

STATE COUNCIL OF HIGHER EDUCATION FOR VIRGINIA

Ad Hoc Committee on Research

**101 N. 14th Street, 9th floor
SCHEV Main Conference Room
Richmond, VA
March 8, 2017
8:00 a.m. – 9:00 a.m.**

Meeting Agenda

- | | |
|---|-----------|
| 1. Call to Order | 8:00 a.m. |
| 2. Discussion of Prior Meeting (February 23) | Page 2 |
| 3. Review of (Revised) Organizing Principles for Round 1 of Awards from the Virginia Research Investment Fund | Page 9 |
| 4. Advice to the Virginia Research Investment Committee | Page 11 |
| 5. Motion to Adjourn | 9:00 a.m. |

NEXT MEETING: March 20, 2017 – Virginia Military Institute, Lexington, Virginia

Committee Members:

Ken Ampy	William Murray
H. Eugene Lockhart	Minnis E. Ridenour

NOTES:

Ad hoc member Gene Lockhart will participate by phone from General Atlantic, Park Avenue Plaza, 55 E 52nd St., 32nd Floor, New York, NY 10055. All Council members are invited to attend, and Council member Henry Light will participate by phone from 1221 S. Fairwater Drive, Norfolk, VA. No public comment will be taken at this meeting.

Materials accompanying this agenda are intended for consideration by the Ad Hoc Committee on Research at its meeting (dated above), and may not reflect final Committee action. For a final version of any item contained in these materials, please visit the SCHEV Council's website at <http://www.schev.edu/index/agency-info/council-information/agenda-books> or contact Lynn Seuffert at lynnseuffert@schev.edu.

State Council of Higher Education for Virginia Agenda Item

Item: Ad Hoc Committee on Research – Item 2 – Discussion of Prior Meeting (Feb 23)

Date of Meeting: March 8, 2017

Presenters: Alan Edwards
Director of Policy Studies
alanedwards@schev.edu

Lynn Seuffert
Associate for Research Investment
lynnseuffert@schev.edu

Most Recent Review/Action:

- No previous Council review/action
 Previous review/action

Date:

Action:

Background Information/Summary of Major Elements:

At the February 23, 2017, meeting of the Ad Hoc Committee on Research, members expressed interest in convening again prior to Council's regular business meetings on March 20 and 21 in order to: (i) reflect as a group on the discussions with public institutions' research officers; and (ii) provide considered guidance to staff on the proposed organizing principles document in advance of staff's presentation of it to the Virginia Research Investment Committee (VRIC) on March 14.

To inform those members absent from some or all of the meeting on February 23, and to facilitate reflection on that meeting for the discussion on March 7, staff provides the draft minutes of the prior meeting. (Action to approve these minutes and those of prior meetings will be requested at the March 20 meeting.)

Materials Provided:

- Draft Minutes of February 23 Meeting of the Ad Hoc Committee

Page 3

Financial Impact: None

Timetable for Further Review/Action: None

Resolution: None

**STATE COUNCIL OF HIGHER EDUCATION FOR VIRGINIA
AD HOC COMMITTEE ON RESEARCH MEETING
FEBRUARY 23, 2017
DRAFT MINUTES**

Dr. Murray called the meeting to order at 1:05 p.m. in the SCHEV Main Conference Room, 9th Floor, James Monroe Building, Richmond, Virginia.

Committee members present: Ken Ampy (left the meeting at 2:20 p.m.), William Murray, Minnis E. Ridenour

Council member present: Henry Light

VRIC members present: Karen Jackson, Ric Brown, Peter Blake

Staff present: Peter Blake, Alan Edwards, Lynn Seuffert, Joe DeFilippo. Al Wilson, SCHEV counsel from the Office of the Attorney General, also was in attendance.

Invited guests: Representatives from public institutions of higher education in Virginia.

WELCOME AND INTRODUCTIONS

Dr. Murray welcomed committee members, VRIC members, the attending Council member, staff, and guests and asked all to introduce themselves.

Dr. Murray asked Mr. Blake to provide an update on the recent amendments by the General Assembly to the Virginia Research Investment Fund and associated budget language.

