured as described in the proposal and that the Vice President for Research (or equivalent, or designee) has conducted due diligence to ensure the offered match complies with the guidelines in the Call for Proposals. Further, if the proposed plan for matching funds does not materialize, the AOR is certifying that the institution will submit a revised plan to comply with the required 1:1 match.

Certification Regarding Collaborating Entity AOR Approval: The applicant AOR is certifying that the AORs (or equivalent) of all collaborating entities have made the same assurances and certifications and that documentation of such exists.

Certification Regarding State Funds: The AOR is certifying that the organization understands that VRIF is awarding state funds. The organization will comply with all rules and regulations regarding state funds, including but not limited to the Commonwealth Accounting Policies and Procedures Manual, the Virginia Public Procurement Act (when applicable) and the Library of Virginia's Virginia Public Records Management Manual.

Certification Regarding Conflict of Interest: The AOR is certifying that the organization has implemented and is enforcing a written policy on conflicts of interest in research and that, to the best of his/her knowledge, all financial disclosures required by the conflict of interest policy were made; and that conflicts of interest, if any, were, or prior to the organization's expenditure of any funds under the award, will be, satisfactorily managed, reduced or eliminated in accordance with the organization's conflict of interest policy.

Certification Regarding Compliance with the Animal Welfare Act. The AOR is certifying that proposed projects involving use of any vertebrate animal for research or education will be approved by the submitting organization's Institutional Animal Care and Use Committee (IACUC) before or substantially concurrent with an award. If the involvement of animals is indefinite at the time of award, the AOR is certifying that, prior to conducting any animal activities, and prior to expending any grant funds for those animal activities, IACUC approval will

be obtained. It is an institutional responsibility to ensure that the research described in the application is congruent with any corresponding protocols approved by the IACUC.

Certification Regarding Compliance with the Common Rule. The AOR is certifying that proposed projects involving research with human subjects will ensure that subjects are protected from research risks in conformance with the relevant federal policy known as the Common Rule (Federal Policy for the Protection of Human Subjects). All projects involving human subjects must either (1) have approval from the organization's Institutional Review Board (IRB) before or substantially concurrent with issuance of a VRIF award or (2) maintain documentation that the IRB has declared the research exempt from IRB review, in accordance with the applicable subsection, as established in section 101(b) of the Common Rule.

If human subjects research is anticipated within the period of the award but definite plans for involvement of human subjects cannot be described in the application, then the AOR is certifying that, prior to the involvement of human subjects, the project will obtain IRB approval or exemption. It is an institutional responsibility to ensure that the human subjects research described in the application is congruent with any corresponding protocols approved by the IRB.

Certification Regarding Education in the Protection of Human Research Participants. The AOR is certifying that, if the proposed project involves research with human subjects, all senior/key personnel involved in human subjects research have received training in the protection of human subjects. Senior/key personnel include all individuals responsible for the design or conduct of the study, including senior/key personnel of collaborating partner entities or alternate performance sites if they are participating in research that involves human subjects.

Certification Regarding Responsible Conduct of Research: The AOR is certifying that the institution has a plan to provide appropriate training and oversight in the responsible and ethical conduct of research to undergraduates, graduate students and postdoctoral researchers who will be supported by VRIF to conduct research.

Terms and Conditions

DO NOT SIGN AND SUBMIT AT TIME OF APPLICATION

Grantor and grantee agree that this MOU will be performed in accordance with the following:

1. The statement of work and budget for this award are as specified in the grantee's proposal submitted _____ (date) _____ and incorporated herein by reference. In its performance of the statement of work, grantee shall be an independent entity and not an employee or agent of grantor.
2. Matters concerning the performance of this award should be directed to the appropriate party's contact, as shown in Attachments 3A & 3B.
3. Matters concerning the request or negotiation of any changes in the terms, conditions or amounts cited in this award agreement, and any changes requiring prior approval, should be directed to the appropriate party's Contact, as shown in Attachments 3A & 3B. Any such changes made to this MOU require the written approval of each party's Authorized Official as shown in Attachments 3A & 3B.
4. Incorporated into this MOU by reference are the VRIF Call for Proposals, the entirety of the grantee's application packet including the assurances and certifications, the special terms and conditions in Attachment 1 and the general terms and conditions in Attachment 2.

