Coastal Virginia Center for Cyber Innovation (COVA CCI)

Annual Report
July 2023 – June 2024

Research | Innovation | Workforce Development

June 30, 2024

Brian Payne – Director
John Costanzo – Chief Administrative Officer

Old Dominion University
Norfolk, Virginia 23529

Letter from Dr. Brian Payne, COVA CCI Director

The Coastal Virginia Center for Cyber Innovation was created more than five years ago to stimulate cybersecurity research, connect researchers with businesses, and provide experiential learning offerings to students in our region. As the regional node of the Commonwealth Cyber Initiative, COVA CCI's impact has exceeded expectations. From supporting 12 research faculty, supporting the William & Mary Cyber Policy and Law Group, funding 24 grants, and providing internships, undergraduate research support, and innovation training to more than four hundred students, COVA CCI has become part of our region's economic and innovation engine. The real impact goes beyond the numbers. Connections both with and between our partners are stronger than ever.

This annual report showcases the remarkable achievements of COVA CCI. On the one hand, I am quite proud of all that we have done – from the research to the innovation activities. On the other hand, because I am leaving COVA CCI's leadership role for another opportunity, I am experiencing mixed feelings. These mixed feelings are offset by the enthusiasm I have for our collective future. Dr. Daniel Takabi, director of ODU's School of Cybersecurity, has assumed COVA CCI's Director role. An experienced researcher and professor, Dr. Takabi has the leadership skills that will help to advance COVA CCI. While we reflect on the accomplishments outlined in this report, let's also look to the future of COVA CCI under Dr. Takabi's leadership. If past accomplishments are any indication, our future is bright!

I look forward to seeing the impact of COVA CCI in the future.

The Commonwealth Cyber Initiative COVA CCI

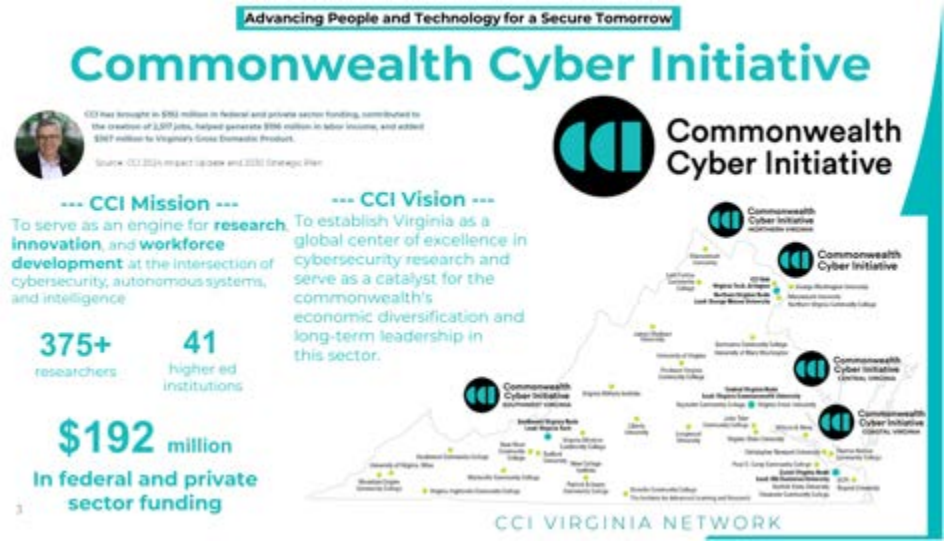
Annual Update
Reporting Period: July 2023 – June 2024

About COVA CCI

Virginia's Commonwealth Cyber Initiative (CCI) aims to create a Commonwealth-wide ecosystem of innovation excellence in cyber-physical systems (CPS) with an emphasis on trust and security. Certified as one of the four nodes of CCI, the Coastal Virginia Center for Cyber Innovation (COVA) seeks to:

- conduct fundamental research in cyber physical systems security (CPSS), artificial intelligence, and 5G contributing to the CCI mission of establishing Virginia as a global leader in secure CPS and in the digital economy,
- foster and accelerate commercialization of CPSS innovation to grow and diversify the Virginia cyber economy,
- expand and diversify the cybersecurity talent pipeline through investments in research capabilities and commercialization efforts, and
- build a collaborative network within the region of educational institutions, businesses, and local, state, and federal agencies, and with the other CCI nodes.

COVA CCI created a network of faculty and researchers representing the region's community colleges and universities. These educational partners include Christopher Newport University, Norfolk State University, Old Dominion University, William & Mary, Regent University, Virginia Wesleyan University, ECPI University, Eastern Shore Community College, Paul D. Camp Community College. Tidewater Community College, and Virginia Peninsula Community. COVA CCI is also partnering with industry and government agencies such as CISCO, G2Ops, Huntington Ingalls Shipbuilding, KBRWyle, MITRE, MI Technical Solutions, Peregrine Technical Solutions, Sentara Healthcare, Valor Cybersecurity, U.S. Navy, and 360IT.



Commonwealth Cyber Initiative
COASTAL VIRGINIA

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Summary of Accomplishments for FY 2024

COVA CCI focus during FY 2024 (July 2023 – June 2024) encompassed continuing the funded cybersecurity research projects, initiating selected CCI Collaboration Research projects, and supporting sponsored activities.

1. Awarded over $27.6 million dollars to COVA CCI academic institutions in cybersecurity grants from government and private industry.
2. Received over $6.2 million dollars from CCI sponsored programs and research since 2020. Including $1,059,599 of funding for seventeen projects during FY 2024.
3. Awarded four projects under the COVA CCI Research programs in FY 2024 totaling $250,000 and continued to support the seven funded programs from FY 2023 in the amount of $581,000.
4. Funded twelve (12) Research Faculty and one Systems Engineer during the year.
5. Hosted the COVA CCI CybER CON in September 2023 and supported the 2nd annual CVCSA Capture-the-Flag event, CyberForge, in February 2024.
6. Selected eleven (11) graduate students to participate in the Cyber Experiential Learning (CyberExL) program. A total of 64 students representing four institutions completed CyberExL since January 2020.
7. Selected thirty (30) students to participate in the Cybersecurity Undergraduate Research Program during the year (Fall 2023 and Spring 2024). 82 students from seven institutions have completed this program since January 2020.
8. Selected forty-three (43) students from seven universities and colleges to participate in the Spring 2024 cohort of Innovate Cyber Challenge. 185 students from 15 institutions have been supported since the program began in January 2022.
9. Continued the use of the Shared Collaborative Research Computing Environment (COVA SHARE) and supported projects in this environment.
10. Developed a regional network of over 100+ researchers, faculty, and business partners working for eight colleges/universities and 20+ businesses.

Update on the Seven Requirements

1. External Research Grants Attracted to Support the Work of CCI

The Commonwealth Cyber Initiative completed an economic impact study using FY 2023 data and it determined CCI obtained $7.50 in research funding from sources outside Virginia for every $1.00 spent by CCI research activities. In total, CCI researchers received more than $75 million in research funding during FY 2023.

Source: 2024 Impact Update and 2030 Strategic Plan

2024 CCI Impact Award. Dr. Sachin Shetty, Director of the Center for Secure and Intelligent Critical Systems, Virginia Modeling, Analysis, and Simulation Center, Old Dominion University, was awarded the CCI Impact Award during the April 2024 CCI Symposium in Richmond Virginia. As stated in the nomination for this prestigious award, Dr. Shetty received more than $20 million in grants and contracts, and he is the originator of cybersecurity research at VMASC. With the DoD's investment in 5G across various military sites, Dr. Shetty collaborated with CCI faculty and VT-ARC to submit multiple proposals in response. As a result, Dr. Shetty is the technical lead for the $13 million 5G-enabled "smart warehouse" contract funded by the DoD to develop a 5G-enabled "smart warehouse" at the Marine Corps Logistics Base (MCLB) in Albany, Georgia. His research in areas of Blockchain and Cyber Risk and Resilience Analytics have been transitioned into products and that are used in the federal, defense and commercial sector. See this article to find out more about Dr. Shetty's contributions: https://cyberinitiative.org/cci-news/2024-news/cci-presents-sachin-shetty-of-odu-with-2024-impact-award.html.