Mr. Blake highlighted the changes, including the move to SCHEV of the responsibility to develop and maintain the Commonwealth Research and Technology Strategic Roadmap and the expansion of the role and scope of the Virginia Research Investment Committee. He mentioned that the budget includes \$12 million in general funds for VRIF awards; the debt authorization did not change. He also mentioned that a change in the budget language will authorize VRIC to use an unspecified portion of the appropriated amount of general funds for an assessment of research assets and the best areas of research for commercialization.

Mr. Blake concluded by asking everyone to participate and help make VRIF a success.

REVIEW OF TRENDS AND CURRENT STRENGTHS IN VIRGINIA HIGHER EDUCATION RESEARCH

Dr. Murray requested that staff explain the information depicted in the projected slides, which were variations of Figure 1 in “Staff Report – Virginia Areas of Research Strength.” Ms. Seuffert highlighted the areas of research expertise at Virginia institutions, as evidenced by expenditures of research funds, and the correlated patent awards that indicate areas of research with potential to culminate in commercialization, economic development, and job creation. The third element on the first slide illustrated the areas of research strength in the federal and private sector, as indicated by patent awards in those sectors. Finally, the alignment of the areas of research mentioned in the VRIF statute was described.

University attendees pointed out that categories assigned by the U.S. Patent Office (USPO) do not correspond to academic departments. For example, a patent categorized by the USPO as “physics” usually is not awarded to a researcher in an institution’s department of physics.

DISCUSSION OF FUTURE DIRECTIONS: BUILDING ON STRENGTHS AND IDENTIFYING NEW OPPORTUNITIES

Dr. Murray opened the topic by requesting comments from the Commonwealth’s top university in research expenditures, Virginia Tech. Dr. Theresa Mayer recapped her participation that morning in the meeting of the Association of Public and Land-Grant University’s Council on Research Executive Committee, where the future of federal research funding was discussed. She said speakers had suggested to attendees that they should develop a narrative for elected representatives in Washington about the importance of federal funding for research.

A lively and lengthy roundtable conversation between Council members and institutional representatives ensued.

Four topics emerged from the discussion and are summarized below:

1. Institutions’ areas of research strength and the alignment of these areas to those designated in the statute;
2. Recruitment and retention of research talent and the talent pipeline;
3. Intellectual property expertise; and
4. Other needs

1. Institutions’ areas of research strength and the alignment of these areas to those designated in the statute

Speakers generally agreed that the three research areas identified in the statute – biosciences, cybersecurity, and data analytics – are aligned with areas of strength at

many institutions and are sufficiently broad to provide opportunities for all public institutions to participate in some fashion.

Among the areas of research not mentioned in the statute, those for which at least one institution would like to submit proposals include:

- Agriculture;
- Aquaculture (commercialization opportunities exist, such as the current oyster licensing of GMO oysters for disease resistance);
- Renewable energy (clean energy is being demanded by individual customers; energy storage is an area of opportunity);
- Coastal resilience (the economic development opportunity is in “green collar” jobs; i.e., engineering to retrofit stormwater systems; the green collar sector needs to be credentialed and Virginia can be first out of necessity);
- Population health; and
- Education and social sciences (an argument was made that patentable ideas are emerging in these areas).

2. Recruitment and retention of research talent and the talent pipeline

Speakers generally agreed that institutions are seeking to recruit early-stage or rising super-stars, rather than Nobel Prize winners. Some speakers suggested that the statute’s “eminent researcher” terminology be modified in the grant guidelines to reflect that reality. These rising super-stars should be entrepreneurial and bring with them strong connections to federal agencies and industry.

Speakers also agreed that institutions are seeking to hire clusters of faculty around key topic areas, bringing in multiple entrepreneurial researchers to build a critical mass working in complementary areas. Helping them to build cross-institutional collaborations here in Virginia (a “web of professionalism”) is a strategy to ward off “poaching.”

These collaborative and complementary clusters also contribute to the talent pipeline by attracting the best students to their associated undergraduate and graduate programs. Many graduate students are entrepreneurial and are attracted to programs that provide opportunities in that area.

