Minutes
COMMISSION ON RESEARCH
March 13, 2019
130 Burruss Conference Room
3:30pm-5:00pm
COR Documents available to COR members in Team Drive: COR FY2018-2019

Attended:

Members: Virginia Pannabecker, Alan Michaels, Elizabeth Grant, Lijuan Yuan, R. Bruce Vogelaar, Liwu Li (for John Phillips), Nicholas Brown, Kevin McGuire, Dipankar Chakravarti, Rajaram Bhagavathula, Uri Kahanovitch, Randy Heflin (for Sally Morton),

OVPRI: Theresa Mayer, Laurel Miner, Diane Zielinski

Presenters:
Commonwealth Cyber Initiative: Charles Clancy, Executive Director, Hume Center for National Security and Technology and Interim Executive Director, Commonwealth Cyber Initiative (CCI); and Gretchen Matthews, Professor, Department of Mathematics, and CCI Blacksburg Node Lead
Proposal for new Center for Infrastructure Delivery Excellence: Michael J. Garvin, Associate Professor, Department of Civil and Environmental Engineering

Guests: Peggy Layne

I.   Approval of the Agenda
     A. Motion by E. Grant. Seconded by K. McGuire. Approved by voted.

II. Approval of February Minutes
     A. Approved via email

III. Announcements
     A. Governance 101 resource via University Council - Resolution process and help documentation: https://governance.vt.edu/
     B. Additional Policy Development resources: https://policies.vt.edu/policy-development.html
     C. Call for COR Vice Chair nominees

IV. [3:40] Unfinished Business
     A. Report of Ongoing Activities

1. Due to room scheduling / access issue, tabled all monthly reports until April
   B. OVPRI Update - T. Mayer or L. Miner
      1. Presentation at Faculty senate - Sponsored Programs
         a) Introduction of Trudy Riley, new Associate Vice President for Research and Innovation, Sponsored Programs
         b) Summary of survey results on Sponsored program issues and things that are going well
            (1) Survey is preliminary assessment
            (2) Looking for and reaching out to departments and others around campus for feedback on OSP processes, etc.
      2. VT News announcement - start of research office faculty fellows
         a) Robin Queen is first faculty fellow - health data privacy and security, partnership with Carilion
         b) Next 3 fellows will focus on
            (1) Space, capital equipment purchases, maintenance, staffing, etc. - shared facilities
         c) Working group around research computing - multiple stakeholders involved in this working group
            (1) Do you have interest/faculty stakeholders who might be interested in this group, let OVPRI know!
            (2) This is addressing an issue that came up through COR and faculty senate
         d) Fellows and Working Group on research computing are addressing university-wide shared laboratories ('service centers')
            (1) These groups will work in OVPRI and provide connections out to and between departments and other areas around campus
         e) New building coming online - RV1311 - in CRC - justified on basis of growth and certain restricted portfolio of research (ITAR export and other restrictions related to integration with programs on campus). Major group is the Hume center. There was an open solicitation to colleges to ask about programs aligned with the building. Laurel is coordinating. The new building will have some flexible hotelling space for short term needs - testing this out as a model. There will be ongoing evaluation of the programs in the building to ensure optimal usage and inclusive practices.

V. [3:55] New Business
   A. [3:55] First reading of revision to Policy 13005, Centers and Institutes: Establishment, Governance and Programmatic Oversight -- A. Michaels

1. Three documents available in the COR Team Drive - Clean version of Proposed 13005 revision, Tracked changes version of proposed revision of 13005, Summary of Changes made in the proposed revision
2. Goal of revisions: bring the policy in line with current practices; not a substantive update or change to how centers/institutes are chartered; rather a simplification of the text, including the description of the periodic review process
3. Based on feedback from current center/institute directors, removed any changes adding DAs or labs as this would require more discussion to define these terms and understand their relationship to the policy
4. Will consider substantive changes in Fall next year
5. Changes - Summary
    a) Clarifications throughout document:
        (1) Updated/proper titles for university leadership and their roles
        (2) Consolidation of titles to improve readability (e.g., reduction from 69 instances of "Vice President" in the document)
    b) Section 1.0 Purpose
        (1) The simplified concept for organizational entities (multiple instantiations of Centers, ranging from Department-level and Institute-level Centers to University-level Centers, and University Institutes) is introduced. That change, which allows consolidation of subsequent common language, improves overall clarity of the document and reduces ~3 pages of text from the Policy.
        (2) Duplicative cross-reference to Policy 3020 (Centers and University Institutes Financial and Administrative Policies and Procedures) is removed from Section 1 (Purpose) and consolidated to a single reference in Section 2 (Policy).
    c) Section 2.0 Policy
        (1) Clarification of titles and consolidation of reference to Policy 3020
    d) Section 3.0 Procedures
        (1) Description of process to establish a new centers; largely consolidation of language via a new diagram that traces a center from establishment/letter of intent through periodic reviews, and optionally to termination
    e) Section 3.1 Establishment of New Centers and University Institutes
        (1) Consolidation of establishment procedures with clarifications of distinctions between different level entities.

