OHIO CYBER RANGE INSTITUTE

POWERED BY UNIVERSITY OF CINCINNATI

2025 ANNUAL REPORT

EXPAND HORIZONS

STRENGTHEN RESILIENCE

EMPOWER OHIO

Adjutant General's Department, State of Ohio

Department of Higher Education

Department of Education & Workforce

CyberOhio

Department of Administrative Services

Department of Public Safety

A LETTER FROM THE EXECUTIVE COMMITTEE

Almost 10 years ago, the Governor of Ohio tasked the Adjutant General to use the skill inherent in our agency and the Ohio National Guard to develop a program to help Ohio get better at cybersecurity. We formed the Ohio Cyber Collaboration Committee (OC3) bringing together the smartest people in Ohio from all walks of life to advise the TAG and the Governor of the best way ahead. The OC3 recommended a focus on cyber education/workforce development, and cyber protection, but immediately recognized that achieving those two goals would be impossible without a safe secure place to train cyber students and to conduct cyber exercises.

This realization led to the idea of creating the "Ohio Cyber Range." With the passage of Ohio House Bill 166, the ADJ in partnership with ODHE, DAS, DEW, DPS, and other partners in the OC3 began the process of developing a Cyber Range. In 2017 the University of Cincinnati was selected to run a demonstration project that would prove the value of the Ohio Cyber Range. At the end of the successful demonstration project, UC proposed the creation of the Ohio Cyber Range Institute to manage the Ohio Cyber Range on behalf of the State. The OCRI expanded from that beginning to include 19 Regional Programing Centers comprised of 25 institutions to help provide cyber education, training, and exercises throughout the state.

Today the OCRI provides the support and infrastructure to train up to 10,000 students in Ohio's High Schools, Career Tech, and Higher Education. It also supports cyber bootcamps and "capture the flag" exercises. It runs the largest non-DOD cyber training exercise to train and validate cyber teams from the Ohio Cyber Reserve. And with support from a grant from CISA, the OCRI conducts an extensive training program for local governments to improve their cyber posture.

The collaboration of so many Ohioans and organizations, strongly supported by our state leadership, has made Ohio a national leader in cybersecurity, improving and growing the cyber work force, helping state agencies and local governments improve their cyber maturity, and improving the digital safety of all Ohioans.

The OCRI 2025 Annual report documents these efforts and highlights the work of our many partners as Ohio strives to improve our cybersecurity readiness and protect the digital assets of our state.

MARK BELL
Chair, OCRI Executive Committee

CONTENTS

COVER PHOTO: Leaders across the state and university (left to right):

HAZEM SAID
Co-Director, OCRI; Director, School of Information Technology, UC

MARC CAHAY
Co-Director, OCRI; Director and Department Head of Electrical & Computer Engineering, UC

RICHARD HARKNETT
Co-Director, OCRI; Director, School of Public & International Affairs, UC

MARK BELL
OCRI Executive Committee Chair, Cybersecurity Outreach Coordinator, Ohio Adjutant General's Department

MATTHEW S. WOODRUFF
Brigadier General, Ohio Adjutant General

KIRK HERATH
Cybersecurity Strategic Advisor, Office of Ohio Governor

JANILLE S. STEARMER
Assistant Director at Ohio Homeland Security, Ohio Department of Public Safety

LISA HUFFMAN, PhD
Dean, College of Education, Criminal Justice, and Human Services, UC

HOLLY DRAKE
Chief Information Security Officer, State of Ohio

REBEKAH MICHAEL
Co-Director and Executive Staff Director, OCRI; UC

CHARLES SEE
Vice Chancellor, Ohio Department of Higher Education

MARC CAHAY

HAZEM SAID

RICHARD HARKNETT

BEKAH MICHAEL

OCRI LEADERSHIP 2025 REPORT

The OCRI Executive Staff are comprised of three different departments and schools/colleges, showing the multidisciplinary nature of cybersecurity.

YEAR IN REVIEW

The 2025 annual report highlights Ohio Cyber Range Institute's (OCRI) significant achievements over the past year. OCRI's initiatives have trained more than 45,000 Ohioans, further solidifying Ohio's position as a national leader in cybersecurity. In this year, we held the nation's largest non-military full scale cyber exercise, upgraded the Ohio Cyber Range to include more robust programming, increase delivery scale, and manage user lifecycle throughout their cyber journey, and trained over 12,000 public employees. We coordinated the efforts of the 19 Regional Programming Centers to deliver 19 cyber modules, 6 innovatively new programs, and held numerous workforce development bootcamps, CTFs, and training programs. The Ohio Cyber Range Institute leads the most collaborative cyber training ecosystem in the nation.