Attendees from the comprehensive institutions commented that, unlike their research-university counterparts, they generally lack the resources to recruit rising super-stars. Instead, they “grow their own” talent. They focus on having a supportive environment for young faculty to grow into researchers. They also said that collaboration with the research universities helps to grow their researchers. New faculty, with new energy for research, need to get connected with researchers at larger institutions. These connections benefit both small and large institutions.

Several attendees noted the importance of endowed positions to attract rising stars. Endowments of \$2 million are at the lower end. Earnings from the endowment can be

used to fund the operations. An endowment does not replace a start-up package. Institutions need to offer both.

3. Intellectual property expertise

As the conversation turned to the support that researchers need related to commercialization of the products of their research, Mr. Ampy mentioned a recent visit to MIT and its well-resourced patent and licensing offices. He asked attendees about support at Virginia institutions.

The comprehensive (non-research) institutions were vocal about their need for resources to develop expertise in this area, both related to negotiating agreements with industry or contracts with federal agencies, as well as assisting principal investigators to consider commercial potential earlier in the research continuum. These investigators need mentoring or other professional development to move their basic research to an application.

The research universities agreed that their faculty also need this mentoring and a better connection between their lab and the IP offices.

Attendees discussed whether shareable best practices and policies exist for patents and IP.

A committee member commented that the corporate sector has skilled contract negotiators who ensure that industry gets the most benefit out of a deal with a university; institutions need to have strong negotiators to ensure that they aren't giving away valuable assets. An attendee mentioned a movement away from strong protectionism of IP in order to lower the barriers to partnering with industry; universities have been accused in the past of overvaluing their IP.

One attendee highlighted the individuality of each deal with industry. Each industry partner has its own terms and conditions for contracts for IP and each deal is different.

4. Other needs

Institutions noted their need for support for infrastructure. For example, one attendee highlighted the need for infrastructure to position the university to compete for larger Department of Defense and Homeland Security contracts, which generate fees and income to support applied research. Another mentioned the need for instrumentation.

Another institutional representative mentioned the need for funding to support a bio-repository of tissue samples. These bio-repositories are usually collaborations among multiple institutions. The repository needs to be accredited and, once it is, it will attract industry commitments. Bio-repositories have the potential for global impact.

Another attendee highlighted the need for Virginia to pivot away from reliance on federal funding for research. Institutions must diversify their funding streams. Creating and sustaining long-term partnerships with the private sector is critical. A committee member commented that the private sector does want to help the state diversify the economy and a role exists for the state to act as an honest broker to bridge gaps between industry/business and academic institutions, looking for common opportunities.

Another attendee suggested that Virginia is at a disadvantage due to lack of funding sources to commit as matching funds for large federal awards, such as manufacturing institutes or NSF center grants. Investments of cash and in-kind resources are needed from the state, which would need to respond quickly when the solicitation for proposals is released.

Another attendee pointed out that if the Commonwealth and/or one or more of its public institutions are interested in competing for the electron collider at Jefferson Lab, a match of tens of millions of dollars will be required. The possibility exists that those matching funds could include bond funds.

Finally, one attendee suggested that VRIF funds are needed for proof-of-concept projects because Virginia does not provide enough support for this stage of research.

BREAK

Dr. Murray called for a break at 3:15 p.m. The meeting resumed at 3:25 p.m.

DISCUSSION OF DRAFT ORGANIZING PRINCIPLES AND THE PLACEMENT OF VRIF ALONG THE RESEARCH CONTINUUM

Dr. Murray led the review of this document.

Regarding the document's Item 3, Dr. Murray asked for comments about the proposal of a "limited submission" competition. No one objected to the proposed limit. However, attendees said that any time-bound grant cycle presents a challenge in terms of proposals for researcher recruitment and for the timing of the grant cycle in relation to the timing of their plans to offer start-up packages.

Secretary Brown raised the potential that, in the future, the limitations would extend to the focus area(s) for which proposals would be accepted. He foresees a need for Virginia to make a state-level determination regarding how VRIF can achieve success and achieve the biggest "bang for its buck." VRIF funding is unlikely to increase; therefore, at some point, VRIC will have to decide on a specific focus to make a mark, and proposals will have to align with that.

Regarding the document's Item 4, Dr. Murray suggested, given the previous discussion, that the ad hoc committee request that VRIC consider proposals for major economic development opportunities, such as federal centers, broad sector opportunities for green collar jobs, bio-repositories, etc.

