FIVE YEARS OF CCI

Commonwealth Cyber Initiative

Commonwealth Cyber Initiative

FIVE YEARS OF CCI

State of CCI

Five Years of Impact

Lessons Learned & Path Forward
Industry Participants Matching Grant Pay is Not Easy; Other Approaches Better
Create an Industry Participant Pipeline!
Create a Baseline Course for Student Participants
Practitioner Publication Goals
Pursue Corporate & Federal Grants
Teaming with Others; CCI Fellows Program Anyone?
Commonwealth Cyber Initiative
SECURE SYSTEMS
VCU
College of Engineering

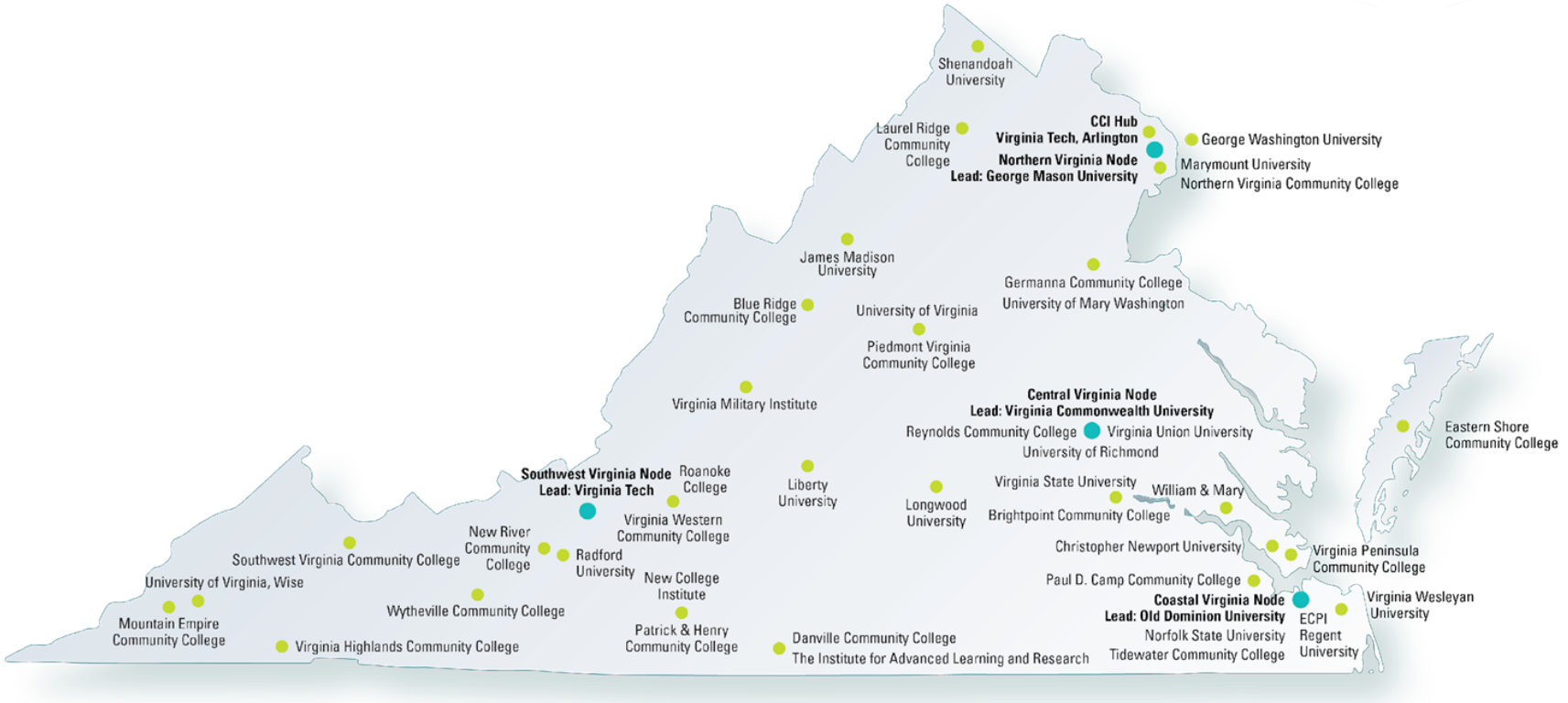
Societal Impact: Virginia Cybersecurity Ecosystem

Our Vision:

To establish Virginia as a global center of excellence in cybersecurity research and serve as a catalyst for the commonwealth's economic diversification and long-term leadership in this sector.

Our Mission:

To serve as an engine for **research**, **workforce development**, and **innovation** in cybersecurity.