Old Dominion University Lab Schools

Old Dominion University is supporting a network of nine Lab schools as part of the Virginia Department of Education's Virginia College Partnership Laboratory Schools Fund. Four of these Lab schools are located within COVA CCI's region. They include Chesapeake Public Schools, Newport News Public Schools, Suffolk Public Schools, and an Eastern Shore partnership with Accomack County Public Schools and Northampton County Public Schools. Each Lab school will include cybersecurity as part of their curriculum. To support these programs, ODU received $18,540,000 in funding. Additionally, ODU will act as the fiscal agent for five Lab school programs outside of the Coastal Virginia region.

Old Dominion University's Center for Educational Innovation and Opportunity will (1) be the hub for ODU's lab school network, (2) serve as the fiscal agent or lead partner for the nine schools in the institution's lab school network, (3) coordinate best practices and research between lab schools across the Commonwealth of Virginia, (4) provide subject matter expertise to lab school leaders in the Commonwealth, (5) promote a culture of innovation across Virginia's K-12 and higher education institutions, (6) identify strategies to develop and scale innovative educational programs and initiatives in the Commonwealth. Funding is provided through the Virginia Department of Education. The Center will cultivate a community of practice across the nine lab schools in the ODU Lab School Network.

The programs supported within COVA CCI's network include:

The Maritime Engineering and Environmental Studies Academy (MEESA), Newport News Public Schools. The Maritime Engineering and Environmental Studies Academy (MEESA) is an innovative teaching and learning collaboration

between Old Dominion University and Newport News Public Schools based out of the Brooks Crossing Innovation and Opportunity Center in Newport News. Our focus is on equipping students with the knowledge, skills, and hands-on experiences to excel in the maritime field, while ensuring they meet or exceed the Virginia Board of Education's Standards of Learning (SOL).

The Computer Science Lab School (CSLS) at Oscar Smith Middle (OSM), Chesapeake Public Schools. The Computer Science Lab School (CSLS) at Oscar Smith Middle (OSM) is dedicated to seamlessly integrating computer science into the curriculum through a human-centered design thinking framework. This collaborative initiative brings together Chesapeake City Public Schools (CPS) and Old Dominion University (ODU). With a strong emphasis on project-based learning and hands-on approaches, the school aims to cultivate computational thinking, problem-solving, critical thinking abilities, and other essential skills crucial for success in computer science coursework.

STEM-focused laboratory school within Booker T. Washington Elementary, Suffolk Public Schools. Old Dominion University (ODU) and Suffolk Public Schools (SPS) are establishing a STEM-focused laboratory school within Booker T. Washington Elementary. The Lab School will serve 120 students in grades kindergarten through 5th grade and will be designed to be an innovative learning environment for students, a learning hub for educator preparation, and research setting for both University faculty and K-12 educators. The Lab School will provide a rich environment for the utilization of innovative teaching methods, curriculum development, and educational theories in a practical, hands-on setting.

Aerospace Academy of the Eastern Shore (AAES). Accomack County Publish Schools, Northampton County Public Schools, and Eastern Schore Community College. Accomack County Public Schools, Northampton County Public Schools, and the Eastern Shore Community College are partnering with Old Dominion University to launch the Aerospace Academy of the Eastern Shore (AAES). AAES has been developed to create a pipeline to prepare workers for the aerospace and adjacent industries identified as priorities by the GoVA Region 5 Economic Development Authority. The vision of AAES is to be an innovative, interdisciplinary school and the regional standard of excellence in preparation for high-tech jobs in the high-growth aerospace field.

See these News articles for additional information.

ODU News, ODU Receives State Approval for Lab Schools In Newport News and Chesapeake, May 7, 2024.

Cardinal News, State board approves plan for Old Dominion-led lab school network, June 24, 2024.

External Research Projects. During FY 2024, researchers associated with COVA CCI received $27,571,282 in external grant funding from multiple public and private organizations.

See the table below for the list of funded projects.

Project Name	PI/Co-PI	Lead Institution	Partner Institution	Funding Amount	Funding Agency	Start	End
Cybersecurity for Small Business Pilot Program	Sachin Shetty	ODU		$1,000,000	Small Business Admin	10/1/2023	9/31/25
WRT-1087: Center for Offshore Wind Energy Cyber Vulnerabilities and Threat Identification	Sachin Shetty	ODU	Stevens Institute of Technology and Virginia Tech	$1,000,000	DoD	4/152024	4/14/2025
Self-sovereignty identity management in 5G enabled devices	Sachin Shetty	ODU		$100,000	Commonwealth Commercialization Fund (VIPC)	10/1/2023	9/30/2025
Cybersecurity Center for Offshore Wind Energy	Sachin Shetty	ODU		$1,000,000	DoE	4/1/2024	3/31/2025
Cyber Risk and Resilience Analytics	Sachin Shetty	ODU		$1,016,734	FTI	07/01/23	9/31/26
Privacy Preserving Machine Learning	Sachin Shetty	ODU		$100,000	Deloitte	6/4/2021	5/31/2025
Deception for characterizing adversarial strategies in complex networked systems	Sachin Shetty	ODU		$120,000	Army Research Office (ARO)	7/1/2023	6/30/2025

Towards Developing Mission Analytics for Cyber EW	Sachin Shetty	ODU		$85,000	Amentum	10/1/2023	9/30/2024
Center of Excellence in Machine Learning	Sachin Shetty	ODU		$350,000	DoD	10/1/2024	9/30/2025
Collaborative Research: CyberTraining: Implementation: Medium: T3-CIDERS: A Train-the-Trainer Approach to Fostering CI- and Data-Enabled Research in Cybersecurity	Masha Sosonkia (ODU) Peng Jiang (ODU)	ODU		$750,000	NSF	9/1/2023	8/31/2026
CYBER TRAINING: IMPLEMENTATION: SMALL: BUILDING FUTURE RESEARCH WORKFORCE IN TRUSTWORTHY ARTIFICIAL INTELLIGENCE (AI) (Award carried over from previous institution. Award amount is remaining funds.)	Daniel Takabi	ODU		$24,091	NSF	10/1/2023	10/31/2025
SECURE CLASSIFIED ANALYTICS IN THE CLOUD WITH HOMOMORPHIC ENCRYPTION	Daniel Takabi	ODU		$684,726	NSA		
SATC: CORE: SMALL: AN ATTRIBUTE-BASED INSIDER THREAT MITIGATION FRAMEWORK (Award carried over from previous institution. Award amount is remaining funds.)	Daniel Takabi	ODU		$360,428	NSF	10/1/2023	8/31/2024
SATC: EDU: SECURE AND PRIVATE ARTIFICIAL INTELLIGENCE (Award carried over from previous institution. Award amount is remaining funds.)	Daniel Takabi	ODU		$127,156	NSF	10/1/2023	7/31/2025
BUILDING CYBERSECURITY ANALYTICS CAPACITY IN BIG DATA ERA: DEVELOPING HANDS-ON LABS FOR INTEGRATING DATA SCIENCE INTO CYBERSECURITY CURRICULUM (Award carried over from previous institution. Award amount is remaining funds.)	Daniel Takabi	ODU		$327,037	NSF	10/1/2023	8/31/2024
Collaborative Research: III: Small: Taming Large-Scale Streaming Graphs in an Open World	Yi He	ODU		$600,000	NSF	7/1/2023	6/30/2026
CRII: III: Pursuing Interpretability in Utilitarian Online Learning Models	Yi He	ODU		$175,000	NSF	7/1/2023	6/30/2025
Facilitate the Convergence of the Next-gen AI and Wireless	Yi He	ODU		$100,000	Interdigital Co.	1/31/2023	1/1/2024
Simulation Frameworks, Maritime Directable Traffic and Authoring Tools	Yiannis Papelis	ODU		$576,000	US Navy	1/1/2024	12/31/2024
Maritime Engineering and Environmental Studies Lab School	Karen Sanzo PI, Maggie Barber Co-PI, Joanna Garner Co-PI	ODU	Newport News Public Schools	3,590,000	VA DOE	1-Jul-24	30-Jun-29

