

# Commonwealth Cyber Initiative Blueprint Development

Theresa Mayer and Laurel Miner | Virginia Tech  
Presented to VRIC on August 14, 2018

<https://www.networkworld.com/article/3235124/internet-of-things/internet-of-things-definitions-a-handly-guide-to-essential-iot-terms.html>

## The Commonwealth is:

- a national leader in the \$75B cybersecurity industry
- well positioned to capitalize on explosive growth in cyber-physical system (IoT) security that diversifies portfolio across multiple industry sectors
- at risk of losing competitive advantage as new opportunities emerge without investments in growth of a vibrant technology entrepreneurial ecosystem

# High-Paying Cybersecurity Jobs



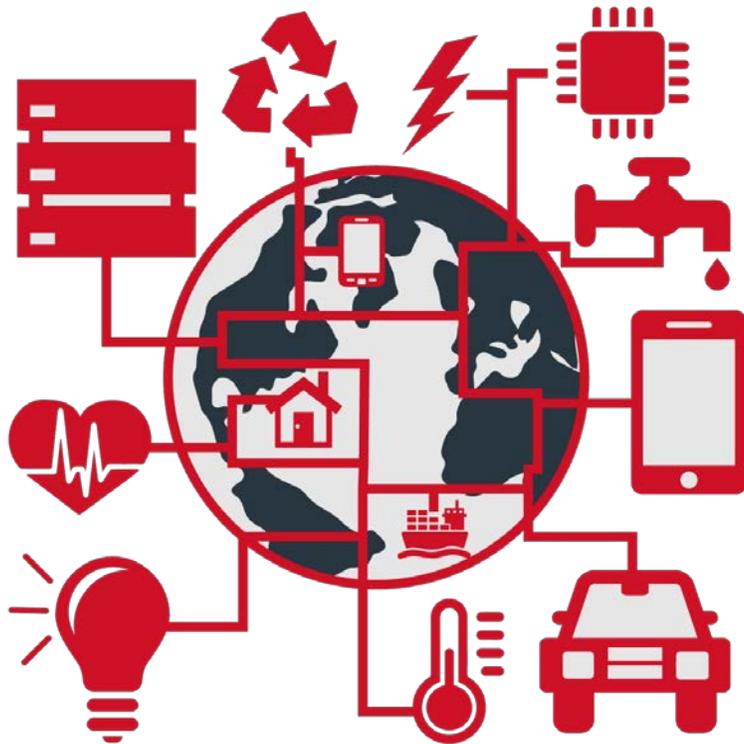
>17,000 vacant cyber jobs in Virginia

Growing needs for higher-level **Security+X** skills:

- Data science
- Wireless
- Advanced Manufacturing
- Autonomous vehicles
- Energy Systems
- Health and Medical Devices
- Financial / Insurance / etc.

Virginia universities play a critical role in filling the talent pipeline

# Cyber-Physical System Security is Pervasive Across Multiple Industry Sectors



- More than 30B connected devices by 2020
- Spending on IoT security to reach \$120B by 2020 with overall cyber spending to be \$500B-\$1T from 2017-2021

Source: BI Intelligence, Gartner

Non-traditional wireless systems represent fastest growing segment of connected devices

# The Bill: Commonwealth Cyber Initiative

B.1.

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.

2.

The initiative shall consist of a primary Hub, located in Northern Virginia, and a network of Spokes across the Commonwealth with collaborating public institutions of higher education in Virginia and industry partners to build an ecosystem of cyber-related research, education, and engagement that positions the Commonwealth as a world leader in cybersecurity.

3.

In collaboration with public institutions in the Commonwealth, Virginia Tech shall serve as the anchoring institution and coordinate the activities of the Hub.

# Initial \$25M Appropriation

- \$5 million in first year for renovations, space enhancements, and equipment;
- \$10 million in second year for leasing of space, establishment of the Hub by the anchoring institution and for the establishment of research faculty, entrepreneurship programs, student internships and educational programming;
- \$10 million in the second year to VRIF to scale the initiative and provide resources for faculty recruiting at both the Hub and Spoke sites.

7. No later than December 1, 2018, Virginia Tech shall provide to the Virginia Research Investment Committee a blueprint for the development and operation of the Commonwealth Cyber Initiative

# Hub and Spoke Sites Enable Commonwealth-Wide Integration



Sustained research investment from strategic industry and government partners



New approach to partnerships that fully integrates research, innovation, education, and talent development



Innovation ecosystem that connects and co-locates researchers, students, partners, entrepreneurs, and investors



Education and training programs that adapt to the rapidly changing needs of both students and employers

# Key Measures of Success for CCI



- Reduce the cybersecurity workforce gap
- Increase competitive extramural funding to build capacity by leveraging collaborations across universities and companies in the Commonwealth
- Enhance industry partnerships and technology transfer to promote economic development
- Win strategic “national center-level” grants and contracts that demonstrate technical leadership
- Increase the number of product-oriented startup companies that are launched and funded