By an Authorized Official of Grantor

By an Authorized Official of Grantee

(To be signed only if award is made)

(To be signed only if award is made)

Signature

Signature

Printed Name

Printed Name

Title

Title

Date: _____

Date: _____

Attachment 1: Special Terms and Conditions

Applicability

The terms and conditions in the MOU and all attachments apply directly to the grantee and also apply to collaborating entities, subrecipients and contractors. The grantee is accountable for the performance of the project, program or activity; the appropriate expenditure of funds under the award by all parties; and all other obligations of the grantee, as cited in the MOU and all attachments.

Site Visits

VRIC members and/or staff may conduct site visits during the course of the grant period.

Changes

The changes listed below require the prior approval of the grantor. Requests should be directed to the grantor's Contact, as shown in Attachments 3A & 3B.

- Changes to the scope of the project
- Changes to milestones and timelines that impact the schedule for disbursement of funds
- Changes to collaborating entities
- Changes to key personnel named in the approved proposal
- Reduction of effort of the PI or any Co-PI of 10% or more from the level in the approved proposal
- Plans for continued progress during extended absence of the PI or any Co-PI
- Changes to the budget detailing the planned expenditure of general fund amounts resulting in a deviation of 20% or more in any budget category; the request must include the current allocation of resources along with specific detail and justification for the reallocation

No-cost extensions require the approval of the grantor. Requests for a no-cost extension should be addressed to and received by the Contact, as shown in Attachments 3A & 3B, not less than sixty (60) days prior to the desired effective date of the requested change. See "Reporting Requirements" section of the Call for Proposals.

Disbursement of Funds, Accounting and Audit

After receiving a written request from the Virginia Research Investment Committee, grantor will authorize the State Comptroller and the Virginia Department of Planning and Budget to release the first payment to the grantee. The first payment will be sufficient for the grantee to achieve the first milestone on the timeline included in the grantee's proposal.

After initial disbursement, subsequent payments will be contingent upon successful performance against key milestones and other performance standards outlined in the proposal. Non-compliance with the terms and conditions of this award, including reporting requirements, and/or failure to achieve milestones on the approved timeline could result in a hold on disbursement of additional funds until the grantee is in compliance.

All payments shall be considered provisional and subject to adjustment within the total estimated cost in the event such adjustment is necessary as a result of an adverse audit finding against the grantee.

Award monies not expended by the end of the period of performance must be returned.

The grantee will oversee the expenditure of all grant funds by all parties and ensure that all funds are expended in strict compliance with state rules, regulations and guidelines, the terms

and conditions of this MOU, professional accounting standards and all applicable state laws and requirements.

The grantee will maintain systematic accounting records of all expenditures relating to this award, including the supporting source documentation. Records will be retained by the grantee in accordance with Library of Virginia Record Retention Policy.

Records will be available for inspection and/or audit by SCHEV, the Virginia Auditor of Public Accounts or other appropriate entity.

Transfer of Award or Change of Principal Investigator

If the Principal Investigator leaves the grantee institution during the grant period, the grant will not be transferred to a new institution. The grantee institution will have the opportunity to propose a new Principal Investigator, subject to approval of SCHEV staff and the Chair of the VRIC. If an agreement cannot be reached regarding assignment of a new Principal Investigator, a collaborating institution, if any, could propose to become the lead grantee. If no agreement can be reached, the award will be terminated and unexpended and unobligated funds must be returned.

Reporting

Report type and due dates are required as detailed in the Call for Proposals.

Future Applications to VRIF

Award recipients and their partners who are delinquent in any VRIF obligation are not eligible to apply for or receive future VRIF funding until obligations are resolved.

Termination of Award

SCHEV may terminate this award in the event of non-compliance with the terms and conditions of this MOU, significant lack of progress including failure to achieve milestones on the timeline set forth in the proposal, or other extenuating conditions. In the case of termination, the grantee will return any unexpended and unobligated funds.

Acknowledgments

Professional publications or presentations resulting from activities supported by this award must acknowledge the Virginia Research Investment Fund.

Acknowledgments of the Virginia Research Investment Fund are appreciated on poster presentations, printed programs, news releases, web news, e-mail alerts or announcements regarding grant-funded activities.