  (2) Clearer roles & responsibilities and decision flows during the establishment and review process; clarified review and recommendation role of new proposals by the appropriate commission (Research, Instruction, Outreach)

f) ·Section 3.2 Governance

  (1) Incorporated a graphic that summarizes roles and responsibilities during ongoing *center* activities, including record retention responsibilities and periodic reviews.

g) Section 3.3 Financial and Administrative Procedures and Responsibilities

  (1) No substantive changes

h) Section 3.4 Administrative Oversight and Periodic Review & 3.5 Programmatic Oversight and Evaluation Aspects of Centers and University Institutes

  (1) Consolidated repetitive discussion of review for Centers and their leadership; simplified description of review process, leaving scope and details of the review to Stakeholders Board and optional Advisory Board. Details of the annual review process and 5-year re-evaluations are summarized in graphic added to Section 3.2.

i) Section 3.6 Termination or Realignment

  (1) No substantive changes

j) Section 4.0 Definitions

  (1) Formalized the ongoing practice of centers being permitted to adopt an organizational name that reflects the preferences of the faculty or norms of the academic discipline.

  (2) Added a summary table to clarify anticipated membership of centers operating at different organizational levels within the university. Note that this membership is not prescriptive, but rather "typical."

k) Section 5.0 References

  (1) Removed – unused

l) Section 6.0 Approvals and Changes

  (1) Incorporated subset of this document as a change summary for Revision 4

6. Questions? / Comments

a) Clarification - you mention some things were approved 6 years ago - are those already in this current policy or is that what you're proposing now? ⇒ Those are in the current policy

b) Great job of streamlining and like addition of diagrams and table

c) Definitions - In "Section 4.0 Definitions," I think it would be valuable to retain (rather than the proposed deletion) the phrase

"contained within a single college, or two or more colleges" from the definition of "College Center." Without that phrasing, I think many will interpret the definition of a college center as only allowing faculty within that college.

  d) In Section 3.4, I think it's constructive to remove most of the language that is deleted in the proposed revision. I do believe that retaining the nine typical questions for the review to address (which were at the end of that section) would be useful as it does help frame the nature of the review without being overly prescriptive. Some guidance as to the typical membership of the review committees might also be helpful, although I agree that the prior language was overly constraining.

  e) One other key question that arose while reading the revision is that, while allowing the use of names other than "center" is going to be quite constructive, there will need to be further guidance on what terms are allowable and whether some are specifically precluded (e.g. institute). As Dr. Mayer pointed out, that discussion can occur outside of this particular revision of the policy. But it will probably need to be addressed in the fairly near future as new centers with other possible designations are proposed.

  f) University center term - not something we've had in the past; only institutes were university level, all centers had to be dept or college - is this actually a new policy / practice?

  g) Like that centers don't have to use term 'center' but this does raise question (not necessarily policy but something for OVPRI to consider) - what are the terms that can be used? Can orgs that don't go through this policy be called 'centers'?

  h) Some of these questions may be better to move to the future focus on revising this at an institutional strategy / substantive level ; including engaging multiple commissions in revising this document in future; perhaps including for those on loss of content

B. [4:10] Commonwealth Cyber Initiative (CCI) - Charles Clancy, Executive Director, Hume Center for National Security and Technology and Interim Executive Director, Commonwealth Cyber Initiative.

  1. See mission, slides
  2. Many cybertechnology / startups need partnerships, collaborators especially at the start - looking to provide infrastructure to support these startups in a collaborative way through nodes throughout the region
  3. DC and Maryland, thousands of cybersecurity jobs and huge gap in workforce - trying to address this need as well

4. Hub in Northern VA; VT is the anchor of this; 10 million per year for hub; nodes in southeast, southwest, elsewhere; funding for these as well; RFP for these was just approved
5. 5M for capital funding, 1M already drawn down; could be more funding available if needed via the Virginia Research Investment
6. VRIC - Virginia Research Investment Committee oversees CCI and provides funding and feedback and assessment; see slides on other groups governing this process
7. Leadership within the hub; hiring Executive Director - administrative professor line with option for tenure in academic dept
   a) See slides for roles of hub and node leaders
   b) Network office for programming, outreach, extension, metrics, assessments, etc.
   c) Positions will be a combination of new and existing positions
   d) All these together will comprise a leadership council
8. Facilities
   a) Based at VT research center in arlington to start; about 13,000 sq feet
   b) Hub residency requirement
9. Hub Budget
   a) 3.1M for leadership and program activity and support staff
   b) 1.5M for facilities and operations
      (1) Sharing resources with Hume Center - some of this funding will augment resources of Hume for joint positions
   c) 5.4M for research programs
      (1) Investing in faculty to build programs - those bringing in certain amount of funding per year who have the capacity to create these larger programs
   d) Looking for a 3:1 return on investments
10. HubBudget detail is in slides
11. Node business model will be different
12. Goal: build critical mass of research, tenure-track, tenured faculty with team of 50-70 junior researchers, 100-150 doctoral students with goal of extramural funding
13. A lot of questions; hiring happening, existing faculty; figuring out if faculty line will come out of this or not; working on bylaws of the CCI hub that would nail this down w/faculty position agreement
14. See slide with 3 faculty who will start
15. Searches underway in ECE - 2 people; may work with other areas
16. See slides on Node commitments, certification, structure
17. If you're interested, go to this link: https://vt.edu/cci-blueprint/index.html. Get more details and you can provide more feedback / ask questions
18. More of this will come into shape as it's designed