The OCRI's capacity to deliver world class full scale cyber exercises is unmatched. This is evidenced by this year's Ohio Cyber Guardian which conducted validation exercise for five teams simultaneously. The exercise included all scenarios and artifacts created and orchestrated by over 50 employees and volunteers who build real world environments to allow a train as you fight exercise. The inclusion of hardware in the loop and SCADA simulating critical infrastructure is critical to prepare responders for real threats in our state.

This year we made significant progress on the O-PCI program, delivering free cybersecurity training to public employees across Ohio's local government entities in whole of organization cyber resiliency. Over 200 governments have received the Cybersecurity Frontline First Aid Kit, more than 30 local government entities have received the O-PCI whole of organization training, and over 12,000 individual employees have engaged in training impacting more than 4 million Ohio residents who live within those governments for a more secure Ohio.

The OCRI ecosystem delivered cyber curriculum for not only high school and college but is filling a need to provide cybersecurity education to younger students with middle school and elementary school programs. Working with adopt a class and through efforts of the Past Foundation, students in elementary and middle school can learn through hands on labs and age-appropriate curriculum for careers that are increasing in sophistication. In continuing efforts to prepare college students for new careers and ever-expanding cyber terrain, the ecosystem taught students to secure satellites in an innovative aerospace cybersecurity program, and the digital forensics action group is expanding opportunities for students across the state. Additionally, workforce development opportunities expanded to anyone in the state with online asynchronous industry credentialed bootcamps.

Collaborative and strategic efforts in cybersecurity education, workforce, and economic development are more important than ever in this age of generative artificial intelligence. Our collective efforts in Ohio are leading the way in unlocking potential and securing the future.

Sincerely,

MARC CAHAY
HAZEM SAID
RICHARD HARKNETT
BEKAH MICHAEL

EMPOWERING OHIO:

OCRI ECOSYSTEM

REGIONAL PROGRAMMING CENTERS:
Statewide Cybersecurity Collaboration

The Ohio Cyber Range Institute (OCRI) ecosystem includes 19 Regional Programming Centers (RPCs), a collaborative network dedicated to advancing the mission. These centers play a vital role in promoting cybersecurity education, workforce development, and economic growth across Ohio through joint programming efforts.

OCRI-RPCs bring a unique blend of expertise, resources, and enthusiasm to support the organization's core missions. While some centers offer a broad spectrum of cybersecurity competencies, others focus on specialized areas or lead diffusion initiatives driven by OCRI's strategic goals. This collaborative framework currently includes 19 Regional Programming Centers, comprised of 25 different organizations.

Learn more about the RPC initiatives by visiting:
ohiocyberrangeinstitute.org/ecosystem

OCRI BY THE NUMBERS (2020-2025)

422
K-12 CLASSES

911
HIGHER-ED CLASSES

248
INSTRUCTORS

77
CYBER EXERCISES

63
BOOTCAMPS

69
CAMPS/SEMINARS

52
OHIO COUNTIES

36,516
CYBER CITIZEN USERS

Having joined the OCRI in 2024, Deniz Gurkan (pictured), Kent State University, along with Ruinian Li, Bowling Green State University, and James Walden, Miami University, received Lucite awards in recognition of joining the OCRI ecosystem.

THE FACES OF CYBERSECURITY

MEET THE EXPERTS FROM OCRI'S REGIONAL PROGRAMMING CENTERS

The Ohio Cyber Range Institute (OCRI) unites experts from universities and non-profits across Ohio to advance cybersecurity education and training through collaboration and shared expertise.