Regarding the document's Item 12, Committee members suggested that endowment of funds (beyond the grant period awarded) could be considered in certain circumstances.

Dr. Murray concluded with a general comment that the ad hoc committee should be careful of excess rigidity when developing the guidelines.

DISCUSSION OF NEXT STEPS

Dr. Murray requested that the ad hoc committee on research meet again prior to March 14 in order to endorse the revisions to the organizing principles document so that staff can present it at the VRIC meeting on that date.

REPORT FROM STAFF

This agenda item, consisting of the legislative update, was moved to the beginning of the agenda.

ADJOURNMENT

Dr. Murray adjourned the meeting at 4:00 p.m.

William Murray
Chair, SCHEV Ad Hoc Committee on Research

Lynn Seuffert
Associate for Research Investment

State Council of Higher Education for Virginia Agenda Item

Item: Ad Hoc Committee on Research – Item 3 – Review of (Revised) Organizing Principles for Round 1 of Awards from the Virginia Research Investment Fund

Date of Meeting: March 8, 2017

Presenters: Alan Edwards
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Lynn Seuffert
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Most Recent Review/Action:

- No previous Council review/action
 Previous review/action
Date: January 10 and February 23, 2017
Action: None

Background Information/Summary of Major Elements:

On January 10, 2017, the Ad Hoc Committee on Research reviewed briefly a set of potential organizing principles to guide staff's work toward developing the guidelines for the award process for the Virginia Research Investment Fund.

On February 23, 2017, members discussed the draft organizing principles with public institutions' research officers. Members instructed staff to schedule another Committee meeting in advance of the March 14 meeting of the Virginia Research Investment Committee in order to reach consensus on guidance to staff regarding presentation of the organizing principles and related matters to the VRIC on behalf of the Committee.

Toward these ends, staff provides the enclosed set of revised organizing principles. Pending feedback from the VRIC, staff intends to seek approval of the organizing principles from the Ad Hoc Committee at its meeting on March 20.

Materials Provided:

- "Proposed Organizing Principles for VRIF Proposals (March 8 Version)" Page 10

Financial Impact: None

Timetable for Further Review/Action:

Pending input from the Virginia Research Investment Committee, staff intends to seek approval of the organizing principles at the Ad Hoc Committee meeting on March 20.

Resolution: None

Proposed Organizing Principles for VRIF Proposals (March 8 Version) (Researcher Recruitment/Retention and Applied Research Proposals)

The SCHEV ad hoc committee on research requests consultative guidance from VRIC on the items below regarding the mechanics of the Round 1 VRIF grant competition.

1. Only public institutions of higher education in Virginia will be eligible as lead applicants.
2. The grant competition will be “standard” (rather than pitch-style, prize, etc.).
3. The grant competition will be “limited submission”; i.e., each institution can submit two proposals as lead institution and participate as a partner in unlimited additional applications.
4. The guidelines will soften the statutory language, “eminent researcher,” to reflect institutions’ preference to recruit early-stage or rising super-star researchers.
5. Round 1 will be a single grant cycle with separate instructions and formats for applied R&D proposals and researcher recruitment/retention proposals. If VRIC determines under #8 below that they will accept proposals requesting the maximum amount appropriated by the General Assembly, SCHEV staff will determine whether additional format and/or score/weighting guidelines will be required to ensure VRIC receives actionable information about, and SCHEV staff and peer review panel(s) can conduct appropriate due diligence for, the large-scale projects.
6. In Round 1, all types of proposals will be scored and ranked together. VRIC will then determine whether and how many applied research and/or recruitment/retention proposals to fund.
7. No stand-alone competition will be offered for equipment; all equipment requests will be made in the context of an applied research proposal or a researcher recruitment or retention proposal.
8. Maximum award amounts and/or the anticipated dollar range of average awards will be recommended by VRIC (for both general funds and bond funds) for inclusion in the guidelines.
9. Any funds remaining after Round 1 award(s) are made will be rolled forward to Round 2.
10. As a lead applicant, an institution will be allowed to submit any combination of proposals, such as one applied R&D proposal and one recruitment/retention proposal, or two applied R&D proposals, or two recruitment/retention proposals. However, as lead applicant, an institution will be awarded a maximum of one grant in each category.
11. Grant periods may be proposed ranging from one year to five years.
12. A 1:1 match of the award amount will be required.
13. Absent unusual conditions, all funds (VRIF, bonds, and matching) must be expended by the end of the grant period. VRIC should consider approving the endowment of some funds in unusual situations on a case-by-case basis.