Computer Science Lab School	Karen Sanzo PI, Maggie Barber Co-PI, Joanna Garner Co-PI	ODU	Chesapeake Public Schools	6,590,000	VA DOE	1-Jul-24	30-Jun-29
The STEM Academy	Tish Szymurski PI, Karen Sanzo Co-PI, Maggie Barber Co-PI	ODU	Suffolk Public Schools	4,360,000	VA DOE	1-Jul-24	30-Jun-29
Aerospace Academy of the Eastern Shore	Karen Sanzo PI	ODU	Accomack Public Schools, Northampton County Public Schools, Eastern Shore Community College	4,000,000	VA DOE	1-Jul-24	30-Jun-29
From Vulnerability Reports to Exploits: Which Ones Should We Prioritize and Why	Denys Poshyvanyk	WM		$75,000	Cisco Systems Inc	6/30/2023	6/30/2024
Developing a Plan to Improve Research Computing at Christopher Newport University	William Phelps	CNU		$99,966	NSF	8/1/2023	7/31/2024
NCAE-C in Cybersecurity Education Innovation	Cherly Hinds	NSU		$174,894	DoD	Awarded	7/16/2023
NSF AI Institute for Agent-based Cyber Threat Intelligence and Operation	Tonya Fields	NSU		$185,250	NSF	Awarded	6/1/2023

2. Summary of Research Grants and Programs Awarded

COVA CCI is providing research funding for several initiatives. This support has proven to be instrumental in enhancing research efforts through collaboration with fellow researchers across the CCI network.

Research Programs	Funding
FY 2024 COVA CCI Cybersecurity Research Funding	$250,000
FY 2023 COVA CCI Cybersecurity Research and Innovation Funding Program	$581,000
Research Scientists	$1,067,500
COVA SHARE Support	$41,696
Cybersecurity Undergraduate Research Program	$39,300

a) **FY 2024 COVA CCI Cybersecurity Research Program.** COVA CCI supported four research projects with funding in FY 2024 for a total amount of $250,000. These projects were selected from two CCI Call for

Proposals - Supply Chain in Cybersecurity Research and Addressing Inclusion and Accessibility in Cybersecurity.

COVA CCI Funded Research Projects – FY 2024

CCI Call for Proposals	Project Title	PI	Co-PI	Amount
Addressing Inclusion and Accessibility in Cybersecurity	Tackling Dark Pattern-Induced Online Deception of People with Visual Disabilities	Vikas Ashok (ODU)	Faryaneh Poursardar (ODU)	$50,000
Supply Chain in Cybersecurity Research	Enhancing Security of Software Supply chain - A Focus on AI/ML	Mohammad GhasemiGol (ODU)	Daniel Takabi (ODU)	$100,000
Supply Chain in Cybersecurity Research	A Paradigm Shift: Innovating Supply Chain Security for AI-Assisted Devices	Rui Ning (ODU)	Peng Jiang (ODU) Yuhung Li (ODU) Xinwei Deng (VT)	$50,000
Supply Chain in Cybersecurity Research	Advancing Supply Chain Security through Quantum Computing: A Framework for Rapid Optimization maritime and supply chain companies	Qun Li (W&M)		$50,000

b) **FY 2023 COVA CCI Cybersecurity Research and Innovation Funding program**. COVA CCI provided funding through the COVA CCI Cybersecurity Research and Innovation Funding program. The focus of research for FY 2023 was Maritime Cybersecurity, and seven projects were selected for $581,000. Visit the COVA CCI/Research website for additional information on each project.

COVA CCI Funded Research Projects – FY 2023

Project Title	PI	Co-PI	Amount
Enhancing the RiverScout Autonomous Maritime Platform with cyber-hardened 5G capabilities within the constraints of CMMC	Yiannis Papelis (ODU)	Ahmet Saglam (ODU) Casey Batten (SimIS, Inc.)	$100,000
Automated CMMC Compliance for Shipbuilding	Safdar Bouk (ODU)	Andrew Mixon (Chitra)	$100,000
Spotlighting and Mitigating Cyber-Attacks in AIoT-enabled Maritime Transportation Systems	Yi He (ODU)	Rui Ning (ODU) Yuhong Li (ODU) Peng Jiang (ODU) Leigh Armistead (Peregrine Tech Solutions)	$100,000
Machine-learning enabled Dependency Network Analysis for Quantifying Risks and Ripple Effects stemming from Cybersecurity Non-Compliance Issues	Rafael Diaz (ODU)		$37,033
Maritime Cybersecurity Maturity Model Certification Domain Handbook	Sachin Shetty (ODU)	Warren Bizub (SimIS, Inc) Michael Humprey (SimIS, Inc)	$92,650
Exploring Challenges and Adoption Enablers of Cybersecurity Maturity Model Certification in Maritime Industries	Chon Abraham (WM)	Tracy Gregorio (G2Ops)	$52,129

Navigating Cybersecurity Compliance Challenges for the Maritime Industry in Southeast Virginia	Mohammad Almalag (CNU)	Michael Lapke (CNU) Christopher Kreider (CNU) Leigh Armistead (Peregrine Tech Solutions)	$99,296

c. **FY 2024 CCI Funded Research Programs.** COVA CCI was awarded fourteen projects from CCI and three from CCI NOVA during FY 2024 totaling $1,059,599.

FY 2024 CCI Research Projects	**Awards**	**Total Funding awarded to COVA CCI**
CCI Fellow (Ross Gore - ODU/VMASC)	1	$50,000
Supply Chain in Cybersecurity Research	5	$350,000
Cyber as a Service	1	$5,000
Experiential Learning Programs	4	$384,099
Addressing Inclusion and Accessibility in Cybersecurity	2	$100,000
Virginia Cybersecurity Students (VCyS) Association	1	$20,500
Totals	**14**	**$909,599**

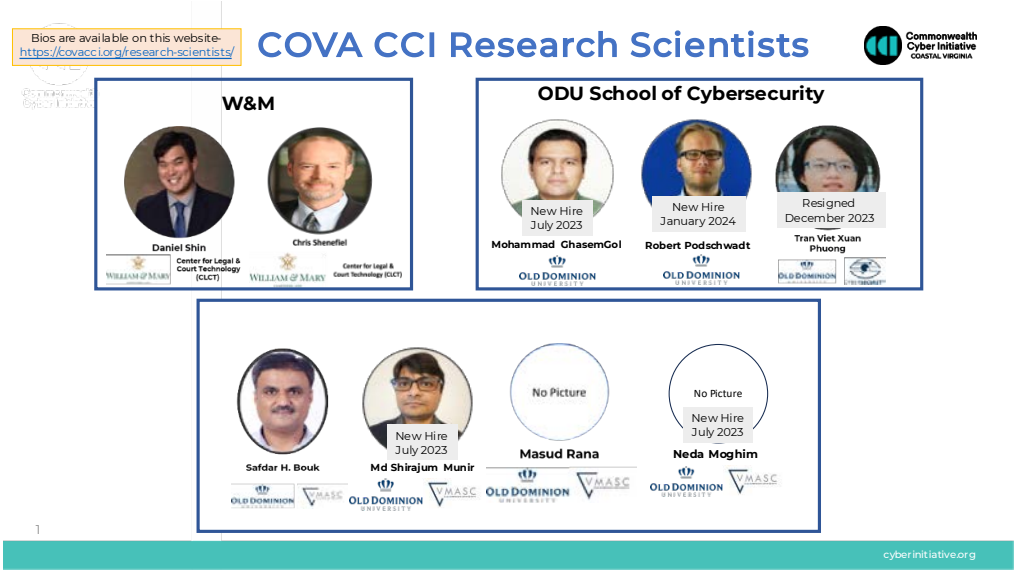
FY 2024 CCI NOVA Research Projects	**Awards**	**Total Funding awarded to COVA CCI**
2024 CATAPULT (Cyber Acceleration, Translation, and Advanced Prototyping for University Linked Technology	3	$150,000
Totals	**3**	**$150,000**

d. **Research Faculty.** COVA CCI continues to support research scientists at William & Mary and Old Dominion University (School of Cybersecurity and Virginia Modeling, Analysis, and Simulation Center) and one ITS engineer with ODU. These research scientists are hired on an initial two-year contract with an option to extend for one-year. Bios for these research scientists are found on the COVA CCI website/People/Research Scientists. During FY 2024, four new research scientists were hired: Mohammad GhasemiGol, Robert Podschwadt, Neda Moghim, and Md Shirajum Munir.