BOWLING GREEN STATE UNIVERSITY
"Collaborating with other cybersecurity educators across Ohio has been incredibly helpful. It feels like we are part of a larger organization making everything more efficient and impactful."
RUINIAN LI, PhD, Assistant Professor, Department of Computer Science

CEDARVILLE UNIVERSITY
"We are grateful for the partnership as the OCRI has come alongside us with meaningful support and encouragement as we seek to shape cybersecurity education in the academy."
SETH HAMMAN, PhD, Director, Professor of Cyber Operations and Computer Science

CIN-DAY CYBER AT SOCHE
"We're proud to advance cyber workforce development in Ohio, participating in initiatives for PK-16 students to prepare them for future cyber challenges."
CASSIE BARLOW, PhD, President at Strategic Ohio Council for Higher Education at SOCHE

CLEVELAND STATE UNIVERSITY/ CASE WESTERN RESERVE UNIVERSITY/IOT COLLABORATIVE
"My mission is to help CSU educators and students gain the access to cybersecurity opportunities in Ohio as well as the rest of the country."
HAODONG WANG, PhD, Associate Professor, Electrical Engineering and Computer Science Department

CUYAHOGA COMMUNITY COLLEGE
"Building these connections are critical to the success of our students and our State."
BILL WICHERT, Assistant Professor, Information Technology

KENT STATE UNIVERSITY
"The OCRI ecosystem enables collaboration across Ohio's diverse cybersecurity competencies, offering a valuable one-stop statewide platform for education and research."
DENIZ GURKAN, PhD, Professor, School of Engineering

LORAIN COUNTY COMMUNITY COLLEGE
"The OCRI support and networking have been essential to the growth of our cybersecurity program and the success of our students."
LARRY ATKINSON, Associate Professor

MIAMI UNIVERSITY
"Joining the OCRI ecosystem has been an inspiring experience—it's incredible to see the breadth of cybersecurity initiatives across Ohio's universities."
JAMES WALDEN, PhD, Director, Center for Cybersecurity

THE OHIO STATE UNIVERSITY
"Regularly connecting with all of the RPC liaisons is an opportunity to learn from each other, benefiting all students."
JULIA ARMSTRONG, PMP, Managing Director, Institute for Cybersecurity and Digital Trust

OHIO UNIVERSITY
"Interacting with OCRI-RPC educational institutions across Ohio, and learning about their cybersecurity activities has been truly a wonderful experience."
AVINASH KARANTH, PhD, Chair and Director, School of Electrical Engineering and Computer Science

OWENS COMMUNITY COLLEGE
"The OCRI ecosystem made cybersecurity experts around Ohio accessible, providing a wealth of knowledge that helps Owens Community College enhance our cybersecurity activities."
ALDRIN CHUA, Instructor, Computer Information Systems Department

PAST FOUNDATION
"With OCRI's support, we've expanded access to cybersecurity education across Central Ohio, and successfully integrated OCRI-developed curriculum into our Early IT Microschool, ensuring that students receive foundational, industry-relevant learning from day one."
KATHY D. WRIGHT, Director of Educator Experiences

RIO GRANDE COMMUNITY COLLEGE
"We're proud to be a Regional Programming Center of the Ohio Cyber Range Institute, supporting cybersecurity education, workforce development, and the communities we serve."
ALAN COOK, PhD, MIS Professor and Chair, Emerson Evans School of Business

SHAWNEE STATE UNIVERSITY
"Partnering with OCRI has strengthened Shawnee State's Information Security program, engaging students and expanding their career opportunities."
JASON WITHERELL, Associate Professor and Department Chair, Engineering Technologies

STARK STATE COLLEGE
"It's been a rewarding first year at Stark State College! Hosting the CTF helped connect with students and strengthen our program, while contributing to the OCRI EMC library has been equally fulfilling. I'm excited to keep building on this momentum."
BARRETT BUSCH, Instructor, Information Security

TIFFIN UNIVERSITY & FINDLAY PARTNERS
"Joining the Ohio Cyber Range Institute and attending my first remote Programming Center meeting was impressive. The unmatched expertise inspire me to collaborate on innovative solutions."
OWEN FRITZ, PhD Candidate, Asst. Dean of Technology & Drone Academy Director

UNIVERSITY OF AKRON
"The UA-RPC partnership has provided diverse cyber education activities, such as student outreach, cyber forensics challenges, and summer camps to inspire future cybersecurity professionals."
STAN SMITH, PhD, Professor, Cyber Forensics

UNIVERSITY OF DAYTON
"The OCRI ecosystem is a community of dedicated professionals who collaborate to enhance cybersecurity for students and protect Ohio's citizens."
GRANT NEELEY, PhD, Professor, Political Science and Director of the Center for Cybersecurity & Data Intelligence

GREATER HEIGHTS:
OHIO CYBER RANGE UPGRADE

"The Range now supports more simultaneous exercises, provides a faster and smoother experience for participants, and is better equipped to deliver complex, multi-team cyber events.