CCI VIRGINIA NETWORK

46 Higher Education Institutions
300+ faculty members

FIVE YEARS OF CCI

Gretchen Matthews
Southwest Node

Erdem Topsakal
Central Node

Liza Wilson-Durant
NoVA Node

Daniel Takabi
Coastal Node

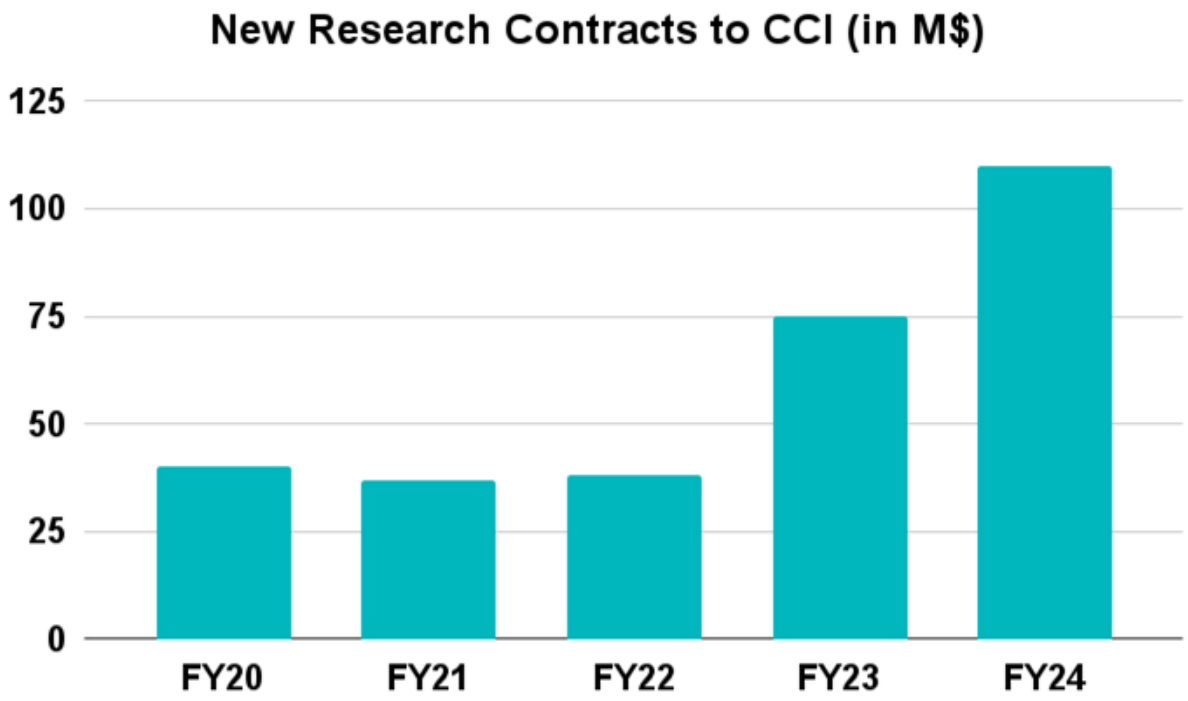
Research Funding Impact

7.5 to 1

Total Extramural Funding in M$

$300

Source: RTI Economic Report 2023
and CCI Annual Reports 2020-2024



Source: CCI Annual Reports 2020-2024

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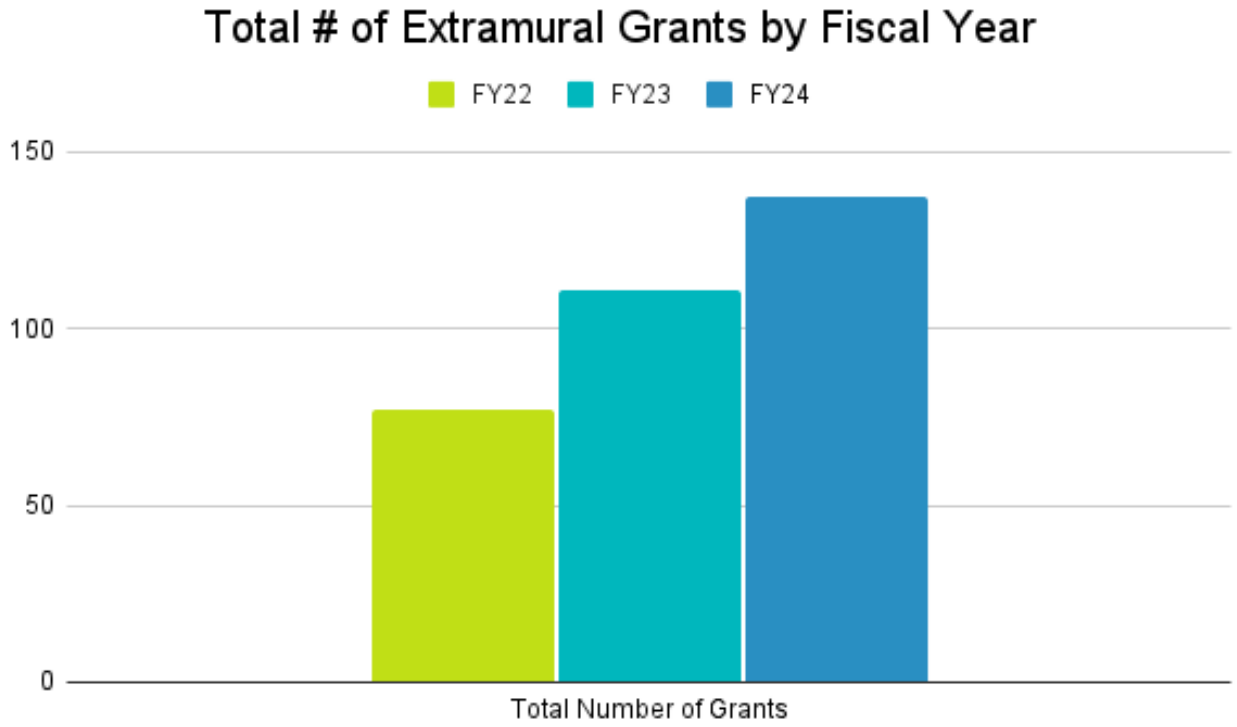
Research Funding Impact

Total # of Extramural Grants From 2022-2024

375+



Source: CCI Annual Reports 2022-2024

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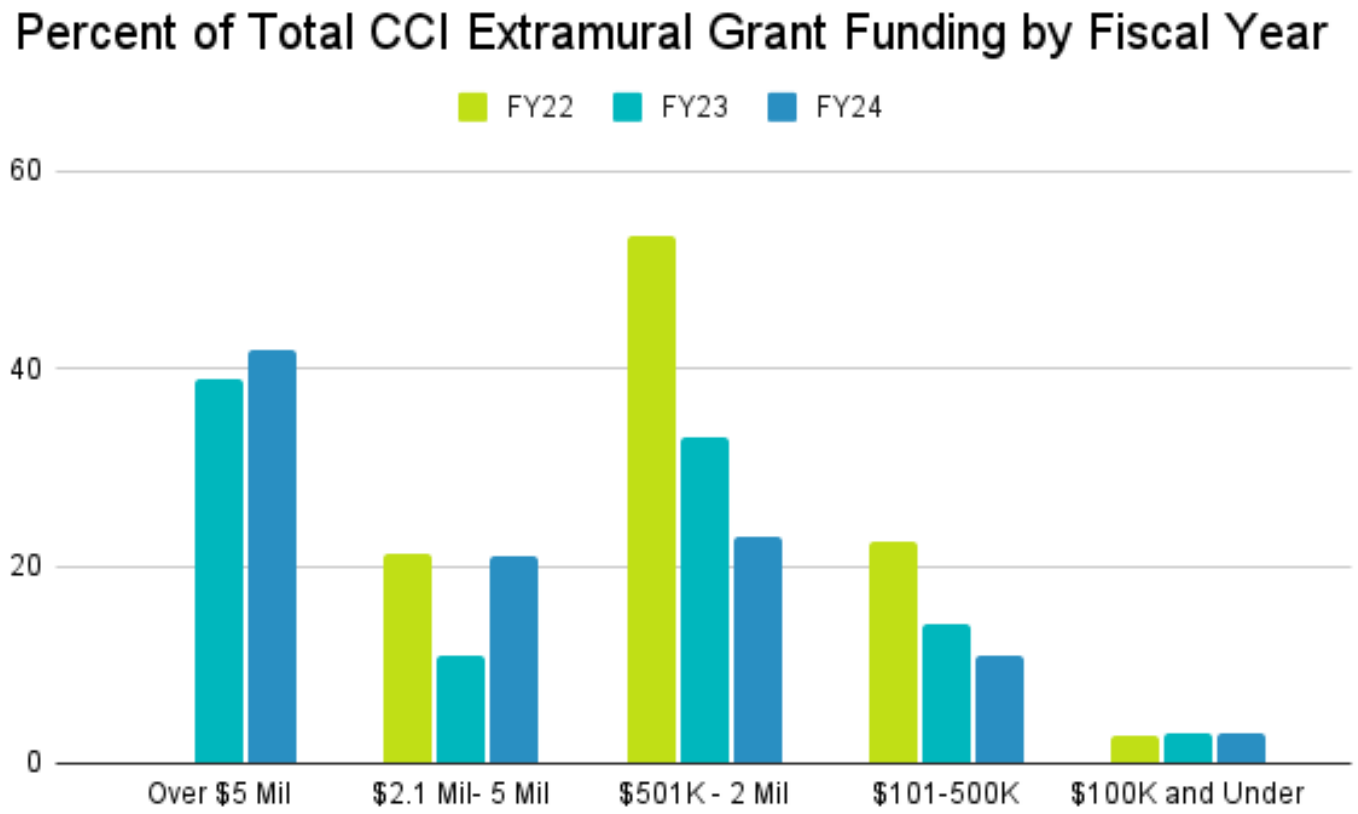
Research Funding Impact



