



Commonwealth Cyber Initiative Update

Presentation to VRIC

March 12, 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.

Governance

VRIC

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

External Review Panel

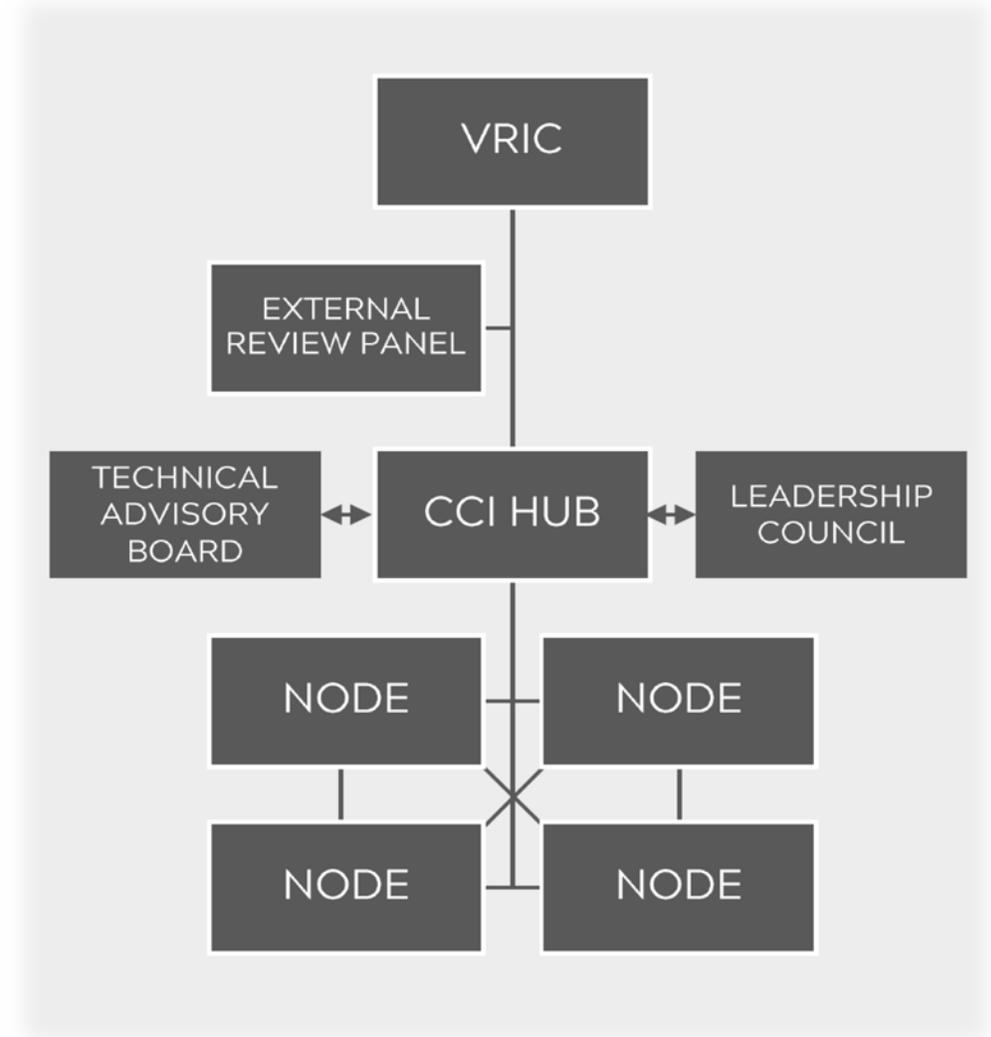
Technical experts providing independent review of progress against goals annually, reporting findings to VRIC

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, advises 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

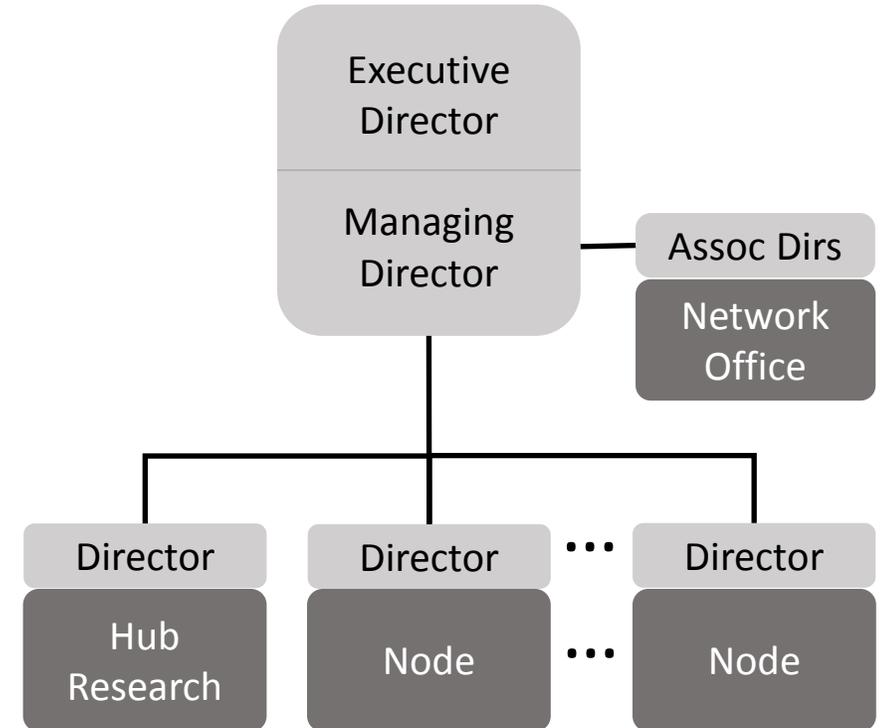
Operationally-focused manager who oversees network programs