19. Questions:
    a) How will this budget model work? Espcially for pre-tenure faculty? (Mainly looking for post tenure or research faculty for this)
20. Q: There is 1 hub, 4 or 5 nodes? Yes; This is through VT but it is a state initiative? Yes, it's a complex initiative with multiple partners
21. Q: what about 10 years from now - what will these faculty be doing? Planned that faculty will act as consultants, supporting development of new companies each year.

C. [4:45] New Center Proposal - discuss and vote on recommendation for proposed new research center, "Center for Infrastructure Delivery Excellence." - Michael J. Garvin, Associate Professor, Department of Civil and Environmental Engineering
   1. Discussion regarding access to data provided by center, especially possible open access to public
   2. Following discussion, a motion was brought to vote on recommending the proposed new research center, "Center for Infrastructure Delivery Excellence" contingent on a further discussion of the financial model
      a) A. Michaels motioned , R. Heflin seconded
         (1) Approved contingent on a discussion of the financial model

D. Announcement - Theresa forwarded an article about foreign influence and research processes, compliance to Ginny who will send this out to COR
   1. Need advocacy from the community - please share with your areas

VI. [4:55] Adjournment
   A. R. Heflin motioned; R. Bhagavathula seconded; Approved by vote
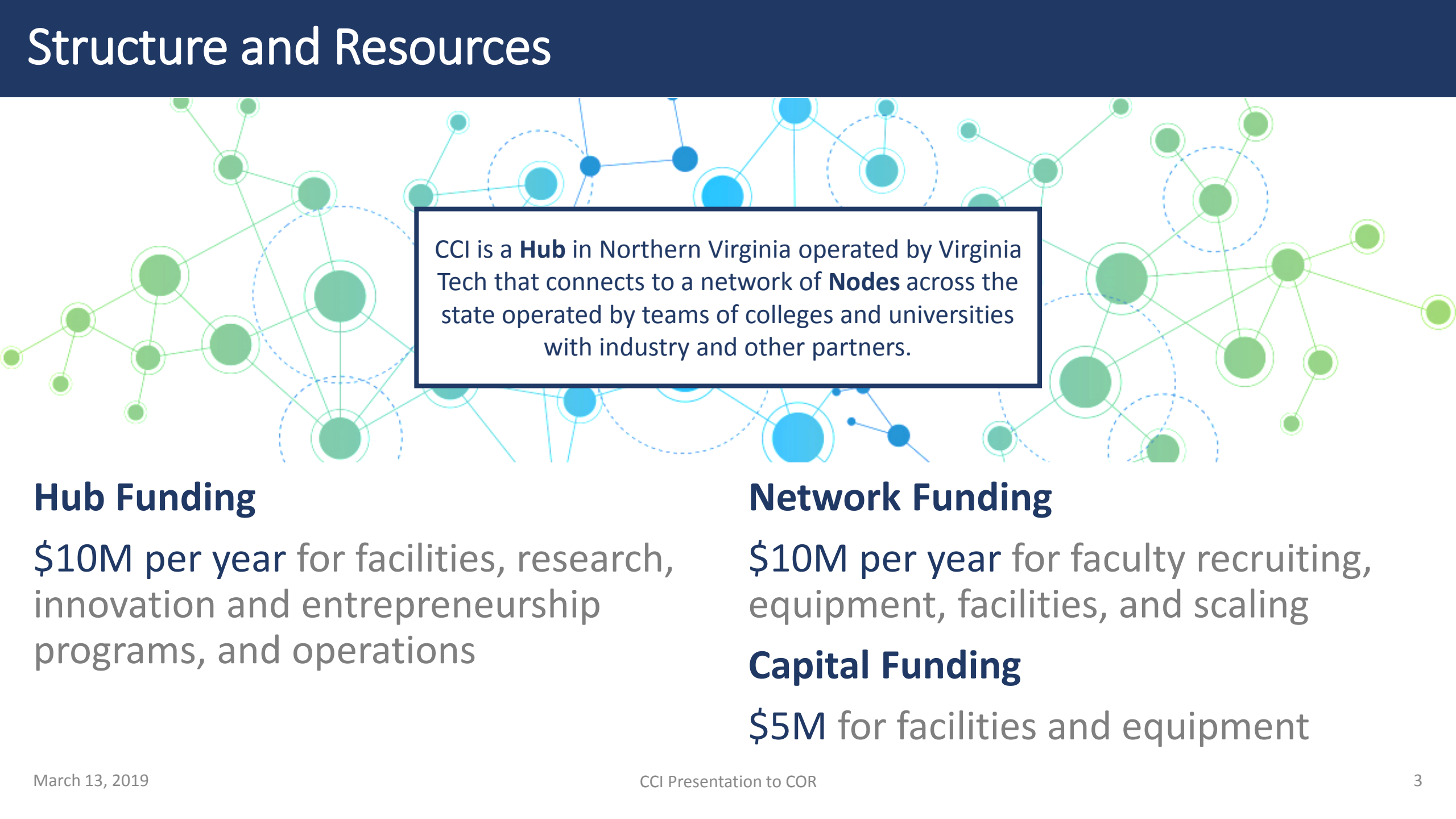
Commonwealth Cyber Initiative Update