Source: CCI Annual Reports 2022-2024

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Societal Impact: Startup Ecosystem

Societal Impact: Startup Ecosystem

VirtualPLC

NetSense

Solutions TBD

AIOTI AUTOMATION SOLUTION

WiSights Lab

CYBER MIRAGE

Symple Solutions, Inc.

MagnaSHIELD

REALISTIC ANATOMICAL MODEL (RAM) PHANTOMS

Spinouts Created

10

GM

VCU

VIRGINIA MILITARY INSTITUTE

OLD DOMINION UNIVERSITY

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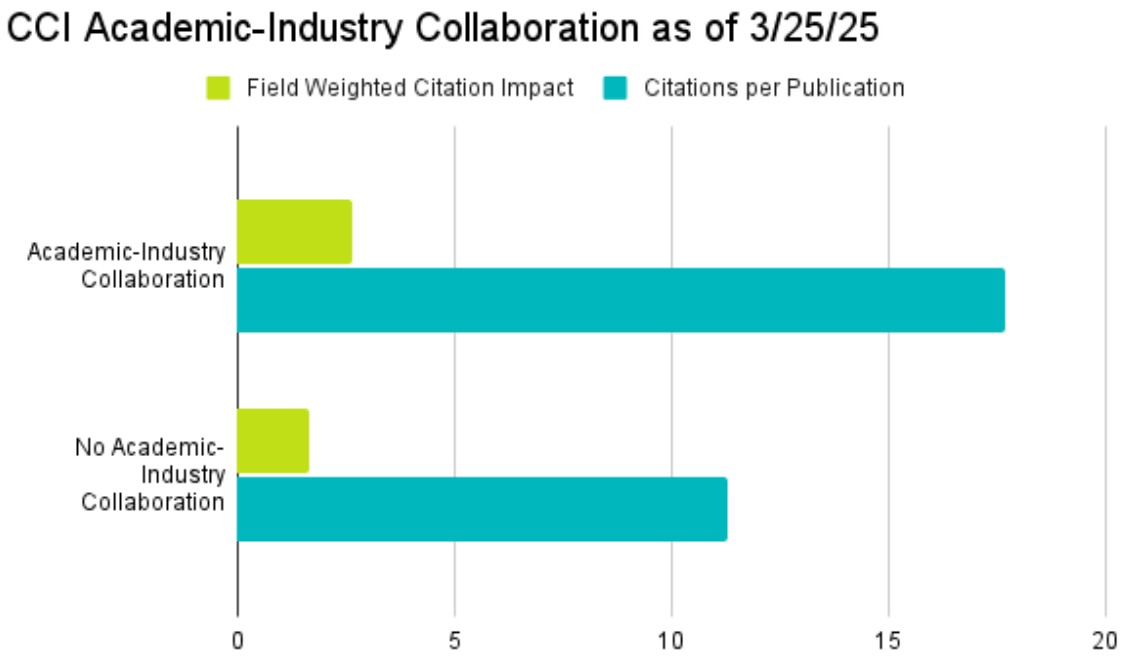
Societal Impact: Engagement with Industry



Academic-Industry Citations per Publication

17.7

Source: SciVal 3/20/25

Academic-Industry Impact: Field-Weighted Citation

2.65

Link Lab Industry-Graduate Student Demo Reception

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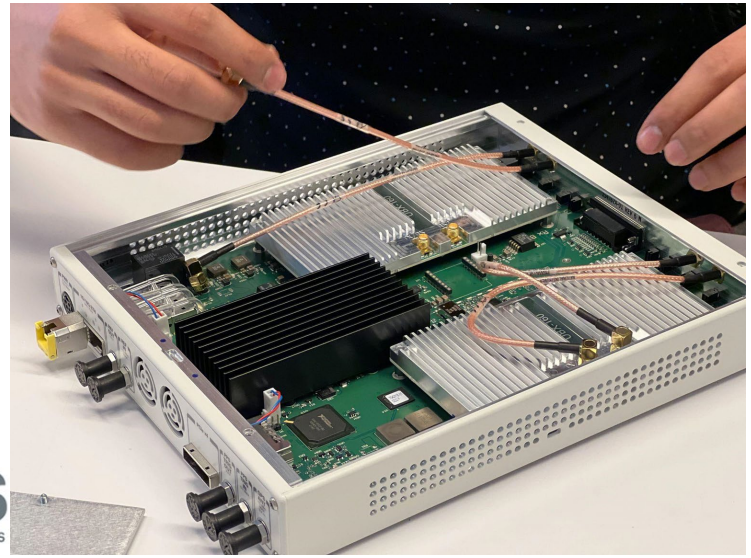
Societal Impact: Engagement with Industry

Commonwealth Cyber Initiative XG TESTBED

ACCoRD
Acceleration of Compatibility and Commercialization for Open RAN Deployments