State Council of Higher Education for Virginia Agenda Item

Item: Ad Hoc Committee on Research – Item 4 – Advice to the Virginia Research Investment Committee

Date of Meeting: March 8, 2017

Presenters: Alan Edwards
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Lynn Seuffert
Associate for Research Investment
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Most Recent Review/Action:

- No previous Council review/action
 Previous review/action

Date:

Action:

Background Information/Summary of Major Elements:

The March 8 meeting of the Ad Hoc Committee on Research will be its fourth, all of which will have occurred since the most recent meeting of the Virginia Research Investment Committee (VRIC). The VRIC will meet on March 14; the Ad Hoc Committee will meet on March 20 and the full Council on March 21.

Staff seeks input from the Ad Hoc Committee regarding any advice members would like to be conveyed to the VRIC on March 14. This advice would be in addition to members' feedback regarding the organizing principles and would include matters such as: (i) the implications of the 2017 legislation that moves responsibility from Council to the VRIC for subsequent rounds of awards from the Virginia Research Investment Fund (VRIF); (ii) the strategic opportunities identified in the enclosed staff document; and (iii) a potential schedule for Round 1 awards (draft enclosed).

Regarding a potential schedule, staff advises that research-related grant competitions encompass eight to 12 months from the issuance of Calls for Proposals to award announcements, in order to ensure sufficient time for due diligence. Staff seeks input from members regarding their preferences for the pace of the VRIF process generally and about the enclosed potential schedule specifically, wherein the Call for Proposals would need to be issued no later than May for awards to be announced by year's end.

Materials Provided:

- Strategic Opportunities for Committee Consideration Page 13
- Draft Timeline: Major Milestones for Round 1 of VRIF Competition Page 16

Financial Impact: None

Timetable for Further Review/Action: None

Resolution: None

Strategic Opportunities for Committee Consideration

Background and Overview

In its preliminary work, the Ad Hoc Committee on Research has sought to better understand state-level mechanisms for promoting, funding and commercializing translational academic research. As the committee has begun to contemplate the guidelines and criteria for the Virginia Research Investment Fund (VRIF), members have expressed interest in identification of best practices, as well as limitations within and gaps between existing initiatives. The committee also seeks to provide advice to the Virginia Research Investment Committee (VRIC).

Toward these ends, staff offers three potential strategic opportunities for consideration by the committee:

- (i) a focusing on larger-scale, longer-term, latter-stage research and development (R&D);
- (ii) a targeting of state funding at current and future priority research areas; and
- (iii) a bridging of the gaps in research and commercialization infrastructure and expertise.

Staff concludes that these opportunities are the most relevant to the VRIF statute's focus on transformative research, commercialization, entrepreneurship and job creation.

Focus on Larger-Scale, Longer-Term, Latter-Stage R&D

As illustrated in staff documents and discussions at prior committee meetings, much of the existent state financial support for academic research is available for smaller-scale, shorter-term projects in academic R&D's earlier stages (i.e., the Basic Research stage and the Proof of Concept stage). Funding to support larger-scale, longer-term projects in the middle and latter stages (especially the Product Development stage and the Production stage) is less common.

The VRIF statute says that the Fund shall be used to “foster innovative and collaborative research, development, and commercialization efforts ... in projects and programs with a high potential for economic development and job creation” (Paragraph C of § 23.1-3131). The criteria for VRIF applications and award decisions must consider the proposed project's potential to achieve one or more of seven outcomes, which include: “culminate in the commercialization of research”; “culminate in the formation or spin-off of viable ... companies”; “promote applied research and development”; and “result in significant capital investment and job creation” (Paragraph A of § 23.1-3133).