Presentation to Commission on Research

March 13, 2019

Mission

The Commonwealth Cyber Initiative shall be established to serve as an engine for research, innovation, and commercialization of cybersecurity technologies, and address the Commonwealth's need for growth of advanced and professional degrees within the cyber workforce.

Structure and Resources

CCI is a **Hub** in Northern Virginia operated by Virginia Tech that connects to a network of **Nodes** across the state operated by teams of colleges and universities with industry and other partners.

Hub Funding

$10M per year for facilities, research, innovation and entrepreneurship programs, and operations

Network Funding

$10M per year for faculty recruiting, equipment, facilities, and scaling

Capital Funding

$5M for facilities and equipment

Governance

VRIC

Source of funding for CCI programs, ensures accountability, and provides critical assessment and feedback for CCI

External Review Panel

Technical experts providing independent review of progress against goals annually, reporting finding to VRIC

Technical Advisory Board

Leaders from industry and government providing advice and guidance on strategic direction of VRIC

Leadership Council

Hub/node leadership members; develops policy and budgets, advices on programs, reviews metrics, creates roadmaps
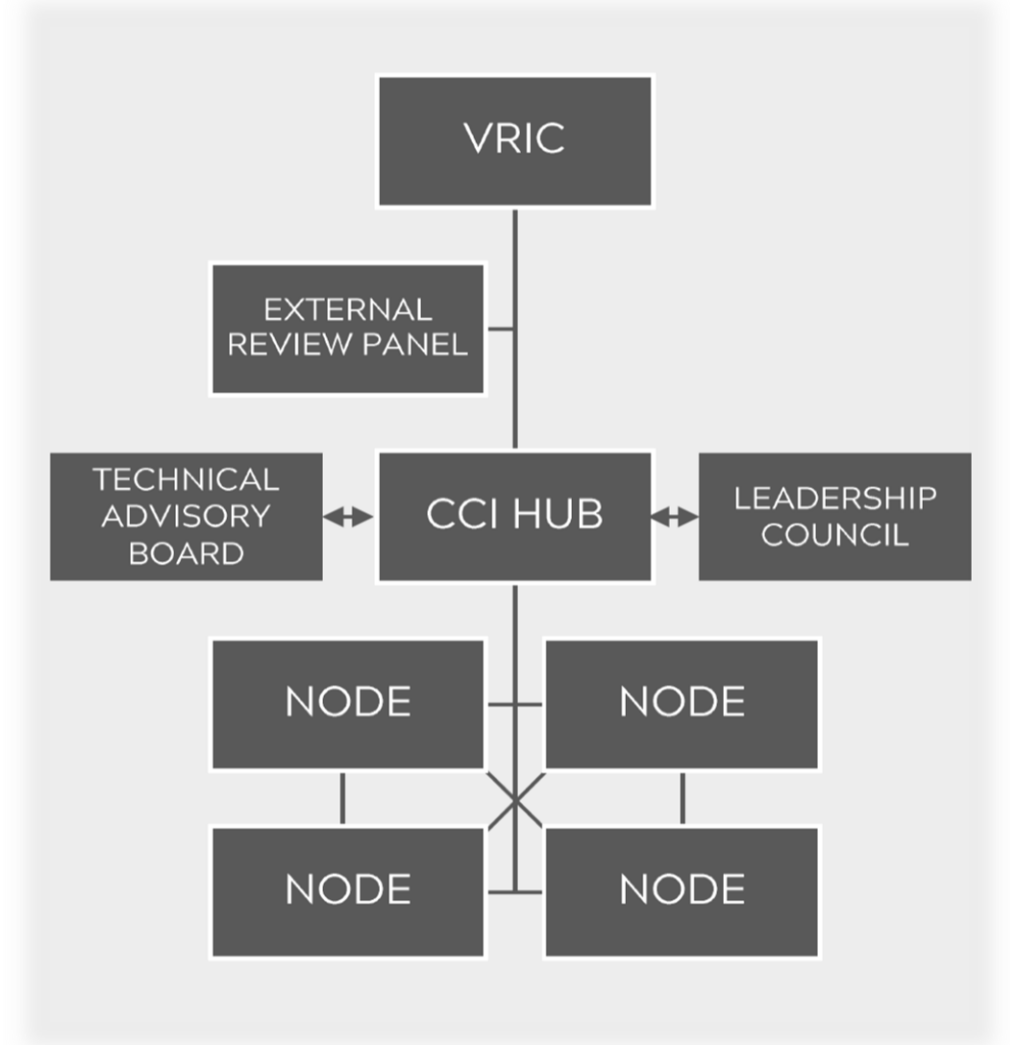
Leadership