The supported research scientists and ITS Engineer are.

- Chris Shenefiel, William & Mary
- Daniel Shin, William & Mary
- Tran Phoung, ODU School of Cybersecurity. (Resigned December 2023)
- *Mohammad GhasemiGol, ODU School of Cybersecurity.
- *Robert Podschwadt, ODU School of Cybersecurity.
- Masud Rana, ODU VMASC.
- Safdar Bouk, ODU VMASC

- *Neda Moghim, ODU VMASC.
- *Md Shirajum Munir, ODU VMASC.
- Yogesh Sur, ODU. Hired as an ITS engineer to support COVA SHARE.



e. **CCI Supply Chain Cybersecurity Cluster.** In addition to these research scientists, COVA CCI provided funding in FY 2023 to hire three professors/research professors as part of a cluster hire with George Mason University and they were hired in July 2023. The ODU cluster will focus on supply chain and maritime cybersecurity and will work with GMU faculty to pursue large government projects related to these research areas.

- Rafael Diaz, ODU, Director Supply Chain Cybersecurity Research
- Bikash Chandra Singh, ODU Research Assistant Professor
- Lida Haghnegahdar, ODU Research Assistant Professor

f. **COVA Shared Research Environment (COVA SHARE)**

COVA CCI continues to invest in our shared collaborative research computing environment, known as COVA SHARE, to support the growing cybersecurity programs, academic and research collaboration opportunities, and industry partnerships. During FY 2024 a total of $51,696 was invested in supporting this environment - $34,000 in direct support to hire two students as technical experts and to provide a stipend to a faculty member at Christopher Newport University to be the COVA SHARE Faculty Advisor. An additional $17,696 was used to purchase additional equipment to update the computer hardware.

Visit the COVA CCI/Research/COVA SHARE website for additional information on COVA SHARE and watch a short overview YouTube video – What is COVA Share? – to learn more about this resource.

g. **Cybersecurity Undergraduate Research Program**. COVA CCI supported the Cybersecurity Undergraduate Research Program in Fall 2023 and Spring 2024 program. A total of 30 students from Christopher Newport University, Norfolk State University, Old Dominion University, Tidewater Community College, and William & Mary, completed the program during the year. This program leverages the strength of research-extensive institutions to support active research participation by undergraduate students around cybersecurity. The student research is found on the COVA CCI/Innovation/Undergraduate Research website.

The student's papers are uploaded into the ODU Digital Library, which allows them to be viewed and cited. As of June 30, 2024, these papers were viewed over 14,677 times.

Source: ODU Digital Commons, Cybersecurity Undergraduate Research, Dashboard.

Source: ODU Digital Commons, Cybersecurity Undergraduate Research, Dashboard.

3. Results of Entrepreneurship and Workforce Programming Innovation, Workforce Development and Experiential Learning Programs

Student Testimonial. Ms. Trinity Woodberry, ODU BS in Cyber Crime ('23) and MS in Cybersecurity ('24), provided a testimonial on how COVA CCI experiential learning programs assisted in shaping her academic journey. Trinity expressed her gratitude for the opportunities provided by COVA CCI/CCI and Old Dominion University. She participated in the COVA CCI Undergraduate Research program, the Innovate Cyber Program, and the NSF REU program with ODU, and received the DoD CYSP scholarship.

Trinity Woodberry (ODU '23/'24)

"My journey with COVA CCI has been nothing short of transformative. The projects I've been involved in have not only honed my skills but also deepened my understanding of Cybersecurity in ways I never imagined possible. It's been a game-changer, an experience that has set me on the path to becoming the best Cybersecurity professional I can be.

Reflecting on my time with COVA CCI fills me with an overwhelming sense of gratitude and excitement. It was more than just an experience; it was a transformative journey that shaped my career in Cyber Security. Daniel Shin and Lora Pitman, my mentors at COVA CCI, were not just mentors; they were beacons of wisdom, guiding me through the complexities of cybersecurity and illuminating the path to success. Without their guidance and the invaluable opportunities provided by COVA CCI, I wouldn't be where I am today.

Indeed, COVA CCI is not just a platform; it's a catalyst for growth and excellence in the cybersecurity domain. It's where passion meets opportunity, and where individuals like me are equipped with the knowledge and skills to thrive.

My passion for seeing both ODU and COVA CCI thrive knows no bounds. My mission is crystal clear: to empower COVA CCI and ODU by facilitating valuable connections between students and businesses and nurturing the next generation of cybersecurity professionals.

I'm hungry for more opportunities to learn and grow, both within COVA CCI and beyond. Whether it's research, mentorship, or any other avenue for personal and professional development, count me in! My heart swells with gratitude for the role COVA CCI and ODU have played in shaping my journey thus far—I am truly blessed to have crossed paths with such incredible mentors and opportunities.

My journey with COVA CCI culminated in securing a coveted position as a Software Engineer at NIWC-LANT U.S. Navy, a testament to the transformative power of this exceptional program. But that's just the beginning. I've got big plans—I'm headed to Capitol Technology University to pursue a Ph.D. in Offensive Cyber Security Engineering and mark my words; I'll have that doctorate in hand by the time I'm 24."

COVA CCI supports several programs in innovation, workforce development, and student experiential learning. These include the Innovate Cyber Challenge, the Graduate Student Experiential Learning Program (CyberExL), and Cybersecurity Internship Clinic

Program	Funding
Innovate Cyber Challenge	$105,000
CyberExL	$100,000
Cybersecurity Internship Clinic	$200,000

a. **Innovate Cyber Challenge.**

COVA CCI completed another cohort of its Innovate Cyber Challenge in spring 2024 with a total of 43 students from seven universities & colleges. These included Christopher Newport University, George Mason University, Old Dominion University, University of Virginia, UVA-Wise, Virginia State University, and Virginia Tech.

This program groups students into teams and each of the teams are assigned a cybersecurity problem/challenge. Over the semester, the teams use design thinking to produce unique solutions for the problem and present their final product during a Showcase event in April 2024.

The teams participating in this year's cohort are;

EMMA

Virtual Vigilance

Cyber Chunks

Cyber Spyder.

CyberScape

SecureBrain

EncryptX

Fortify

OBOL

Visit the [COVA CCI/Innovation/Innovate Cyber Challenge webpage] to view these and previous years projects.

Heliene Macaraeg, Old Dominion University, Innovate Cyber designer.

"The INNOVATE internship has been an amazing opportunity to team up with bright minds from various schools and majors. Despite our unique skill set, we came together with a shared purpose: to tackle a critical cybersecurity challenge handpicked by our team. After conducting surveys and research, my team recognized a crucial gap in tech literacy among seniors and felt compelled to make a difference.

Throughout the internship, we immersed ourselves in the principles of design thinking, using empathy to shape our prototype. I have learned so much, and watching our collective efforts turn into a solution has filled me with so much pride.

The INNOVATE internship isn't solely about learning; it's about embracing creativity, resilience, and teamwork. The freedom to explore without constraints was truly empowering and it opened my eyes to the potential within me. There is so much room in the world to make a difference if you just look."

b. **Graduate student experiential learning program (CyberExL).**
COVA CCI's graduate student experiential learning program (CyberExL) is managed by Dr. Stephanie Blackmon, William & Mary School of Education. CyberExL, a COVA CCI graduate experiential learning program, is designed to provide graduate students from a variety of academic disciplines with opportunities to gain vital experience and mentorship in various areas of cybersecurity by working directly with companies, faculty, researchers, and university administrators.

During Spring 2024, 11 students, representing Norfolk State University, Old Dominion University, and William & Mary, were engaged in experiential learning activities across eight unique placements. These students engaged in supporting research projects, with one student having administrative and research responsibilities. These placements included working on cybersecurity and information systems research; developing and implementing artificial intelligence (AI) solutions as a part of a team; developing AI models based on federated learning or models for image analysis using Large Language Models (LLMs); conducting interdisciplinary work in law and computer science; working with a team on a generative AI framework; working with a team on AI and supply chains; working with a team on federated learning and healthcare; and working with a team on deep learning models and AI.

Additional information can be found on the [COVA CCI/Talent Development & Experiential Learning Program website.]