SRS
SOFTWARE RADIO SYSTEMS

WISPER



CyberSMART

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Societal Impact: Students

Supporting Tomorrow's Cybersecurity Experts

Source: RTI Economic Impact Report

573 Interns + experiential learning participants

317 Research scientists + graduate assistants

301 Undergraduates supported

https://www.vcybers.org/home

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Societal Impact: Students

COMMONWEALTH CYBER INITIATIVE

Clearance Preparedness Program

Attended 2023-24

298

Badges Issued 2023-24

60

PROJECT-BASED LEARNING PROGRAM

CACI EVER VIGILANT

PBS

Microsoft

GUIDEPOINT SECURITY

Student Participants

27

CNU

NOVA Northern Virginia Community College

GM

VIRGINIA TECH

OLD DOMINION UNIVERSITY

UNIVERSITY of VIRGINIA

JMU JAMES MADISON UNIVERSITY

Laurel Ridge COMMUNITY COLLEGE

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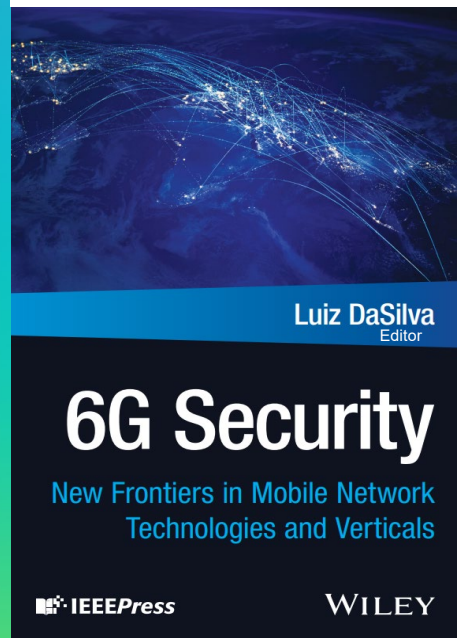
Scholarly Impact

OPEN TESTING AND INTEGRATION CENTRE



Average # of Citations per Publication

11.8

Average Field-Weighted Citation Impact

1.74

Source: SciVal 3/20/25

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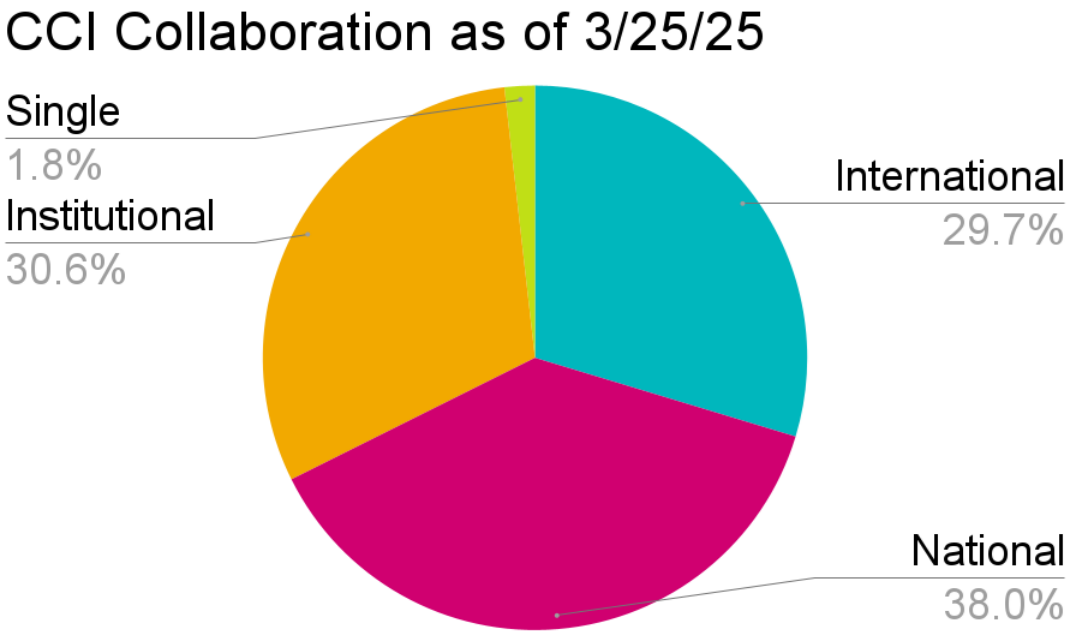
Societal Impact: International Cybersecurity Ecosystem



INCS-CoE

Number of Publications in Top 10% Most Cited Worldwide

2,120

Source: SciVal 3/20/25

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Societal Impact: International Cybersecurity Ecosystem