Executive Director

World-class cybersecurity scholar with significant leadership acumen and track record of success; tenured administrative professor

Isaacson Miller retained to manage the search; committee involves members from across the state
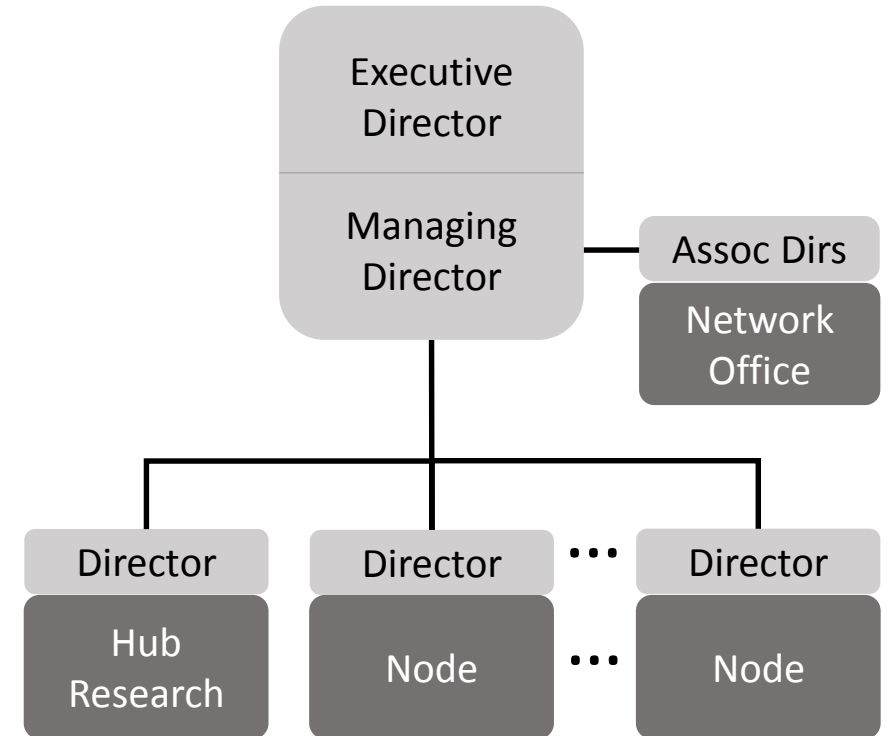
Managing Director

Operationally-focused manager who oversees network programs

Hub Research Director

Faculty director who provides a leadership for programmatic research investments at the hub

Node Directors

Lead activities of each of the nodes

Hub Facilities

Initial Location

Virginia Tech Research Center – Arlington
900 N. Glebe Rd, Arlington, VA 22203

Hub Layout

8,000 SF of space on the 3rd floor will be dedicated to hub programs, including 1200 SF co-working area, 600 SF lab, 17 offices/workspaces.

5,000 SF of space on other floors will also support hub programs.

Hub Residency

To receive hub funding, research programs must be physically resident within the hub building.

Long-Term Location

Program needs will ultimately dictate the size and scope of facilities requirements. Projections indicate the need for new or expanded facilities in FY22 (25,000 SF) growing further in FY25 (50,000 SF)
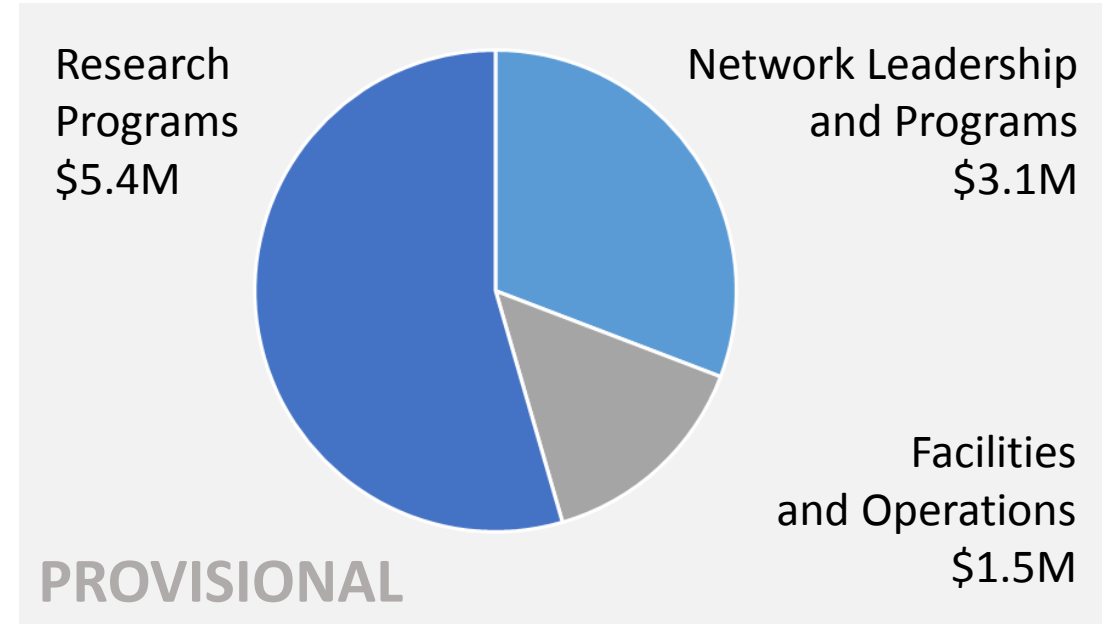
Hub Budget (1)