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

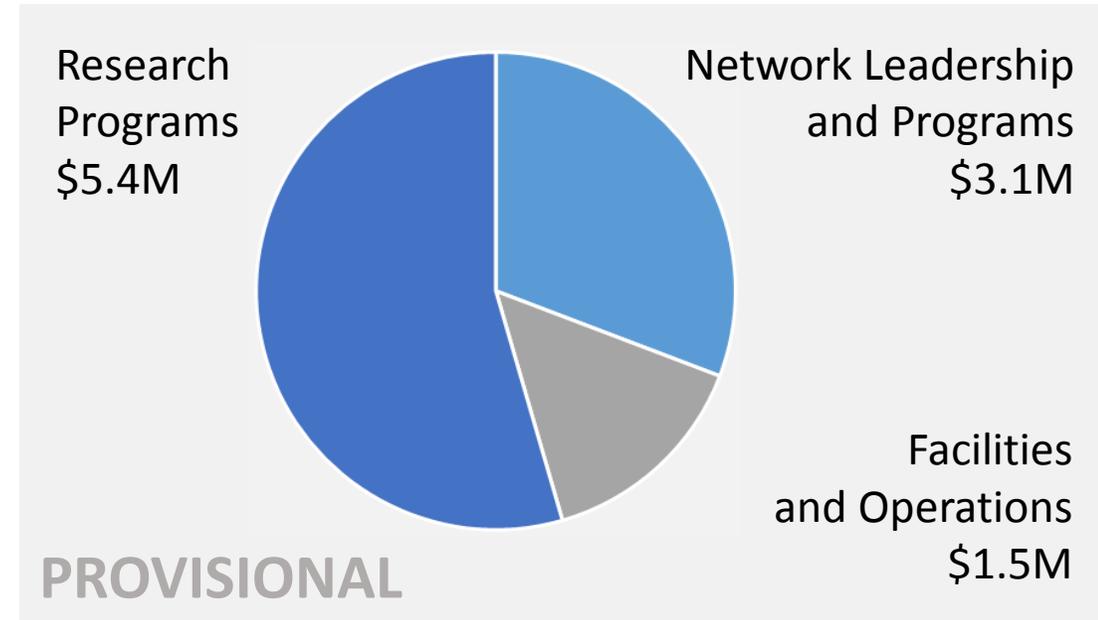
Divide budget into three segments:

- 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.



Hub Budget (2)

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

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

Hub Budget (3)

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.

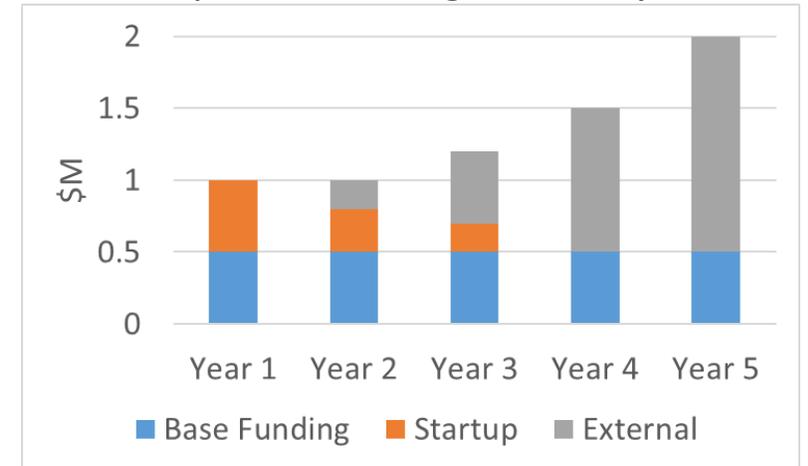
Performance metrics assessed annually to determine any needed adjustments (up or down) to base funding.

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

Network Programs – *Initial Progress*

Network Programs	
Network Portal	Domain <i>cyberinitiative.org</i> 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	Anticipate VRIC/SCHEV guidance on node funding
Faculty Support	Anticipate 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