Attachment 2: General Terms and Conditions

- A. **VENDORS MANUAL**: NA
- B. **APPLICABLE LAWS AND COURTS**: This contract shall be governed in all respects by the laws of the Commonwealth of Virginia and any litigation with respect thereto shall be brought in the courts of the Commonwealth. The agency and the grantee are encouraged to resolve any issues in controversy arising from the award of the contract or any contractual dispute using Alternative Dispute Resolution (ADR) procedures (Code of Virginia, §2.2-4366). ADR procedures are described in Chapter 9 of the Vendors Manual. The grantee shall comply with all applicable federal, state and local laws, rules and regulations.
- C. **ANTI-DISCRIMINATION**: By signing this contract, the grantee certifies to the State Council of Higher Education for Virginia that they will conform to the provisions of the Federal Civil Rights Act of 1964, as amended, as well as the Virginia Fair Employment Contracting Act of 1975, as amended, where applicable, the Virginians With Disabilities Act, the Americans With Disabilities Act and §2.2-4311 of the Virginia Public Procurement Act (VPPA). The grantee shall not discriminate against any recipient of goods, services or disbursements made pursuant to the contract on the basis of the recipient's religion, religious belief, refusal to participate in a religious practice or on the basis of race, age, color, gender or national origin and shall be subject to the same rules as other organizations that contract with public bodies to account for the use of the funds provided; however, if the faith-based organization segregates public funds into separate accounts, only the accounts and programs funded with public funds shall be subject to audit by the public body. (Code of Virginia, §2.2-4343 1.E.).
1. During the performance of this contract, the grantee agrees as follows:
 - a. The grantee will not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, age, disability or any other basis prohibited by state law relating to discrimination in employment, except where there is a bona fide occupational qualification reasonably necessary to the normal operation of the grantee. The grantee agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.
 - b. The grantee, in all solicitations or advertisements for employees placed by or on behalf of the grantee, will state that such grantee is an equal opportunity employer.
 - c. Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient for the purpose of meeting these requirements.
 2. The grantee will include the provisions of 1. above in every subcontract or purchase order over \$10,000, so that the provisions will be binding upon each subcontractor or vendor.
- D. **ETHICS IN PUBLIC CONTRACTING**: By signing this contract with the State Council of Higher Education for Virginia, the grantee certifies that their offer is made without collusion or fraud and that they have not offered or received any kickbacks or inducements from any other contractor, supplier, manufacturer or subcontractor in connection with their offer and that they have not conferred on any public employee having official responsibility for this transaction any payment, loan, subscription, advance, deposit of money, services or

anything of more than nominal value, present or promised, unless consideration of substantially equal or greater value was exchanged.

- E. **IMMIGRATION REFORM AND CONTROL ACT OF 1986**: By signing this contract with the State Council of Higher Education for Virginia, the grantee certifies that the grantee does not, and shall not during the performance of the contract, knowingly employ an unauthorized alien as defined in the federal Immigration Reform and Control Act of 1986.
- F. **DEBARMENT STATUS**: By signing this contract, grantee shall certify that they are not currently debarred by the Commonwealth of Virginia from contracts for the type of activities covered by the Scope of Work/proposal, nor are they an agent of any person or entity that is currently so debarred.
- G. **ANTITRUST**: By entering into this contract, the grantee conveys, sells, assigns and transfers to the State Council of Higher Education for Virginia all rights, title and interest in and to all causes of action it may now have or hereafter acquire under the antitrust laws of the United States and the Commonwealth of Virginia, relating to the particular goods or services purchased or acquired by the State Council of Higher Education for Virginia under said contract.
- H. **MANDATORY USE OF STATE FORM AND TERMS AND CONDITIONS FOR IFBs AND RFPs**: NA
- I. **CLARIFICATION OF TERMS**: NA
- J. **PAYMENT**: See “Disbursement of Funds, Accounting and Audit” in Attachment 1: Special Terms and Conditions.
- I. **TESTING AND INSPECTION**: The State Council of Higher Education for Virginia reserves the right to conduct any test/inspection it may deem advisable to assure goods and services conform to the specifications in the Scope of Work.
- J. **ASSIGNMENT OF CONTRACT**: A contract shall not be assignable by the grantee in whole or in part without the written consent of the State Council of Higher Education for Virginia.
- K. **PRECEDENCE OF TERMS**: The following General Terms and Conditions VENDORS MANUAL (NA), APPLICABLE LAWS AND COURTS, ANTI-DISCRIMINATION, ETHICS IN PUBLIC CONTRACTING, IMMIGRATION REFORM AND CONTRAL ACT OF 1986, DEBARMENT STATUS, ANTITRUST, MANDATORY USE OF STATE FORM AND TERMS AND CONDITIONS (NA), CLARIFICATION OF TERMS (NA), PAYMENT (NA) shall apply in all instances. In the event there is a conflict between any of the other General Terms and Conditions and any Special Terms and Conditions, the Special Terms and Conditions shall apply.
- L. **QUALIFICATIONS OF (BIDDERS/OFFERORS)**: NA
- M. **TESTING AND INSPECTION**: NA (duplicate of I. above)
- N. **ASSIGNMENT OF CONTRACT**: NA (duplicate of J. above)
- O. **CHANGES TO THE CONTRACT**: See Attachment 1: Special Terms and Conditions.
- P. **DEFAULT**: See Attachment 1: Special Terms and Conditions.