Approach

Divide budget into three segments:

- CCI leadership and network-wide program activity

- Facilities and operations that support all activities across the hub

- Investments in research programs

Budgeting

Leadership/network and facilities/operations operate under a "hard money" model with budgets adjusted annually through the Leadership Council.

Research program investments made seeking 3:1 steady-state ROI under the leadership of "primary faculty" responsible for building programs that support the hub mission.

Research Programs $5.4M

Network Leadership and Programs $3.1M

Facilities and Operations $1.5M

PROVISIONAL

Hub Budget (2)

Network Office	
Personnel – 11.0 FTEs	**$1,836,516**
Leadership – Exec Director, Managing Director *Associate Directors – Edu/Wkfc, Innov/TC, Outreach* *Program Support – PgMgr, PgAnalyst, EA*	
Marketing, Events, Recruiting	**$539,000**
Internships	**$660,000**
Operating	**$44,000**
Total	**$3,079,516**

Hub Operations	
Personnel – 6.0 FTEs	**$742,274**
Assistant Directors – Personnel, Comms *Program Support – Graphics/Web, Web Dev* *Fiscal – Fiscal Tech, PreAward*	
Facilities	**$663,936**
27 Offices *10 Cubes* *3 Labs (1200 SF)* *Flex Zone (1200 SF)*	
Operating	**$66,000**
Total	**$1,472,210**

Research Program Investment Approach

Invest in primary faculty to build teams of researchers and students, leading to external funding, publications, and commercialization.

Approach seeks to recruit entrepreneurial faculty interested in building large, impactful programs, and giving them the resources to succeed.
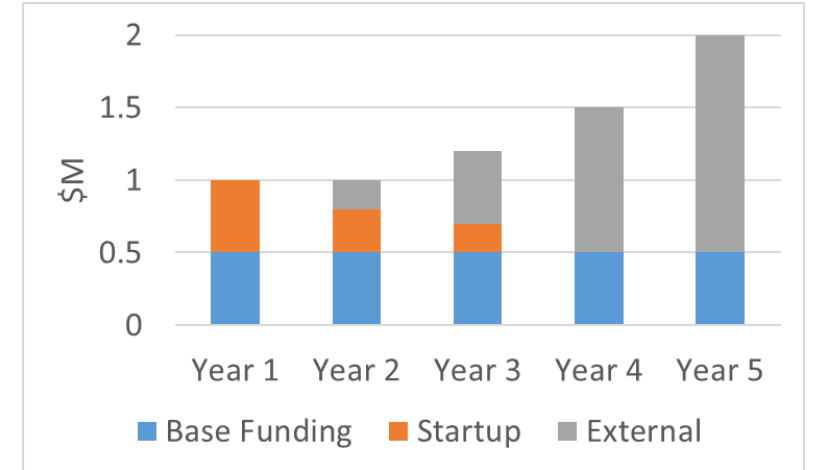
Performance metrics assessed annually to determine any needed adjustments (up or down) to base funding.

FY20 Research Budget – $5,448,273

Six primary faculty planned for FY20:

- $1.8M base funding (recurring)
- $3.6M startup funds (one-time)

Example lab scaling to $2M/year

Aggregate Impact (2026+)

15-20 primary faculty

50-70 junior faculty/researchers
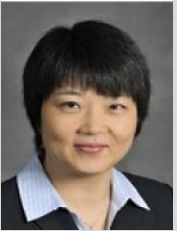
100-150 PhD students
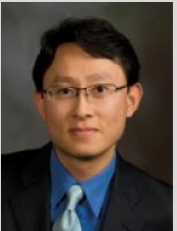
$20M/year in external funding