US/European Cybersecurity Workshop

May 22-23, 2024

Leuven, Belgium

60 Participants

35 Institutions

10 Countries

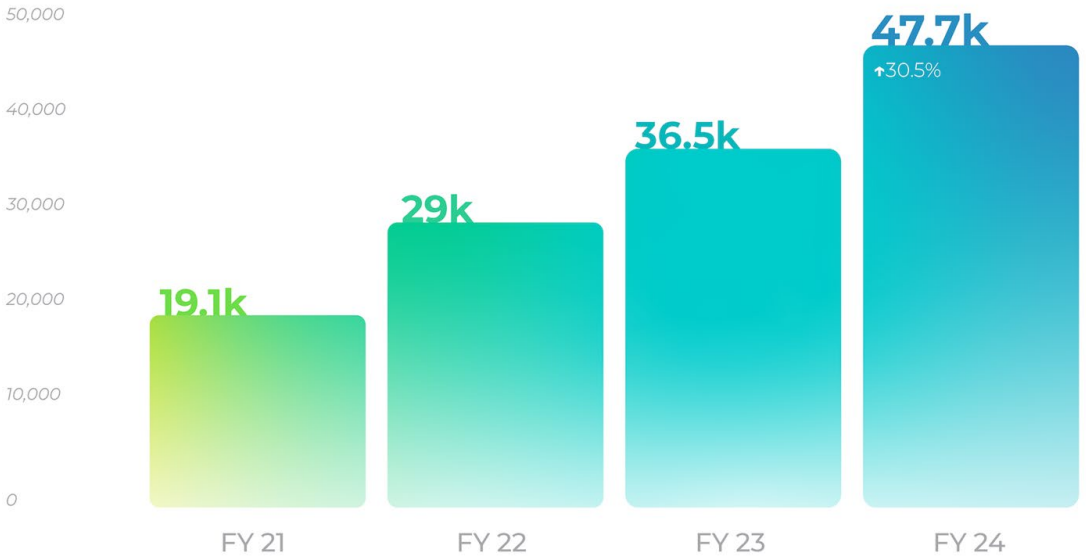
https://incs-coe.org/

FIVE YEARS OF ECI

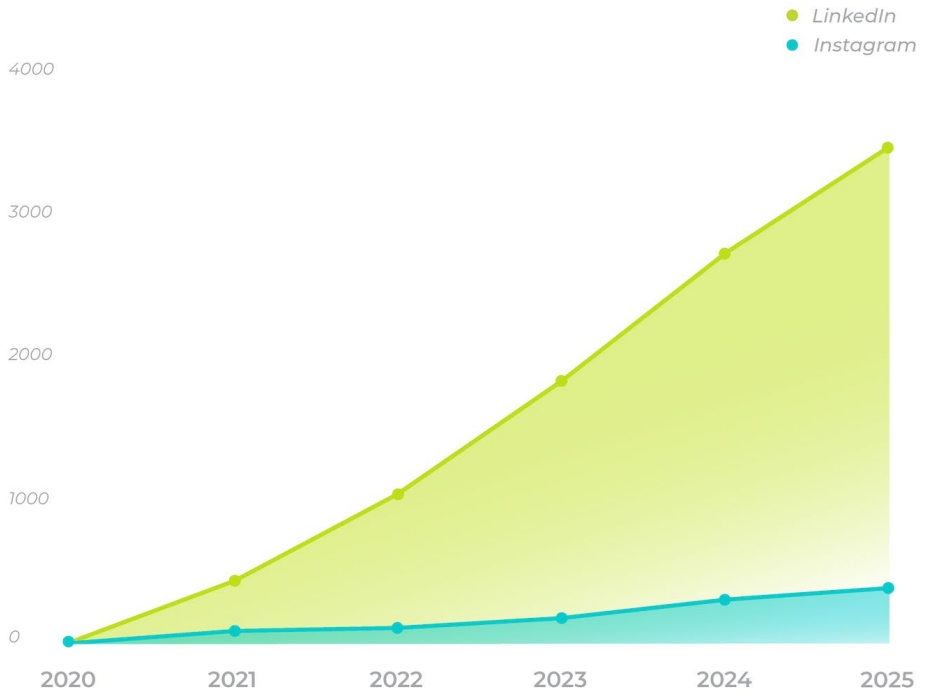
cyberinitiative.org

Societal Impact: Engagement with Broader Public

Total Website Users by Fiscal Year



Follower Growth by Year



March 2025 Newsletter Open Rate

73.6%

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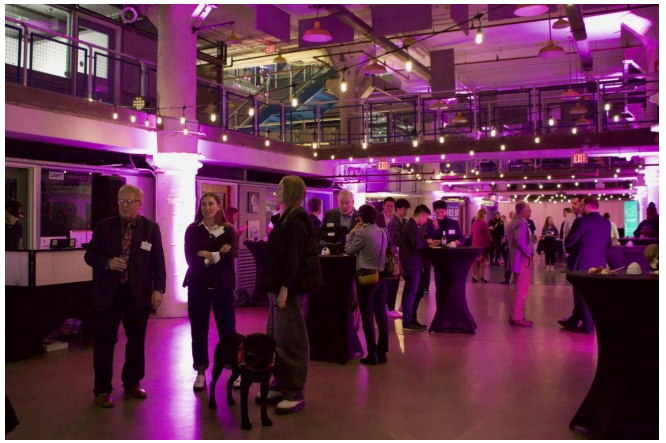
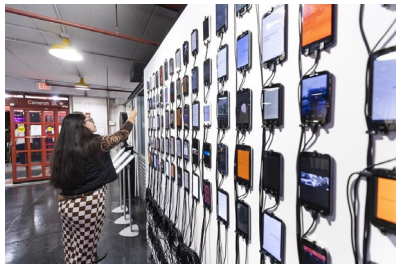
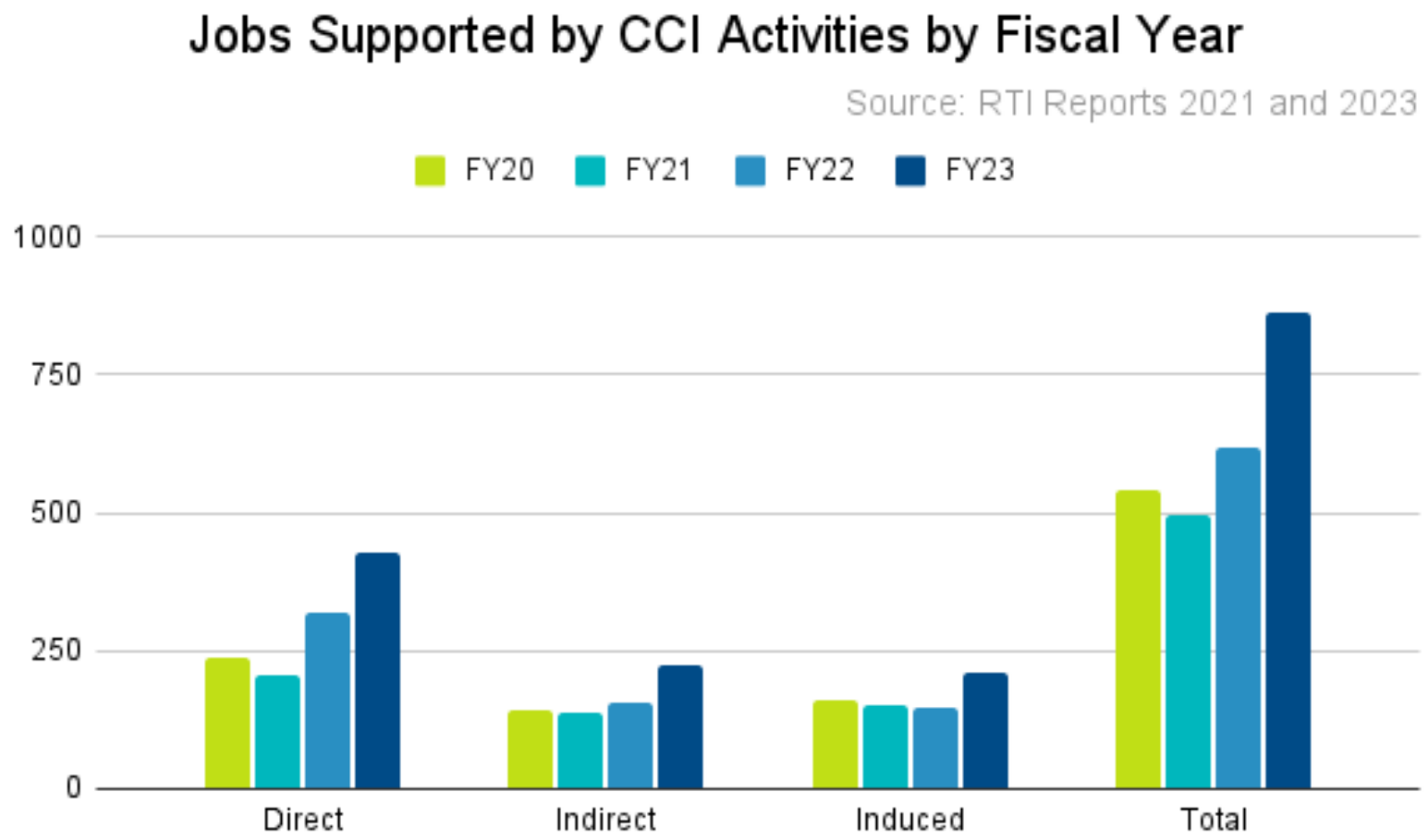
Societal Impact: Engagement with Broader Public