2024 CyberExL Cohort

Shaun Liu and Sravanthi Proddatoori, Poster Session at the CCI Symposium, April 2024

DANIEL SHIN, PROFESSOR, WILLIAM & MARY LAW SCHOOL, CENTER FOR LEGAL & COURT TECHNOLOGY, CYBEREXL PLACEMENT PROVIDER

"COVA CCI CyberExL provides a unique research engagement opportunity that allows student participants to undertake cutting-edge issues with an entrepreneurial mindset. We were able to guide students in the evolving field of AI risks from a commercial and legal perspective, and the students were successful in producing easily accessible literature that summarized the AI risk landscape for a business management audience. CyberExL provides an excellent opportunity for students to engage in projects that are beyond the scope of the traditional academic learning environment, but they still have the opportunity to work on consequential and cutting-edge work in the field."

c. COVA CCI Cybersecurity Internship Clinic

Cyber Clinic students visit 757 Collab.

Cyber Clinic students meet with business clinic and clinic staff.

Students present findings to business clinic.

During the Spring 2024 semester, COVA CCI supported a pilot of our Cybersecurity Internship Clinic. Eight (8) students from Old Dominion University and two micro-businesses - a non-profit religious ministry and a government contractor - were selected for this pilot. We partnered with Valor Cybersecurity, a local cybersecurity business, which provided training and subject-matter expertise to the students as they prepared to complete the assessment of the client businesses. We also had a representative from CISA speak about the CISA Cybersecurity Performance Goals and how they can be used to support small businesses.

This clinic provides pro bono cybersecurity-as-a-service to small businesses, non-profits, local government offices/agencies/board, and other organizations using selected students to assess the organization's cybersecurity preparedness and risk posture.

The objective of this clinic is to provide cybersecurity awareness and services (education, risk management posture) to client organizations within Hampton Roads while providing an experiential learning opportunity for the students participating in the program as cybersecurity interns/consultants. Specifically, this clinic targets those client organizations that do not have a strong cyber presence and who can find value in gaining knowledge of cybersecurity through cybersecurity awareness and services.

This is a 15-week program offered during the fall and spring academic semesters. During the program, students receive training on different cybersecurity modules, allowing them to interview client organizations during the middle part. The students work in teams under the supervision of ODU faculty. The team provide service to the client in one or more areas of cybersecurity network defense, cybersecurity policies and procedures, cybersecurity training for employees, cyber risk assessments, and/or cybersecurity best practices.

Testimonials from the two business owners selected for the pilot.

Beth Vinson, Business Client, Cybersecurity Internship Clinic

"As one of the first two small business participants in the incubation stage/pilot program of the COVA CCI Cybersecurity Internship Clinic, my first word after completion was FABULOUS! I was so impressed with the young people of ODU involved in this effort, and the massive benefit they provided for my small business was invaluable. The students were super professional, incredibly knowledgeable about all things Cybersecurity, and taught me so many things with their intuitive research and ability to deliver the best information available, I was just amazed at how capable they were. I highly recommend this program to anyone who works with computers or equipment that traverses the internet and find out just how much you may need to adjust or change how you do business online. These folks are truly top shelf when it comes to Cybersecurity."

Gwen Moss, Business Client, Cybersecurity Internship Clinic

"I highly recommend the Cybersecurity Internship Clinic. It was a hassle-free experience that gave me a detailed assessment I can use now and later in the future as we grow as a ministry. With bad actors constantly trying to compromise our digital footprint, I believe if you gain one more piece of information to protect your business is time well spent. Additionally, the experience you afford student interns is gratifying!"

Student testimonials regarding their experience with support the pilot of the Cybersecurity Internship Clinic.

Lee Acheampong, BS Cybersecurity

"My main take away from this internship would be the incredible hands-on experience that I gained from this opportunity. The ability to expand my knowledge and expertise from this program will help me as I move forward in my career. It allowed me to create new connections and taught me so much about the ever-changing landscape of cybersecurity. This internship will absolutely have an influence on my future career and prospects because it serves as a foundational experience that I can build on as I grow through my career. I am truly grateful for the experience to be a part of such an enriching and educational program. I will truly never forget it."

Heliene Macaraeg, BS Cybersecurity

"My internship experience was incredibly enriching and impactful. It reinforced the importance of teamwork, resilience, and effective communication in a professional setting. Moving forward, I will carry forward the lessons learned from this experience throughout my remaining time at ODU and into my future professional endeavors. It has provided me with a solid foundation upon which to build my career and has instilled in me a sense of confidence and purpose that will guide me in all my future endeavors."

Daniel Smeltz, BS Cybersecurity

"I believe this internship pilot was an incredible opportunity for students to foster a better understanding on the process of creating a risk analysis. This is paralleled with conducting research to find secure methods to safeguard a business from the potential threats and vulnerabilities and delivering it in a platform that best conveys the solutions prospected to a client."

4. Collaborative Partnerships and Projects

COVA CCI is working with academic institutions from across the state on Cybersecurity Research projects previously mentioned in this report. Researchers are also working with business partners on potential federal funding opportunities and current research. Some of these partners include CivilianCyber, G2Ops, MIBE, MITRE, MI Technical Solutions, Port of Virginia,

Valor Cybersecurity, and Peregrine Technical Solutions.

All the research projects funded through COVA CCI are collaborative efforts with researchers from multiple institutions and/or business partners.

5. Correlated Economic Outcomes (Jobs and New Business Formation)

Cybersecurity Workforce Development - Internships. One goal of CCI and COVA CCI is to grow the cybersecurity workforce in the Commonwealth. COVA CCI is working with university researchers and business partners to achieve this goal. One of our industry partners, MI Technical Solutions, has been actively involved in supporting internships. Over the past five years they supported twelve (12) interns and hired 9 of 12, with two currently working as interns.

Interns supported & hired by MI Technical Solutions

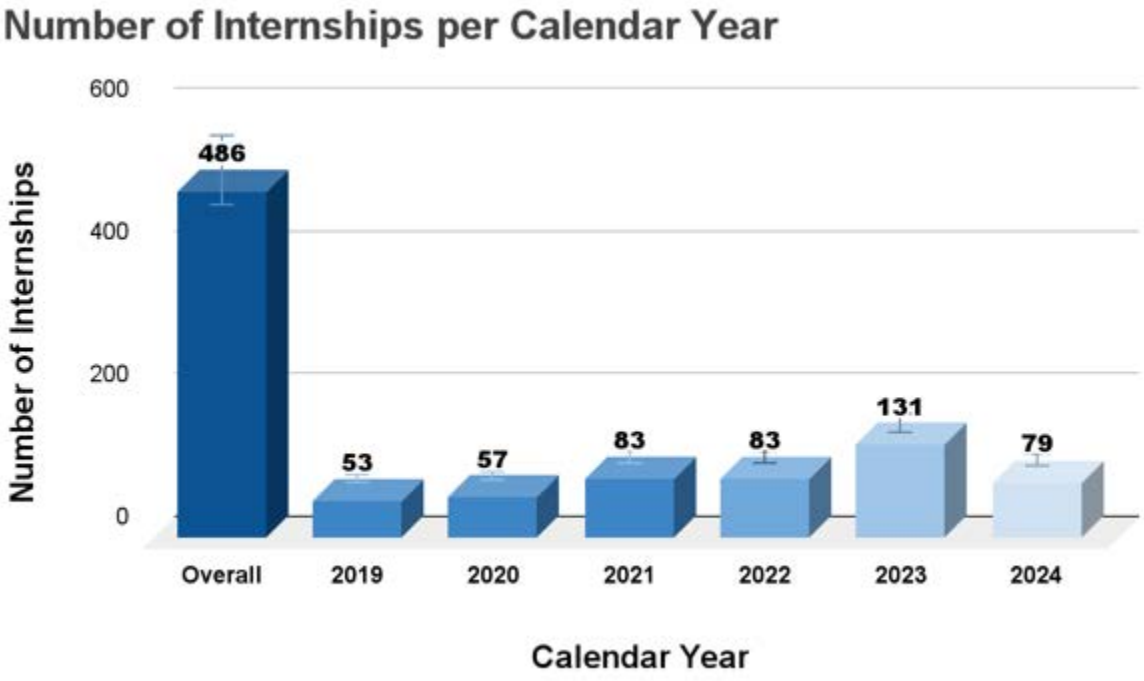
Title	School	Semester	Status
Network Engineer	University of Md University	Fall 18	Hired
Network Engineer Intern	Regent University	Fall 18	Hired
Network Engineer Intern	Old Dominion University	Spring 19	Hired
Network Engineer Intern	Old Dominion University	Spring 20	Hired
Network Engineer Intern	Old Dominion University	Spring 20	Hired
Network Engineer Intern	Old Dominion University	Fall 20	Hired
Cyber Intern	Old Dominion University	Sum 21	Hired
Network Engineer Intern	Old Dominion University	Fall 21	Hired
Cyber Intern	Christopher Newport	Spring 22	Hired
Cyber Intern	Christopher Newport	Spring 22	Not Hired
Aviation–Aerospace	Old Dominion University	Sum 24	Intern
Aviation–Aerospace	Old Dominion University	Sum 24	Intern

Michael Ihrig, President, MI Technical Solutions

"MI Technical Solutions has partnered with the Commonwealth STEM Industry Internship Program for the past 5 years. This partnership has not only significantly contributed to fostering a wealth of knowledge for the students but enhanced our business productivity. Having the students research emerging technologies assists our team stay abreast on the latest trends. Our partnership has been an important pipeline for sourcing and keeping talent in MITS."