Hub Primary Faculty

Laura Freeman
Research Associate Professor
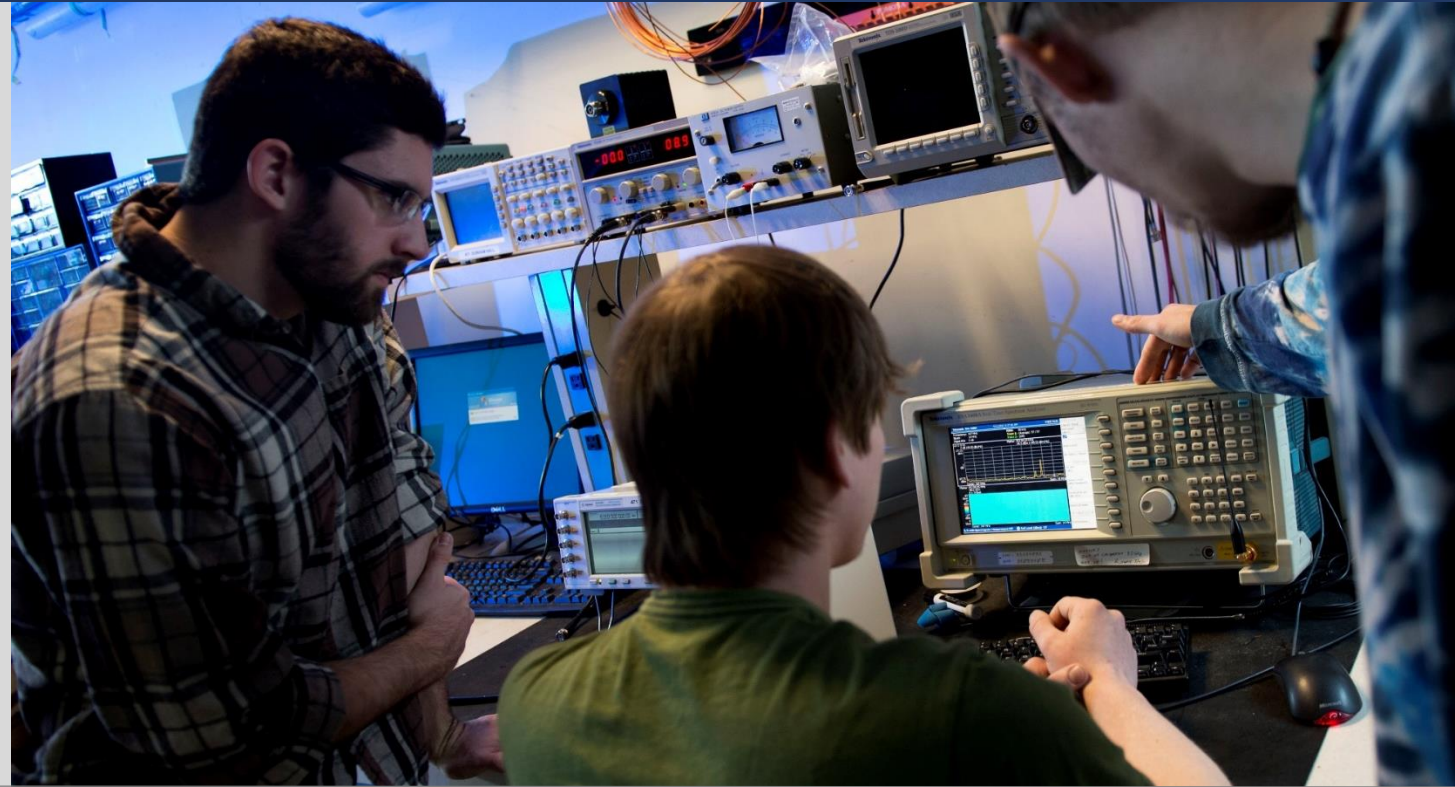Statistics & Hume Center
Area: cyber test science

Wenjing Lou
W. C. English Professor
Computer Science
Area: wireless/cloud security

Jerry Park
Professor
Electrical and Computer Engineering
Area: wireless/IoT security

Approach: Invest in a team of *primary faculty* who will build research programs that lead to innovation and impact

- Three existing faculty identified as primary faculty, with the expectation of scaling up their current programs
- Searches underway for two tenured positions that would start in August 2019 to expand the team
- At full capacity, anticipate a total of 12-18 primary faculty each managing teams of junior faculty, research staff, postdocs, and graduate students

Nodes

March 12, 2019

Commonwealth Cyber Initiative Instructions for Application for Certification of Regional Nodes

VRIC Meeting Date	Certification Application Package Due
June 11, 2019	Tuesday, April 30, 2019, 11:59 p.m.
August 13, 2019	Tuesday, July 2, 2019, 11:59 p.m.
October 8 2019	Tuesday, August 27, 2019, 11:59 p.m.
December 10, 2019	Friday, October 25, 2019, 11:59 p.m.