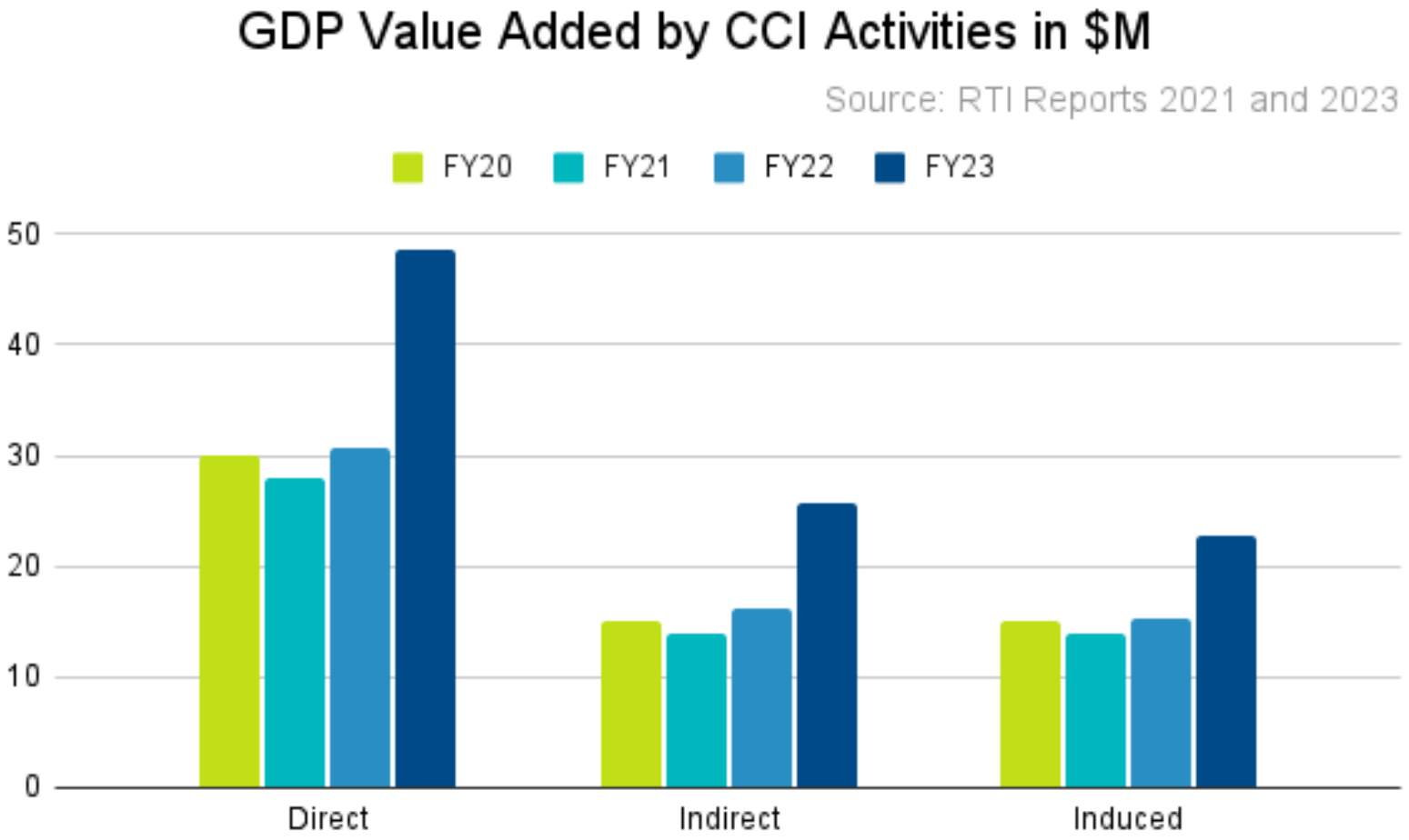
FIVE YEARS OF CCI

Economic Impact



FIVE YEARS OF CCI

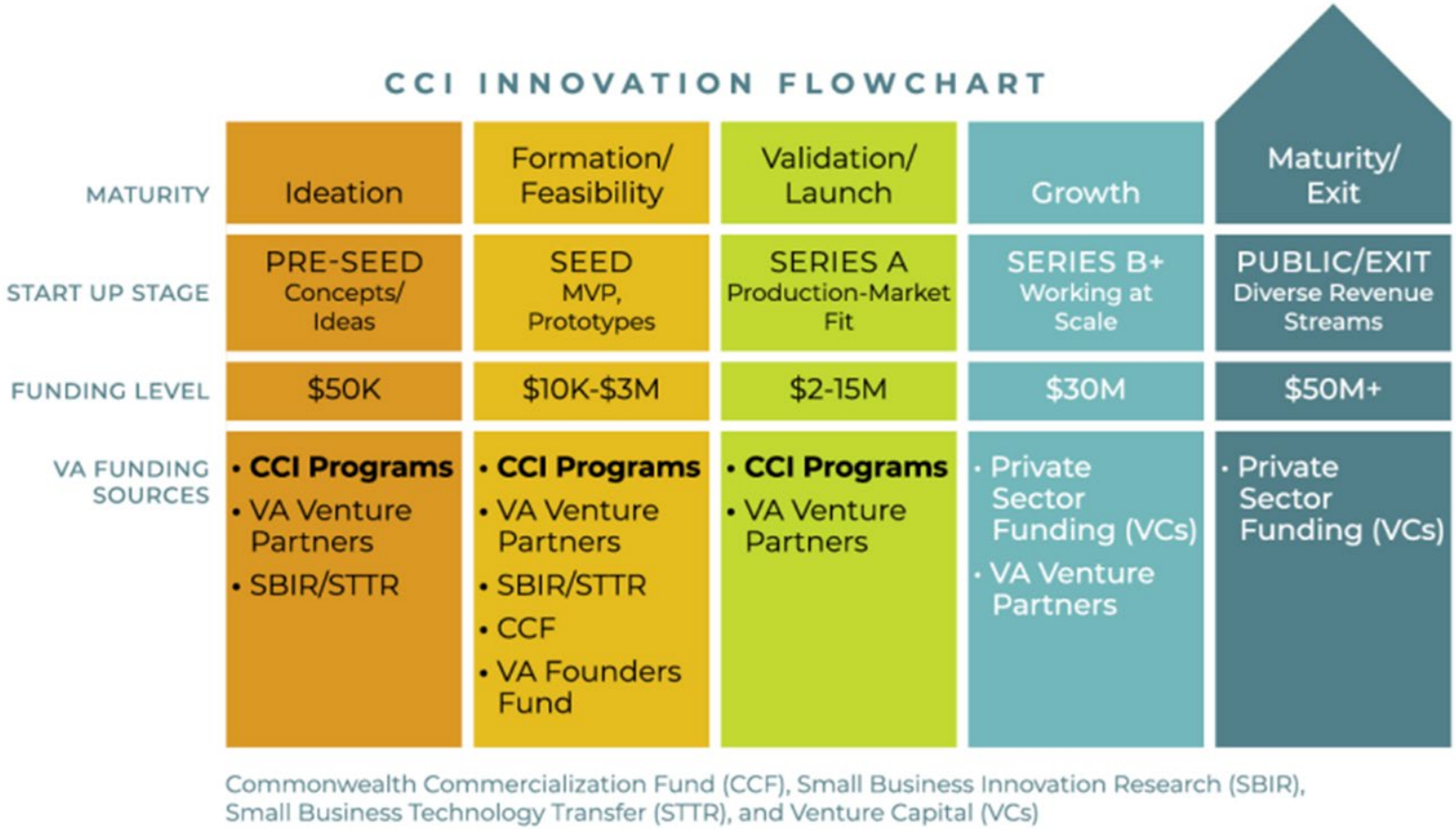
Economic Impact



FIVE YEARS OF CCI

Innovation Impact

Innovation Impact



Commonwealth Commercialization Fund (CCF), Small Business Innovation Research (SBIR), Small Business Technology Transfer (STTR), and Venture Capital (VCs)

FIVE YEARS OF CCI

Innovation Impact: CATAPULT + ASCEND

Cyber Acceleration, Translation, and Prototyping

- Led by CCI NOVA Node, in partnership with CCI Hub
- CATAPULT: CCI faculty interested in commercializing their work
- ASCEND: Early-stage companies needing additional expertise from CCI faculty
- Innovation pipeline towards additional sources of funding and investment

ODU team presenting MOXIE (Machine Learning Operations Executed in an Encrypted Environment), to enable the use of AI on confidential business data

FIVE YEARS OF CCI

Innovation Impact

WiSights Lab

Founders: Vijay Shah, Cong Shen, and Ritesh Gajjar
Advisor: Jeff Reed

- Pioneering AI and LLM solutions for Advanced Telecom networks
- Secure, Efficient and Capable LLM solutions

CyberMirage

Founder: Mingkui Wei

- Next-gen web content copyright protection

  Protects the copyright of web images and documents with innovative technology

Wadjet Security

Founder: Mohamed Gebril

- Wadjet security is a cutting-edge cybersecurity company specializing in threat hunting and the protection of cyber-physical systems (CPS).

Innovation Impact

Ongoing CFP:
Tech Transfer Support Fund

CCI is offering technology transfer support funding to faculty at primarily undergraduate institutions to facilitate research commercialization efforts.

Eligible faculty may apply for grants up to $8,000 to support patent application fees, legal fees, or other professional support.