Old Dominion University, with support from COVA CCI, conducted an analysis of the School of Cybersecurity internship program. The School of Cybersecurity requires its Bachelor of Science students to complete an internship as part of the cybersecurity curriculum. This is accomplished by completing CYSE 368, Internship Course. After gathering and analyzing the

data for the students who completed CYSE 368 since 2019, it was determined that 486 students completed an internship experience.



Student Workforce Development. Since its inception in 2020, COVA CCI supported 462 students in various programs listed in this report. These students worked as research assistants for research projects and participated in the undergraduate research and Innovate Cyber programs. All students developed and gained valuable workforce skills which they will use in their future careers.

A total of 95 students participated in COVA CCI Programs in Fall 2023 and Spring 2024, including Undergraduate Cybersecurity Research, Innovate Cyber Challenge, CyberExL, and the Cybersecurity Internship Clinic.

School	Total by Institution	UG Research	Innovate Cyber	CyberExL	Cyber Clinic
CNU	12	2	10		
GMU	4		4		
NSU	4	3		1	
NOVA CC	1		1		
ODU	50	18	18	6	8
Tidewater CC	1	1			
VSU	2		2		
VT	4		4		

Va Western CC	1		1		
UVA	2		2		
W&M	11	6	1	4	
Total	**95**	**30**	**43**	**11**	**8**

Undergraduate Research Program – A total of 112 students from seven institutions participated in this program since Spring 2020, with 30 students completing the program during Fall 2023 and Spring 2024 semesters.

School	Total	Spring 2024	Fall 2023	Spring 2023	Fall 2022	Spring 2022	Fall 2021	Fall 2020	Spring 2020
CNU	14		2	1	5			3	3
NSU	11	3			5	3			
ODU	62	7	11	11	5	6	12	5	5
Regent	1								1
TCC	3	1				1			1
VPCC	1					1			
W&M	20	3	3	4	5	2	3		
Total	**82**	**14**	**16**	**16**	**20**	**13**	**15**	**8**	**10**

Innovate Cyber Program – A total of 185 students from 18 institutions participated in this program since Spring 2020, with 43 students completing the program during the Spring 2024 semester.

School	Total by Institution	Spring 2024	Spring 2023	Spring 2022	Fall 2020	Spring 2020
CNU	26	10	2	2	5	7
ECPI	3					3
GMU	24	4	1	19		
Laurel Ridge CC	3		3			
NSU	8			5	1	2
NOVA CC	4	1		3		
ODU	80	18	31	12	10	9
Camp CC	3			2	1	
Va Peninsula CC	4			4		
Tidewater CC	9		1	3	3	2
VCU	1			1		
VMI	3		3			
VSU	2	2				
VT	5	4		1		
Va Western CC	1	1		1		
UVA	2	2				

W&M	5	1	4			1
Total	**185**	**43**	**45**	**53**	**20**	**24**

Graduate Student Experiential Learning Program (CyberExL) – A total of 64 students from four institutions participated in this program since Spring 2020, with 131 students completing the program during the Spring 2024 semester.

School	Total per Institution	Spring 2024	Spring 2023	Spring 2022	Spring 2021	Fall 2020	Spring 2020
CNU	1						1
NSU	12	1	5	4	2		
ODU	28	6	8	2	4	5	3
W&M	23	4	5	8	3	3	
Total	**64**	**11**	**18**	**14**	**9**	**8**	**4**

Cybersecurity Internship Clinic - Eight students completed the pilot of the Cybersecurity Internship Clinic during the Spring 2024 semester.

School	Total per Institution	Spring 2024
ODU	8	8
Total	**8**	**8**

Research Assistants – 123 students from multiple institutions at the Post Doctorate, Graduate, and Undergraduate levels. These students are supporting CCI/COVA CCI research projects/activities across multiple semesters/years.

Education Level	Total per Education Level
Post Doc	14
GRA	74
UG	38
Total	**126**

b. **Startup Companies.** A key indicator of achieving the goal of growing the cybersecurity business ecosystem in Virginia is the ability to create new cybersecurity businesses from work associated with CCI. We are working with entrepreneurial centers located within our region to support the work researchers and students are doing to develop potential business ideas. One example is the continued work that is being done to bring NetTech Warriors, a cybersecurity board game, to market.

NetTech Warriors.

As part of the CCI supported Arts and Design Collaboration program, Dr. Kevin Moberly, ODU, and his team, created a cybersecurity game – NetTech Warriors. This game is designed to be used by educators at the K-12 levels to teach students about cybersecurity through an interactive board game. This game has been tested at multiple conferences and at the Art of Cybersecurity exhibit held in the Taubman Museum of Art, Roanoke, Virginia, November 4-5, 2022. NetTech Warriors is still in the early stages of business development, but they plan to develop this game into a fully marketable prototype which can be turned into a commercialized business.

NetTech Warriors Game display.

NetTech Warriors game demonstration.

Dr. Kevin Moberly, Program Director, IDS Game Design, Development and Criticism Major, Old Dominion University

"To date, we have made a considerable amount of progress towards the commercialization of the NetTech Warriors board game we developed based on funding we received from a Commonwealth Cyber Initiative (CCI) Building Bridges grant. In Spring 2023, we met with the Strome Entrepreneurial Center at Old Dominion University about putting together a business canvas and marketing plan. We also conducted a considerable amount of market research as part of our ongoing efforts to secure additional grant funding for the project. We are currently in the process of locating and applying for other grants opportunities. In the meantime, our development team is working to fine tune the game. To that end, we have made it the focus of one of the student intern teams taking part in ODU's Game Design and Development's summer internship program. This team of interns is working to finalize the game mechanics, to produce additional art and malware cards, a formal rulebook, and to develop a website to showcase the project."

c. Economic Impact. During 2023, CCI commissioned RTI International to conduct an economic impact assessment of the Commonwealth Cyber Initiative.

CCI has brought in $192 million in federal and private sector funding, contributed to the creation of 2,517 jobs, helped generate $196 million in labor income, and added $367 million to Virginia's Gross Domestic Product.

Source: CCI 2024 Impact Update and 2030 Strategic Plan

This report showed the economic impact created by CCI and its four nodes during 2022 and 2023. It was determined that COVA CCI generated $6.7-$6.8 million annually in labor income, which provided between $600,000 and $700,000 in annual state and local tax revenue.

The results of the COVA CCI assessment for years 2022 and 2023 are below.

Coastal Region: Economic Activity Supported by CCI Coastal in Coastal Virginia in FY 2022

	Jobs	Labor Income	Value Add	Output	State and Local Government Revenues
Direct	45	$4.2 M	$4.9 M	$9.2 M	$0.2 M
Indirect	23	$1.4 M	$2.3 M	$4.3 M	$0.2 M
Induced	24	$1.2 M	$2.3 M	$4.0 M	$0.3 M
Total	**92**	**$ 6.8 M**	**$9.4 M**	**$17.5 M**	**$0.7 M**

Source: IMPLAN, RTI analysis of FY 2022 CCI spending data.
Note: Columns may not sum due to rounding.