# Principle Components of the Blueprint

## Outline

- Introduction
  - Opportunity, short-and long-term vision, and enabling legislation
- Evaluation of landscape and partnership opportunities
  - Research, innovation, and commercialization
  - Advanced and professional degrees for cyber workforce
- Design and governance of Commonwealth Cyber Initiative (CCI)
  - Hub design: Cyber-physical system security, machine learning lab, interface with spokes
  - Spoke site certification process
- Funding allocation and future growth
  - Hub development and operation
  - Matching funds for faculty recruitment at Hub and Spoke sites
  - Facilities and infrastructure at Hub and Spoke sites
  - Long-term development of the CCI

# Blueprint Advisory Council

Blueprint Advisory Council members were nominated by their institutions and represent a diverse coalition of stakeholders in the CCI.

## Membership:

- One representative from each public university;
- One representative from community college system;
- Two representatives from VRIC and one from SCHEV;
- Two representatives from industry groups;
- Two representatives from entrepreneurial community.

<https://vt.edu/cci-blueprint.html>

# Executive Committee

Kickoff: August 28, 2018

**Theresa Mayer**, VPRI, Virginia Tech (Chair)\*

**Charles Clancy**, Director, Hume Center, Virginia Tech

**Deb Crawford**, VPR, GMU\*

**Brian K. Payne**, Vice Provost, ODU

**Melur Ramasubramanian**: VPR, UVA\*

**Sharon Simmons**: Head, Computer Science, JMU

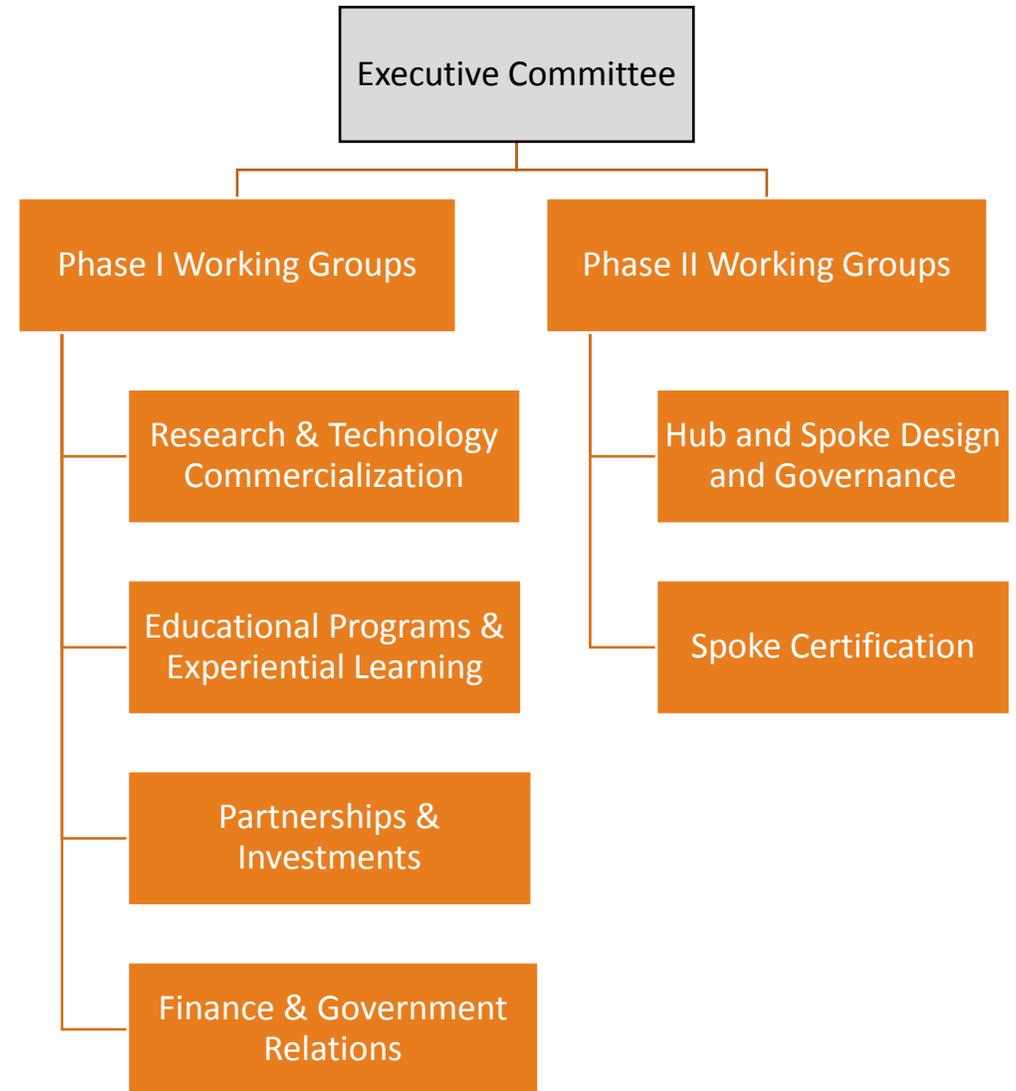
**James W. Dyke, Jr**: VRIC, GoVirginia, Senior Advisor,  
State Government Relations, McGuireWoods\*