Scan for More Info.

FIVE YEARS OF CCI

Workforce Development Impact

Workforce Development Impact

PBL Application Open

2025: Work at CACI While You Study

- 5 Students to be selected
- Earn $25 an hour
- Get immersed in real-life cybersecurity issues
- Gain mentored work experience

Scan for More Info.

Recruitment closes: April 30, 2025

CACI interview written test:

May 12 to 16, 2025

CACI interviews: May 19 to 23, 2025

Selected students notified: May 27, 2025

Project duration: Sept. 5 to Dec. 5, 2025

Kick-off meeting: Sept. 5, 2025

Presentation: Dec. 5, 2025

CACI
EVER VIGILANT

FIVE YEARS OF CCI

Workforce Development Impact

CFP: 2025 Experiential Learning Program

- CCI seeks proposals for experiential learning projects that provide Virginia students with the essential skills and knowledge to launch successful careers in cybersecurity.
- The proposed program must benefit students at more than one CCI institution.
- Projects that provide students with workforce experience will be prioritized.

Proposals Due:

April 25, 2025, 5 p.m. EDT

Award Notification:

May 23, 2025

Project Dates:

June 2, 2025, to June 30, 2026

Scan for More Info.

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Workforce Development Impact

Ongoing CFP: Cyber as a Service

- CCI seeks proposals for Cyber as a Service projects to enhance students' skills to enter the cybersecurity workforce on graduation and benefit the local economy.
- Projects, performed primarily by students, should provide a cyber service (e.g., penetration or pen testing, cyber risk analysis) to Virginia small businesses or not-for-profits in the same county as the institution of higher education.
- Up to $15,000

Scan for More Info.