KEVIN MAMULA
Associate Director, Range and Cyber Exercises, OCRI

Greater capacity, performance, and security

This past spring, the Ohio Cyber Range (OCR) underwent a major infrastructure upgrade aimed at enhancing its performance, scalability, and security. As cybersecurity threats continue to evolve and the demand for hands-on cyber training grows, it is critical that the Range maintains state-of-the-art capabilities.

"This upgrade reflects our commitment to staying ahead of the curve and supporting the ever-growing community of educators, students, researchers, and professionals who rely on the Range for immersive cybersecurity education and simulation," said Sam Bricking, assistant director of the Ohio Cyber Range.

At the core of the upgrade is a significant enhancement to the OCR's physical infrastructure. New, higher-density compute nodes were added to dramatically increase processing power. These new nodes not only provide more CPU and memory resources per unit but also improve the overall efficiency and flexibility of our virtual environments. This allows for larger and more complex scenarios to be deployed with minimal latency and maximum reliability—critical for running realistic cyber exercises and simulations.

Accompanying the compute improvements is a major upgrade to OCR's storage and networking systems. The OCR transitioned to high-speed Non-Volatile Memory Express (NVMe) storage, which offers drastically improved read/write speeds compared to traditional storage solutions. This change significantly reduces data access latency, improves virtual machine (VM) performance, and supports faster provisioning of resources, enabling users to get up and run more quickly and efficiently.

On the networking side, the OCR quadrupled its internal bandwidth capacity from 100 gigabits to 400 gigabits, allowing for more concurrent users, higher throughput between services, and reduced bottlenecks during high-demand periods. Additionally, the north-south connectivity—the range's link to external networks—was upgraded from 10 gigabits to 50 gigabits. This ensures smoother interactions with remote users and partners, and provides the necessary bandwidth to support simultaneous connections from institutions across Ohio.

Beyond the physical infrastructure, this upgrade cycle also included a comprehensive refresh of our software ecosystem. All core applications were updated to their latest versions, bringing not only new features but also critical security patches and performance enhancements. These updates enable the Range to provide a broader set of tools and scenarios while improving the overall resilience and security of the environment.

Another major milestone was the introduction of a new login and authentication system. This system is a foundational step toward implementing full Single Sign-On (SSO) capabilities across the Range's collaborative institutions. By moving to this new method of access, OCR is laying the groundwork for seamless, secure, and user-friendly access for students and faculty from participating universities, community colleges, and training organizations. The improved authentication framework will simplify user management and enhance overall security by aligning with modern identity management best practices.

The impact of these upgrades is already being felt by OCR users, said Kevin Mamula, associate director of technology and cyber exercises. "The Range now supports more simultaneous exercises, provides a faster and smoother experience for participants, and is better equipped to deliver complex, multi-team cyber events. Whether it's a university running a semester-long cybersecurity course, a state agency conducting a red-team/blue-team exercise, or a nonprofit hosting a cyber camp for high school students, the upgraded infrastructure ensures that the Ohio Cyber Range can meet these diverse needs with speed and reliability."

As the team looks ahead, this upgrade positions the Ohio Cyber Range to continue serving as a cornerstone of cybersecurity education, research and cyber exercises in the state. These enhancements not only expand OCR's technical capacity but also reaffirms its mission: to provide a scalable, secure, and accessible platform for training the next generation of cybersecurity professionals. The OCR team is excited for the possibilities this upgrade unlocks and remains committed to continuous improvement as the field of cybersecurity evolves.

THE STAFF BEHIND THE OHIO CYBER RANGE

The stewards of the Ohio Cyber Range (OCR) are (left to right): Sam Bricking, OCR assistant director, range; Corey Powers, OCR analyst 3; Stefani Vestring, OCR analyst 1; Will Nguyen, OCR analyst 1; Bekah Littlepage, OCR analyst 2; Kevin Mamula, associate director, range and cyber exercises; and Eric Hansford, OCR analyst 2.