Coastal Region: Economic Activity Supported by CCI Coastal in Coastal Virginia in FY 2023

	Jobs	Labor Income	Value Add	Output	State and Local Government Revenues
Direct	44	$4.1 M	$4.7 M	$9.0 M	$0.2 M
Indirect	23	$1.4 M	$2.3 M	$4.3 M	$0.2 M
Induced	24	$1.1 M	$2.3 M	$3.9 M	$0.3 M
Total	**90**	**$6.7 M**	**$9.3 M**	**$17.2 M**	**$0.6 M**

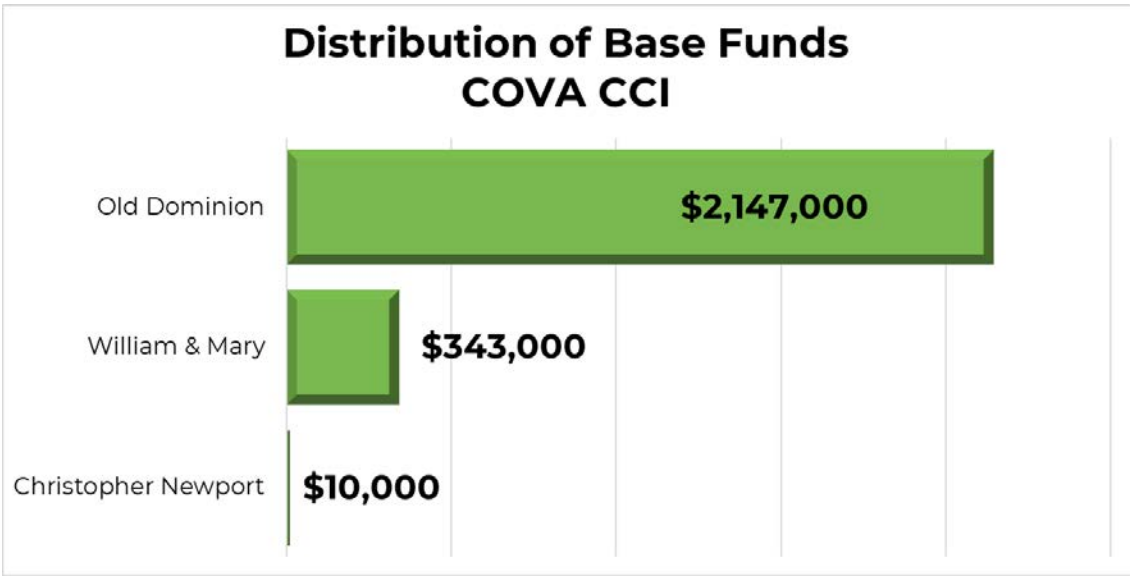
Source: IMPLAN, RTI analysis of FY 2023 CCI spending data.

Note: Columns may not sum due to rounding.

6. Geographic Distribution of Funds

Distribution of COVA CCI Allocated Funds across the node region.

Distribution of Funds Across the Node Region	
Institution	Amount
Christopher Newport University	$10,000
Old Dominion University *(Note 1)*	$2,147,000
William & Mary	$343,000
Total Committed Funds	**$2,500,000**
Note 1: Funding under ODU includes funds managed by the ODU Research Foundation, Virginia Space Grant Consortium (VSGC), Research Scientists Salary, and other Operations Costs	
Research Scientist Salaries	*$824,500*
Research Projects	*$400,000*
COVA Share	*$41,696*
COVA CCI Cyber Conference	*$12,343*
COVA CCI Staff Salaries	*$310,000*
VSGC Managed Projects Admin Support	*$5,000*
CoVA Cybersecurity Student Association	*$12,343*
UG Research (Includes payments to students from multiple institutions.)	*$78,300*
Innovate Cyber Challenge (Includes payments to students from multiple institutions.)	*$75,000*
Operations and other funds	*$188,031*
Total ODU Funds	*$2,147,000*



7. Other initiatives.

a. COVA CCI Cybersecurity Experiential & Research Conference (CybER Con.

COVA CCI hosted its 2nd Cybersecurity Experiential & Research Conference (CybER Con), September 21-22, 2023, at Old Dominion University. This conference highlighted multiple presentations focused on cybersecurity experiential learning programs and research. Keynote speakers included, Dr. Luiz DaSilva, Executive Director, Commonwealth Cyber Initiative, Randy Marchany, University Information Security Officer, Virginia Tech, Sandy Radesky, Associate Director for Vulnerability Management, CISA, and Renata Spinks, CEO of CyberSec International and former USMC senior executive.

To learn more about CybER Con visit the website - https://covacci.org/cybercon/.

COVA CCI CybER Con, September 21-22, 2023.

b. Coastal Virginia Cybersecurity Student Association.

CVCSA Cyber Forge - February 10-11, 2024

The Coastal Virginia Cybersecurity Student Association (CVCSA) hosted its 2nd Annual capture the flag event, known as Cyber Forge, at the Advance Technology Center, Tidewater Community College, Virginia Beach, February 10-11, 2024. Cyber Forge allowed students from across Virginia to hear from cybersecurity experts, participate in a Capture-the-Flag competition, and network with fellow students.

CVCSA and the Tidewater Community College TC4 ratify the CVCSA Charter.

As a part of its CoastalConnect initiative, CVCSA has unified all cyber clubs in Coastal Virginia into a regional association, significantly advancing the mission to establish a collaborative environment and facilitate resource sharing among member clubs. These clubs include Christopher Newport University, Norfolk State University, Old Dominion University, Regent University, Tidewater Community College, and William & Mary. By establishing connections with these educational institutions' cyber clubs, CVCSA aligns with CCI's

objective of developing a networked approach to innovation and talent development, enabling a coordinated effort to “supporting tomorrow's Cybersecurity experts. One-way CVCSA accomplished this was through a series of monthly speaking events where they brought in cybersecurity professionals to meet with and talk to students about their careers in cybersecurity.

CVCSA Lecture Series. The Coastal Virginia Cybersecurity Student Association (CVCSA) hosted four lecture series during the year. Cybersecurity professionals from various industry spoke about the career journey and what they do as a cybersecurity professional.

Due to the CVCSA leadership's work, they proposed and were accepted to lead an effort to expand this program across Virginia. This led to the creation of Virginia Cybersecurity Students (VCyS). Virginia Cybersecurity Students (VCyS) is a statewide association which is working on establishing 3 regional nodes like CVCSA across the commonwealth. These nodes include the Coastal Node, Central Node, Northern Node and Southwest Node. This expansion signifies CVCSA’s role in scaling up local initiatives to have a statewide impact. CVCSA's various events have reached over 700 unique participants.

These student led initiatives directly support CCI's mission by facilitating talent development, knowledge sharing, and networking, effectively bridging the gap between cyber students and industry.

To learn more about CVCSA and VCyS visit the COVA CCI Student Association Website - [https://covacci.org/cvcsa/.](https://covacci.org/cvcsa/)

c. Williams & Mary Center for Legal & Court Technology

Problematic Generative AI Panel Discussion

On February 9, 2024, COVA CCI and William & Mary's Law School, Center for Legal & Court Technology, co-hosted a symposium focused on Problematic Generative AI. Panelists representing Law, Government, Academia and Industry from the US, Canada and the United Kingdom gave their respective insights about these questions:

What is Generative AI and its limitations?
How is Generative AI being used and how are risks managed today?
Legal implications of Generative AI?
What remains to be done and how?

To learn more about the William & Mary Law School, Center for Legal & Court Technology visit their website - https://www.legaltechcenter.net/

Cybersecurity Newsletter: In addition to these symposiums, William and Mary Law School, Center for Legal & Court Technology, publishes a monthly "Cybersecurity Newsletter." This newsletter written by Daniel Shin, COVA CCI Research Scientist, William & Mary contains information and analysis on multiple legal issues related to cybersecurity litigation involving cybersecurity and cyber security-related topics, cyber security regulation and policy such as the White House 2023 National Cybersecurity Strategy, data breaches, cyber security issues affecting governmental bodies, including Virginia specific matters.

To see all the Cybersecurity Newsletters visit its website - https://www.legaltechcenter.net/ai-cyber/csnewsletter/.

d. Other events supported by COVA CCI.