Therefore, the VRIF's design and intended outcomes begin to address the need for public funding for academic research beyond the Proof of Concept stage. Staff depicts such in its “Continuum” document via placement of the VRIF in the middle and latter stages of the research and innovation continuum. Staff also reflects these requirements in its draft organizing-principles document for the VRIF award processes.

Target Public Funding at Current and Future State-Priority Research Areas

The purpose of the Commonwealth Research and Technology Strategic Roadmap, which is now developed by the Center for Innovative Technology (CIT) on behalf of the Innovation and Entrepreneurship Investment Authority (IEIA) but will move to SCHEV as a result of HB2245 / SB1371, is to “identify research areas worthy of economic development and institutional focus” (Paragraph A of § 2.2-2221.2). The outcomes the Roadmap is intended to achieve include to “identify the Commonwealth's key industry sectors in which investments in technology should be made” by the state (Paragraph A of § 2.2-2221.2). As such, the Roadmap is enacted to guide, if not dictate, the Commonwealth's investment in academic research.

Per statute, the Roadmap's key sectors/fields may include, but are not limited to, "energy, conservation, environment, microelectronics, robotics and unmanned vehicle systems, advanced shipbuilding, or lifespan biology and medicine" (Paragraph A of § 2.2-2221.2).

However, also by statutory requirement, much of the funding provided for academic research via state entities such as the Commonwealth Health Research Board (CHRB) and the Virginia Bioscience Health Research Corporation (VBHRC) is concentrated in medical/biomedical and bio/life science fields. Other state grantors may also award funds in these fields.

The VRIF statute assigns the VRIC with responsibility to ensure that awards from the Fund support priority research areas. The statute reads, "[a]reas of focus for awards shall be those areas identified in the ... Roadmap, and shall include but not be limited to the biosciences, personalized medicine, cybersecurity, data analytics, and other areas designated in the general appropriation act" (Paragraph C of § 23.1-3131). While the research areas identified in the VRIF statute also are encompassed in the Roadmap's current 11 research sectors/fields, the Roadmap was developed in FY2015, and thus, it may not reflect adequately Virginia's most-promising current and future research areas. Current efforts to update the Roadmap will not be complete in time to inform the first round of the VRIF award competition.

At the committee's meeting on February 23, representatives of the public institutions generally agreed that the research areas identified in the statute – biosciences, cybersecurity, and data analytics – are aligned with areas of strength at many institutions and are sufficiently broad to provide opportunities for all public institutions to participate in some fashion. Among the areas of research not mentioned in the statute, those for which at least one institution would like to submit proposals include agriculture; aquaculture; renewable energy; coastal resilience; population health; and education and social sciences.

The Ad Hoc Committee has an opportunity to address these research-area priorities in its advice to the VRIC. In so doing, both will need to decide whether to proceed with:

- (a) all or a subset of the four research areas identified in the VRIF statutes; or
- (b) both or either of the research disciplines identified by the Virginia Research Alliance; or
- (c) the 11 research sectors/fields identified in the most-recent R&T Strategic Roadmap; or
- (d) one or more areas identified by the public institutions at the February 23 meeting of the Ad Hoc Committee and/or via their responses to the staff survey; or
- (e) one or more areas to be identified through additional analyses of the Commonwealth's academic-research strengths, weaknesses and opportunities.

Bridge Gaps in Research and Commercialization Infrastructure and Expertise

Collaboration is a key expectation, requirement and outcome in the enacting VRIF statutes. For example:

- Of VRIF funds' five codified purposes, the final is to "encourage cooperation and *collaboration* among higher education research institutions, and with the private sector, in areas and with activities that foster economic development and job creation" (Paragraph C of § 23.1-3131).
- Of VRIF proposals' seven codified award criteria, the final is that the project must "promote *collaboration* among the public institutions of higher education" (Paragraph A of § 23.1-3133).
- The sole codified VRIF-recipient restriction is that awards must be made to "public institutions of higher education ... or *collaborations* between public institutions ... and private entities" (Paragraph B of § 23.1-3133).

Through these emphases on collaboration, the VRIF statutes acknowledge that no single public or private entity possesses a monopoly on good research ideas, processes, personnel, equipment or facilities. Further, this enacting legislation recognizes that large-scale economic development and job creation require broad participation both within individual sectors and between different sectors.