STATE COUNCIL OF HIGHER EDUCATION FOR VIRGINIA

VIRGINIA RESEARCH INVESTMENT COMMITTEE

Node Structure

Nodes involve two or more institutions of higher learning, with network of regional partners. Up to four nodes will be initially certified.

Node Certification

Node certification is based on commitment to and alignment with CCI research priorities, cyber workforce development, and building regional ecosystems.

Expect nodes to all be certified by the end of 2019.

Node Commitments

Certified nodes commit to enrollment growth and institutional investment to match funds received via the Virginia Research Investment Fund (VRIF).

Network Programs — *Initial Progress*

Network Programs	
Network Portal	Domain *cyberinitiative.org* registered; planned staffing for web development
Entrepreneurship Programs	Planning Assoc Dir position focused in innovation/commercialization; developing partnership with Mach37 for program collaboration
Market Research	Part of network office staffing plan
Curriculum Alignment and Normalization	Planning Assoc Dir position focused in education/workforce
Holistic Industry Partnership Development	Planning Assoc Dir position focused in outreach
Workshops and Showcases	Planning Assoc Dir position focused in outreach; Spring'20 event envisioned
Faculty Recruitment and Support	
Research Active Faculty Support	Senior tenured computer engineering faculty search underway for hub; research faculty searches starting in April
Faculty Recruitment	New VRIC/SCHEV guidance on node funding
Faculty Support	New VRIC/SCHEV guidance on node funding
Internships	
Co-Op 2.0 Intern Stipends	Planning Assoc Dir position focused in education; Summer'20 cohort envisioned

Research Programs — *Initial Progress*

5G/IoT Security

Leveraging FY19 capital funds to build 4G/5G core network to connect to future testbeds at Nodes

Engaging with emerging multi-$B national initiative on 5G to make CCI the platform for security research

AI/ML and Security

Leveraging FY19 capital funds to acquire DGX-2 GPU platform for use by CCI network

Significant increase in defense research interest in AI/ML assurance and AI/ML for cyber that can have major commercial applications

Leveraging existing federal partnerships for early program development

MITRE University Innovation Exchange (UIX) – GMU, JMU, ODU, UVA, VSU, VT, W&M
DOD Systems Engineering Research Center (SERC) – ODU, UVA, VT
Senior Military College (SMC) Cyber Institutes – VMI, VT

Summary of Proposed Changes to Policy 13005, "Centers and Institutes: Establishment, Governance and Programmatic Oversight," 3/7/2019

This documents captures a section-by-section change log and rationale for the changes proposed to Virginia Tech's Policy 13005. These changes are primarily intended to serve as a clarification of the current policy, correcting titles and removing duplicative language; where possible, repetitive language common to both Centers and Institutes has been consolidated under a common entity descriptor "*Center*." Descriptive policy diagrams have been incorporated to describe the process for establishing and performing periodic reviews of Centers and Institutes. A future revision will be considered from this proposed update with more sustentative changes.

- Clarifications throughout document:
    - Updated/proper titles for university leadership and their roles
    - Consolidation of titles to improve readability (e.g., reduction from 69 instances of "Vice President" in the document)
- Section 1.0 Purpose
    - The simplified concept for organizational entities (multiple instantiations of Centers, ranging from Department-level and Institute-level Centers to University-level Centers, and University Institutes) is introduced. That change, which allows consolidation of subsequent common language, improves overall clarity of the document and reduces ~3 pages of text from the Policy.
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    - Description of process to establish a new centers; largely consolidation of language via a new diagram that traces a center from establishment/letter of intent through periodic reviews, and optionally to termination
- Section 3.1 Establishment of New Centers and University Institutes
    - Consolidation of establishment procedures with clarifications of distinctions between different level entities.
    - Clearer roles & responsibilities and decision flows during the establishment and review process; clarified review and recommendation role of new proposals by the appropriate commission (Research, Instruction, Outreach)
- Section 3.2 Governance

- o Incorporated a graphic that summarizes roles and responsibilities during ongoing *center* activities, including record retention responsibilities and periodic reviews.
- Section 3.3 Financial and Administrative Procedures and Responsibilities
  - o No substantive changes
- Section 3.4 Administrative Oversight and Periodic Review & 3.5 Programmatic Oversight and Evaluation Aspects of Centers and University Institutes
  - o Consolidated repetitive discussion of review for Centers and their leadership; simplified description of review process, leaving scope and details of the review to Stakeholders Board and optional Advisory Board. Details of the annual review process and 5-year re-evaluations are summarized in graphic added to Section 3.2.
- Section 3.6 Termination or Realignment
  - o No substantive changes
- Section 4.0 Definitions
  - o Formalized the ongoing practice of centers being permitted to adopt an organizational name that reflects the preferences of the faculty or norms of the academic discipline.
  - o Added a summary table to clarify anticipated membership of centers operating at different organizational levels within the university. Note that this membership is not prescriptive, but rather "typical."
- Section 5.0 References
  - o Removed – unused
- Section 6.0 Approvals and Changes
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