- Q. **TAXES:** Sales to the Commonwealth of Virginia are normally exempt from state sales tax. State sales and use tax certificates of exemption, Form ST-12, will be issued upon request.
- R. **USE OF BRAND NAMES:** NA
- S. **TRANSPORTATION AND PACKAGING:** NA
- T. **INSURANCE:** NA
- U. **ANNOUNCEMENT OF AWARD:** NA
- V. **DRUG-FREE WORKPLACE:** During the performance of this contract, the grantee and subcontractors agree to provide a drug-free workplace for the grantee's employees. Grantee will inform employees that the unlawful manufacture, sale, distribution, dispensation, possession or use of a controlled substance or marijuana is prohibited in the grantee's workplace.
- W. **NONDISCRIMINATION OF GRANTEES:** Grantee shall not be discriminated against because of race, religion, color, sex, national origin, age, disability, faith-based organizational status, any other basis prohibited by state law relating to discrimination in employment or because grantee employs ex-offenders unless the State Council of Higher Education for Virginia has made a written determination that employing ex-offenders on the specific contract is not in its best interest. If the award of this contract is made to a faith-based organization and an individual, who applies for or receives goods, services or disbursements provided pursuant to this contract, objects to the religious character of the faith-based organization from which the individual receives or would receive the goods, services or disbursements, the public body shall offer the individual, within a reasonable period of time after the date of his objection, access to equivalent goods, services or disbursements from an alternative provider.
- X. **eVA BUSINESS-TO-GOVERNMENT VENDOR REGISTRATION, CONTRACTS AND ORDERS:** NA
- Y. **AVAILABILITY OF FUNDS:** The parties herein understand and agree that the agency shall be bound hereunder only to the extent of the funds available or which may hereafter become available for the purpose of this agreement.
- Z. **SET-ASIDES:** NA
- AA. **BID PRICE CURRENCY:** NA
- BB. **AUTHORIZATION TO CONDUCT BUSINESS IN THE COMMONWEALTH:** NA

Additional Terms and Conditions

- A. **RENEWAL OF CONTRACT:** NA
- B. **ADDITIONAL INFORMATION:** NA
- C. **DELIVERY POINT:** N/A
- D. **eVA Business-To-Government Contracts and Orders:** NA

- E. **PRIME GRANTEE RESPONSIBILITIES**: The grantee shall be responsible for completely supervising and directing the work under this contract and all subcontractors that he may utilize, using his best skill and attention.

Subcontractors who perform work under this contract shall be responsible to the prime grantee. The grantee agrees that he is as fully responsible for the acts and omissions of his subcontractors and of persons employed by them as he is for the acts and omissions of his own employees.

- F. **PROPOSAL ACCEPTANCE PERIOD**: NA

- G. **WARRANTY**: NA

- H. **SUBCONTRACTS**: No portion of the work shall be subcontracted without prior written consent of the purchasing agency. In the event that the grantee desires to subcontract some part of the work specified herein, the grantee shall furnish the purchasing agency the names, qualifications and experience of their proposed subcontractors. The grantee shall, however, remain fully liable and responsible for the work to be done by its subcontractor(s) and shall assure compliance with all requirements of the contract.