The VRIF statutes' expectations and requirements of collaboration also are at least tacit acknowledgements that opportunities exist within higher education and between public higher education and the private sector, particularly in terms of opportunities to bridge gaps in expertise and/or infrastructure. As committee members and institutional representatives noted at the February 23 meeting, addressing these opportunities will foster the translation of research outcomes into more economically impactful products, companies and jobs.

Such interaction can bring valuable insights about commercialization to researchers and universities, and it can expose researchers, tech-transfer officers and universities that are already quite active in commercialization to different methods and strategies used by others with different strengths and foci. Such collaborations represent significant opportunities and potential benefits to the Commonwealth's academic-research enterprise and its economy.

The VRIF statutes also incite greater interaction between higher education and the private sector, which is the origin of most entrepreneurship, company formation and job creation. Examples of such interaction in recent years include:

- Some universities have moved in more corporate directions in such ways as hiring Entrepreneurs (or Executives) in Residence to further bridge the public/private, non-profit/for-profit and academic/corporate divides.
- Vendors have developed online tools to catalog and showcase existing expertise, equipment/technology and facilities within and across universities and states. These tools facilitate collaboration within academe and between higher education and the private sector by allowing users to search where, how and by whom specific types of research are being conducted.
- Some states (e.g., Maryland and Florida) have created new entities to coordinate and shepherd commercialization of academic research.

Any effort to ascertain where and to what extent gaps exist in our academic research and commercialization expertise and/or infrastructure would require considerable financial, human and time resources, but it could be beneficial as a long-term endeavor.

In the short term, the committee has an opportunity to:

- (a) urge the public institutions of higher education to increase their communication and collaboration with one another, while also better documenting and communicating how they work together; and
- (b) advise the VRIC and direct SCHEV staff to construct VRIF application guidelines that encourage proposals that involve greater interaction between higher education and the private sector, such as recruitment of Entrepreneurs in Residence or the establishment and maintenance of a state-wide online tool/portal.

In the longer term, the committee has an opportunity to gauge the interest of higher education, state government and the private sector regarding pursuit of more-formal strategies, such as a state-level research-commercialization entity.

Major Milestones for Round 1 (R1) of VRIF Competition

March 14: VRIC meeting

- Discuss organizing principles for R1 and develop feedback to ad hoc committee
- Review draft timeline for R1

March 20-21: Ad Hoc Committee meeting (March 20) and Council meeting (March 21)

- **Action to approve organizing principles for R1**
- Review outline of the draft Call for Proposals for R1

April 12: Ad Hoc Committee meeting (in conjunction with special Council meeting)

- Discuss draft Call for Proposals for R1, to include the initial guidelines, procedures, and criteria for (i) the application for grants from the Fund; (ii) the review, certification of scientific merits, and scoring or prioritization of applications for grants from the Fund; and (iii) the evaluation and award by the Committee of grants and loans from the Fund

On or Before April 19: VRIC Meeting

- Discuss draft Call for Proposals for R1 and develop feedback to ad hoc committee
- Review draft terms and conditions for R1 awards
- **Action to delegate to Chair approval of grantee requests for FIOA protection**
- **Action to delegate to Chair authority to approve technical corrections and clarifications to the Call for Proposals throughout the application process**

May 15-16: Ad Hoc Committee meeting (May 15) and Council meeting (May 16)

- **Action to approve the Call for Proposals for R1**
- **Action to delegate to SCHEV Director authority to approve technical corrections and clarifications to the Call for Proposals throughout the application process**

On or Before May 19: SCHEV staff

- Submit R1 Call for Proposals to House Appropriations and Senate Finance, per statute

May 22: SCHEV staff

- **Issue Call for Proposals for Round 1**

On or Before May 26: VRIC meeting

- **Action to approve terms and conditions for R1 awards**

August 4: SCHEV staff

- **Close receipt of proposals**

On or Before October 6: SCHEV staff

- **Close receipt of final scores and reviewer comments**

On or Before November 1: SCHEV staff

- Prepare and submit reviewer recommendations to VRIC

On or Before November 17: VRIC meeting

- **Evaluation and award decisions**

Announcement of awards follows; statute affords Governor discretion to announce.