**Bobbie Kilberg**: President and CEO, NVTC

**Tracy Gregorio**: President, G2 Ops, Inc

**Sanju Bansal**: CEO, Hunch Analytics

\*active engagement in VRIC for cross-program continuity



# Phase 1 Working Group Co-Chairs

Kickoff Coordination Completed

## Research & Tech Commercialization

- **Charles Clancy**, Hume Center, Virginia Tech\*
- **Deb Crawford**, VPR, George Mason\*

## Educational Programs & Experiential Learning

- **Brian Payne**, Vice Provost, ODU\*
- **Cyril Clarke**, Provost, Virginia Tech

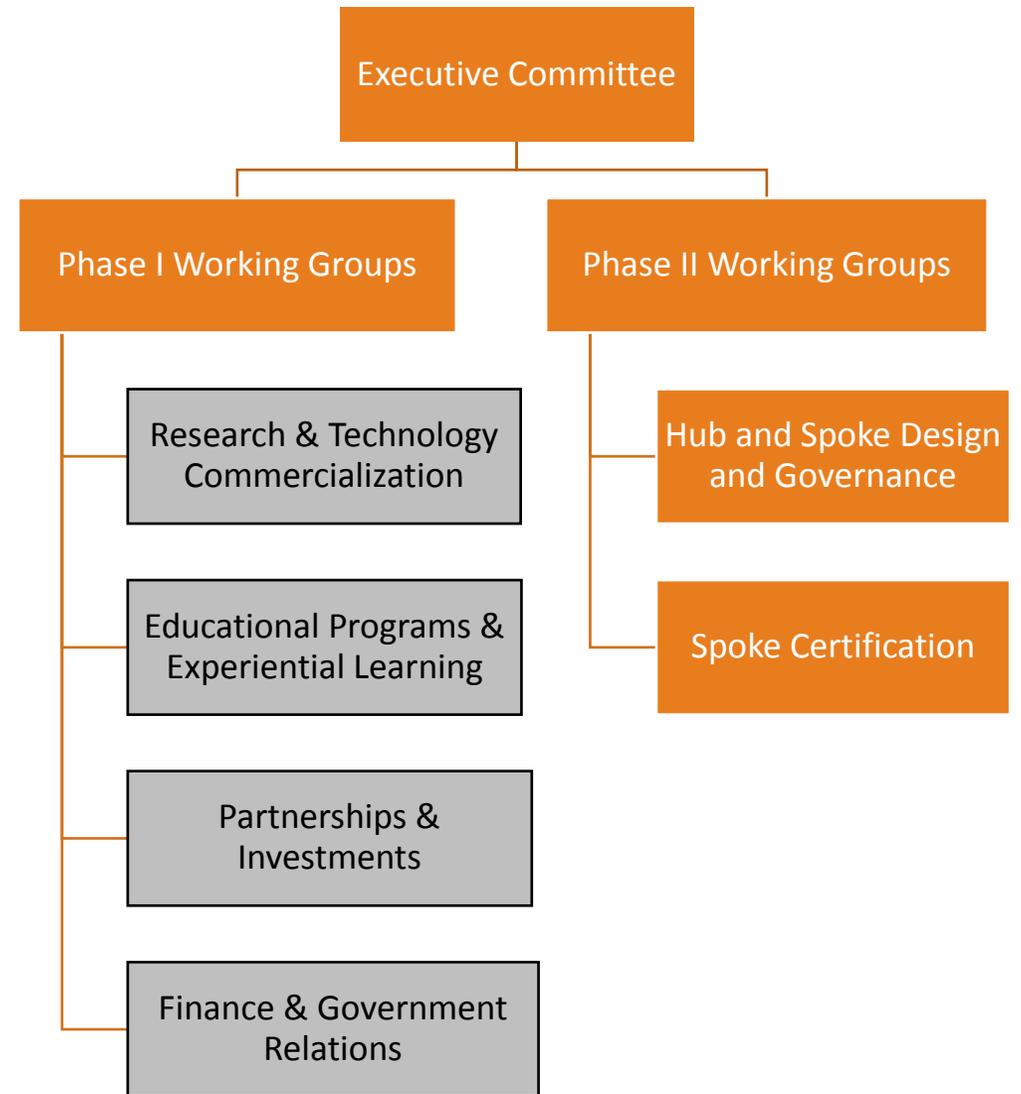
## Partnerships & Investments

- **Tracy Gregorio**, President, G2 Ops, Inc\*
- **Brandy Salmon**, AVP Tech Innovation, Virginia Tech

## Finance & Government Relations

- **Bobbie Kilberg**, President & CEO, NVTC\*
- **Dwight Shelton**, VP Finance and CFO, Virginia Tech

\* executive committee member



# Timeline and Key Milestones



\* Industry and Government Roundtables not shown in timeline