Their work includes configuring virtual machines, managing network simulations, ensuring system security, and trouble-shooting issues during exercises. They also develop custom scenarios, integrate threat intelligence, and monitor performance to ensure smooth user experiences. Their expertise in networking, virtualization, cybersecurity tools, and scripting allows them to replicate real-world cyber threats and defenses, making the cyber range a dynamic and effective training ground.

RANGE UPGRADES

INCREASE IN RAM BY
53%

INFRASTRUCTURE CAPACITY INCREASED
5 TIMES FASTER

EQUIPMENT AND SOFTWARE UPGRADES

ADDITIONAL TEAM MEMBERS HIRED TO HANDLE WORKFLOW

EXPANDING CAPACITY TO HOLD RED/BLUE CYBER EXERCISES FOR ALL

QUARTERLY EXERCISES CONSIDERED

"This upgrade reflects our commitment to staying ahead of the curve and supporting the ever-growing community of educators, students, researchers, and professionals who rely on the Range for immersive cybersecurity education and simulation.

SAM BRICKING
Assistant Director, Range, OCRI

NEW HORIZONS:

CYBER EXERCISES
Capture the Flag & Ohio Cyber Guardian

Cyber exercises are essential for building real-world cybersecurity skills through hands-on, scenario-based challenges. They help individuals and teams strengthen their ability to detect, respond to, and prevent cyber threats in a dynamic and collaborative environment.

FIRST-EVER STATEWIDE CAPTURE THE FLAG (CTF)

OCRI IGNITES STUDENT CYBER SKILLS AT COMPETITION

OCRI hosted its first statewide Capture the Flag (CTF) cyber competition on April 12, 2025, to spark student interest and build hands-on cybersecurity skills.

The competition welcomed K-12 and higher education students both remotely and at seven regional hosting sites across the state. In-person hosting sites, all a part of OCRI's Regional Programming Centers, included the University of Cincinnati, University of Akron, Cedarville University, Kent State University, The Ohio State University, Stark State College, and Shawnee State University.

Participants engaged in a series of challenges that tested their offensive and defensive cyber skills. From cracking passwords with Kali Linux to reverse-engineering binaries and analyzing network traffic, students tackled real-world scenarios using the Ohio Cyber Range platform. Categories included investigative problem-solving, encryption decoding, vulnerability identification, and more.

The competition concluded with a celebration of the top teams. Cedarville University's CU_Byte Defender claimed first place, followed by University of Cincinnati's Cyber@UC in second, and a combined team from The Ohio State University and Miami University—99P Labs—taking third place.

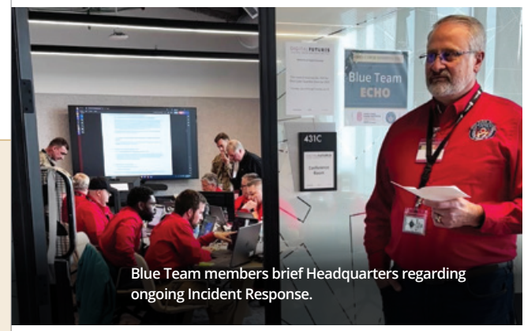
Cedarville University's team, CU_Byte Defender, emerged as the first-place winner of the OCRI inaugural statewide Capture The Flag event on April 12.

"The inaugural statewide Capture the Flag competition marked a bold step forward in cybersecurity education—uniting students across Ohio to decode, defend, and discover the future of digital resilience."

BEKAH MICHAEL
Co-Director & Executive Staff Director, OCRI


University of Cincinnati team Cyber@UC earned second place and The Ohio State University and Miami University combined team 99PLabs finished third. The day was filled with offensive and defensive cyber tactics, pizza and prizes!


Blue Team Lead, Johnathan Standley, provides an overview of ongoing operations for Distinguished Visitors.



Blue Team members brief Headquarters regarding ongoing Incident Response.


Green Team members Will Nguyen and Eric Hansford perform a function check on miniature mobile water treatment facility, a physical component to an otherwise virtual exercise.


Professor Richard Harknett, PhD, briefs The Ohio Adjutant General, Brigadier General Matthew S. Woodruff, on the nuances of incident response on critical infrastructure.