COVA CCI hosted or supported other events during the year, including Undergraduate Research Showcases (Fall 23 and Spring 24), Innovate Cybersecurity Challenge Showcase and Pitch Event (April 2024) and the

Visit the [COVA CCI Events website] for more details regarding these events.

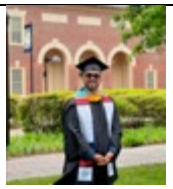
e. COVA CCI Moved. On November 16, 2023, COVA CCI official moved to its new location at the ODU Institute of Data Science, located in the Virginia Beach Town Center. This new facility is the home of COVA CCI and ODU School of Data Science. The facility will also support faculty from ODU School of Cybersecurity and VMASC.

Ribbon Cutting Ceremony - November 16, 2023

8. COVA CCI Node in the News

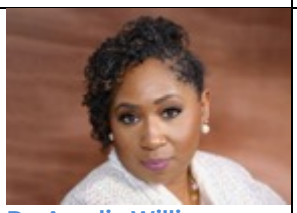
COVA CCI has been actively promoting the success of its various activities through local news sources. You can view these articles and others on the COVA CCI website – [News.]

[ODU Receives $2M in Federal Funding to Support Cybersecurity]



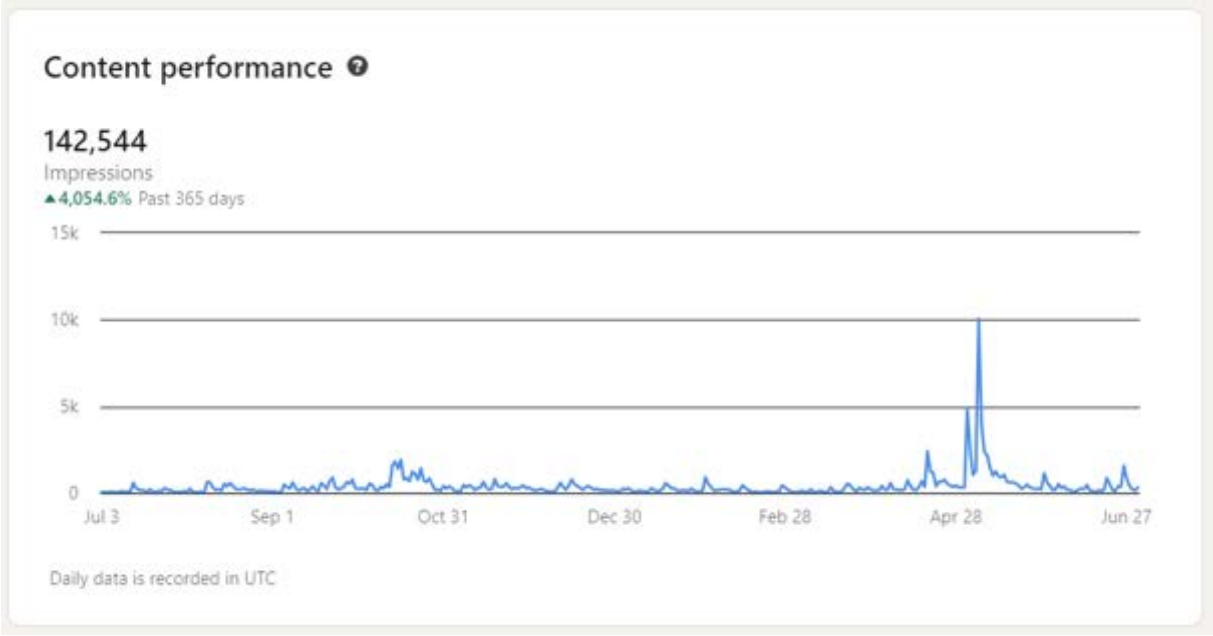
[From Kabul, Afghanistan to Virginia, ODU grad]

[CCI's Annual]

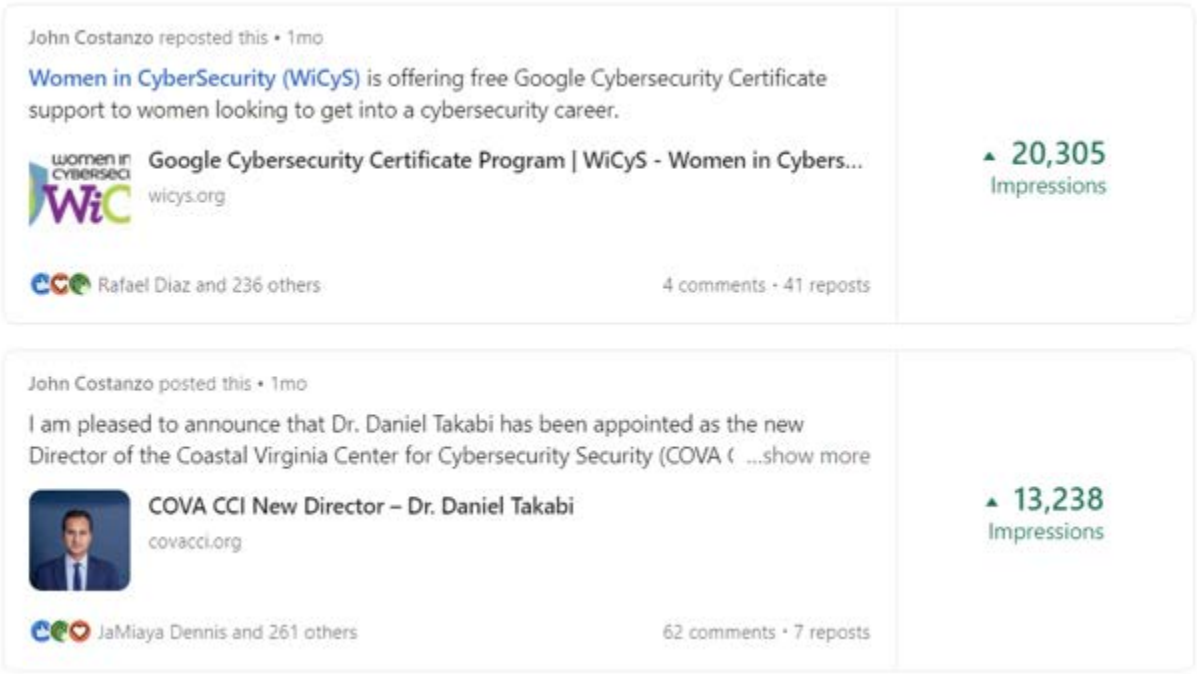
ODU News: COVA CCI Announces New Director: Daniel Takabi	for Offshore Wind Energy	walks the stage flying colors: Zobair Wali	Symposium is a hit with researchers and students
CCI presents Sachin Shetty of ODU with 2024 Impact Award	 Dr. Aurelia Williams, founding executive director of Norfolk State's Cybersecurity Complex, to be honored at Alumni Awards Dinner May 3.	Cyber Fusion 2024 Draws Students from 21 Commonwealth Colleges	Your personal data is political: W&M computer scientists find gaps in privacy practices of campaign websites.
ODU Names Kenneth J. Fridley as its Vice President for Research	ODU Class of 2023: Drew Brown Uses His Educational Journey to Inspire Others	Old Dominion University School of Data Science offers cutting cutting-edge space at the new Virginia Beach Institute of Data Science.	Christopher Newport University wins National Science Foundation Grant Cultivating Student-Industry Collaboration
Old Dominion University appoints Dr. Frank Liu as the Inaugural Director of the new School of Data Science	2023 COVA CCI CybER Conference	ODU and COVA CCI Hire additional cybersecurity faculty/researchers	ODU Awarded $1M to Help Small Va. Businesses Guard Against Cyberattacks

9. Social Media via LinkedIn

We use LinkedIn to post content related to cybersecurity trends, announcements, and other activities. Over the past 365 days (June 13, 2023 - June 30, 2024) there have been 142,544 impressions on our shared posts. The top two posts had over 33,000 impressions.



Top posts from the past year.



10. For additional information contact John Costanzo, Chief Administrative Officer, COVA CCI, jcostanz@odu.edu, or visit the COVA CCI website (https://covacci.org) and the Commonwealth Cyber Initiative website (https://cyberinitiative.org/).

COVA CCI Website
www.covacci.org