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Research Impact

Research Impact: Topics

Retrieved from SciVal 3/25/25

Subject area abbreviations

COMP	Computer Science
MATH	Mathematics
PHYS	Physics and Astronomy
CHEM	Chemistry
CENG	Chemical Engineering
MATE	Materials Science
ENGI	Engineering
ENER	Energy
ENVI	Environmental Science
EART	Earth and Planetary Sciences
AGRI	Agricultural and Biological Sciences
BIOC	Biochemistry, Genetics and Molecular Biology
IMMU	Immunology and Microbiology
VETE	Veterinary
MEDI	Medicine
PHAR	Pharmacology, Toxicology and Pharmaceutics
HEAL	Health Professions
NURS	Nursing
DENT	Dentistry
NEUR	Neuroscience
ARTS	Arts and Humanities
PSYC	Psychology
SOCI	Social Sciences
BUSI	Business, Management and Accounting
ECON	Economics, Econometrics and Finance
DECI	Decision Sciences
MULT	Multidisciplinary

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Research Impact:
AI for Cybersecurity/Cybersecurity for AI

Seed grants:
18 grants, $1.6M

Multi-university Collaboration:
building partnerships between CCI universities (CNU, Mason, ODU, VMI, VT, UVA, VCU, W&M, VSU)

Follow-up: external-facing event in late 2025, editorial in Richmond Times Dispatch

CNU · Old Dominion University · Virginia State University Since 1882 · GMU · Virginia Tech · University of Virginia · VCU · William & Mary Chartered 1693

Richmond Times-Dispatch

FRIDAY, FEBRUARY 28, 2025 | A5

ARTIFICIAL INTELLIGENCE

To win AI race, invest in talent

The key to winning the artificial intelligence race will not be the data centers or power grids that we can build — it will be the talent that we can develop. In a field that is moving at breakneck speed, it is particularly important to form and recruit the professionals who will drive innovation in building and securing AI systems.

LUIZ DASILVA

The race for dominance in AI is running full tilt, with a strong focus on infrastructure resources. First came news of Stargate, a $500 billion joint venture by Open AI, Oracle and Softbank, a development momentous enough to merit President Donald Trump's presence at its announcement.

AI for cybersecurity is already firmly established. AI is routinely used to detect malicious activity: credit card companies use AI to flag unusual purchases, and system administrators use it to identify known attacks and combat "zero day" exploits on computer systems.

The flip side is that malicious players also develop attacks that target AI systems. For example, data poisoning attacks manipulate the data used to train an AI system so that it comes up with wrong outputs, or to create a backdoor that can be exploited for unauthorized access to information. AI can also be used to power ransomware attacks and social engineering attacks, through phishing that is increasingly sophisticated and targeted. And jailbreak attacks aim at bypassing security measures built around large language models, or LLMs.

In our network of Virginia universities, researchers are using generative AI to increase the security of iris biometrics, leveraging LLMs to analyze security vulnerabilities in

Luiz DaSilva is the executive director of the Commonwealth Cyber Initiative (CCI) and Bradley Professor of Cybersecurity at Virginia Tech. Contact him at ldasilva@vt.edu.

ANDY WONG, ASSOCIATED PRESS

An AI robot moves past an office information board showing the DeepSeek smartphone apps company in Beijing on Jan. 28.

https://cyberinitiative.org/research/funded-projects/ai-for-cybersecurity-and-cybersecurity-for-ai.html

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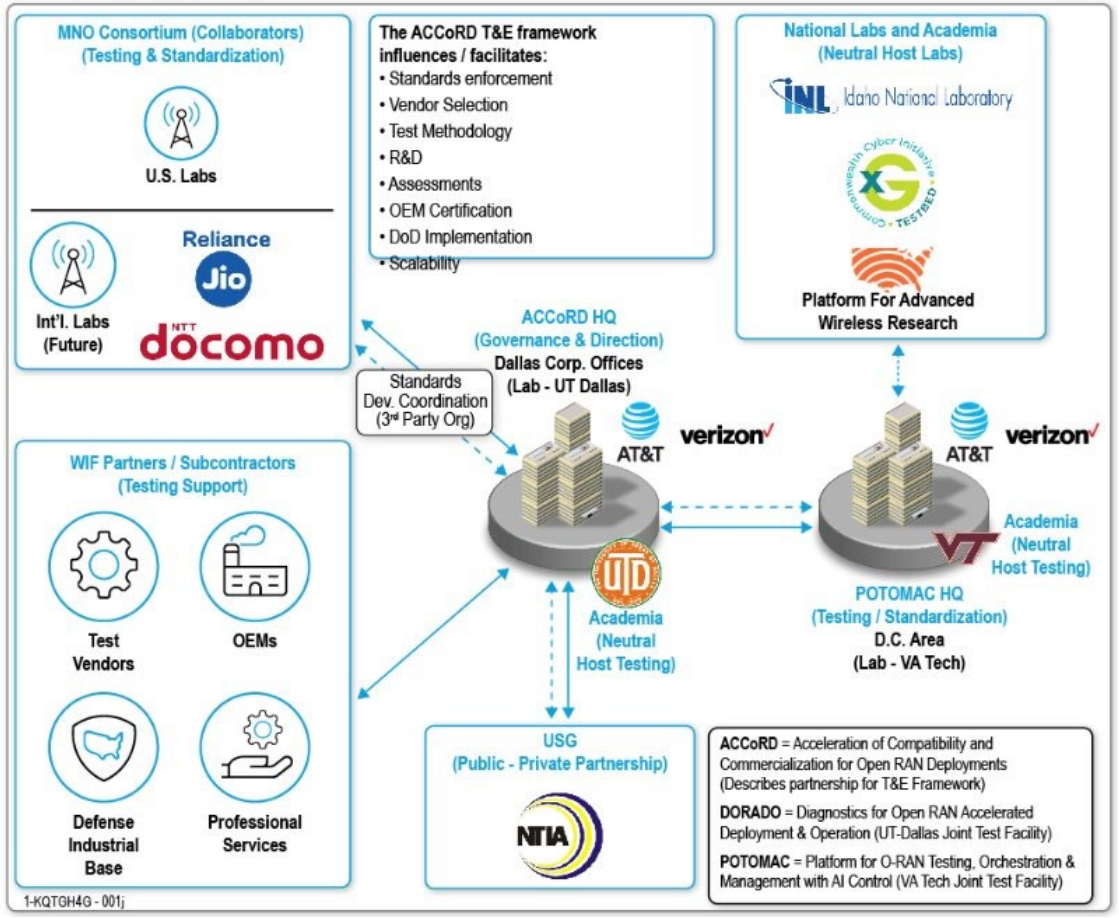
Research Impact: Open RAN



CCI plays a prominent role in ACCoRD, a $42M project funded by NTIA under NOFO1 and led by AT&T and Verizon

- **Wireless Supply Chain Innovation Fund ($1.5B)**: CCI researchers had great success in NOFO1 (6 projects funded) and NOFO2. Currently working with partners on NOFO3 submission
- **CCI xG Testbed**: world-leading O-RAN facility, designated as an open testing and integration center by the ORAN Alliance
- **Global engagement**: State Department visits and international delegations; collaborations with ORAN initiatives in Asia, South America

FIVE YEARS OF CCI

Future Impact

CCI Impact

2020-2023

Every job directly created by **CCI SPENDING** supports **another job in the economy.**

RTI Report: In Progress

2024-2025

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