OHIO CYBER GUARDIAN 2025

OHIO'S PREMIER CYBERSECURITY EXERCISE RAISES THE BAR FOR READINESS

The 2025 Ohio Cyber Guardian exercise (OCG25), conducted by the Ohio Cyber Range Institute (OCRI), set a new standard for realism and collaboration in cybersecurity preparedness. Bringing together its largest and most diverse group of participants yet—including the Ohio Cyber Reserve (OhCR), National Guard, government agencies, educators, utilities, and private sector partners—OCG25 focused on replicating real-world threats.

"This wasn't just a test—it was a proving ground," said Christopher Mills, Enterprise Information Security Supervisor at the Ohio Department of Administrative Services and senior controller for the event. The exercise featured custom-built threat actors simulating a range of adversaries, from hacktivists and nation-states to insider threats and cybercriminals. These actors launched live, adaptive attacks designed to disrupt operations and test detection and response capabilities.

For the OhCR, OCG25 served as a critical validation event. Teams across Ohio responded as if facing a real crisis, coordinating under pressure with external stakeholders. The immersive scenario required full-spectrum incident response, including log analysis, network forensics, public communication, and coordination with law enforcement.

Participants didn't just react—they engaged. The exercise revealed both gaps and strengths in processes, collaboration, and response timing. The scale of OCG25 was unprecedented, with more teams, injects, and adversaries than ever before. Simulated environments ranged from small-town infrastructure to major metropolitan systems, emphasizing the importance of mutual support in defending critical assets.

"Every year, OCRI puts the Ohio Cyber Reserve through a challenging incident response exercise," said Craig Baker, OhCR Program Administrator. "The teams love it and come away better prepared to meet Ohio's cyber needs."
As OCRI looks to future iterations, OCG25 stands as a benchmark for high-fidelity, scenario-driven training. With increasing complexity and realism, the OCG series is evolving into a national model for cyber readiness.

5	150	14	30
# OF TEAMS PARTICIPATED	# OF PARTICIPANTS	# OF COUNTIES	# OF ORGANIZATIONS

Ohio Persistent Cyber Improvement team members (left to right) Whitney Olibo, Anna Sciarretti, and Peter Kobak travel across the state to provide cybersecurity training to local government entities. So far, Local governments serving over 4 million Ohioans have started the OPCI program..

STRENGTHENING RESILIENCE:

O-PCI: A Year of Impact

State of Ohio recognizes the OCRI's Ohio Persistent Cyber Improvement for local government program.

> **Local governments from across Ohio have already voluntarily secured their communities by completing O-PCI training; we are excited to support a greater amount of Ohio governments with the advent of this law.**
>
> **RICHARD HARKNETT, PhD**
> **Professor, School of Public and International Affairs; Director, Center for Cyber Strategy and Policy; Co-director, Ohio Cyber Range Institute**

In July 2025, Ohio Gov. Mike DeWine signed HB 96 into law, which named OCRI's Ohio Persistent Cyber Improvement (O-PCI) program as meeting the state's new requirements for local governments to implement a cybersecurity training program. This served as a recognition of the hard work of the Ohio Cyber Range Institute (OCRI) over the last year.

O-PCI: A YEAR OF IMPACT

One year after its May 2024 launch, O-PCI stands as the nation's only state-led, whole-of-organization cybersecurity training program for local government. The O-PCI program has served local governments in every corner of the state, including health districts, libraries, townships, and some of the largest cities and counties. Thousands of hours of training have upskilled Ohio's public service workforce, making Ohioans more secure.

Since its launch, more than 12,000 public employees have received O-PCI training as part of their local governments' partnership with OCRI. The involvement of all employees in an organization is key to O-PCI's value as a whole-of-organization training.

For example, the City of Akron is fully committed to cybersecurity, as more than 2,000 of the city's employees have received O-PCI training, leading to shifts in behavior and policy across the organization.

"Employees are asking more questions about cybersecurity, which shows the level of engagement on the ground level," says the Akron's IT Director, Darren Rozenek. "Leadership and IT staff are considering risk and how to minimize it in new ways."

O-PCI TRAINING STATS
IN 2024

30+	**# OF LOCAL GOVERNMENT ENTITIES (LGES) RECEIVING TRAINING**
12,000+	**# OF PUBLIC EMPLOYEES RECEIVING O-PCI TRAINING**
2,750,000+	**OHIO POPULATION LIVING WITHIN GOVERNMENTS RECEIVING TRAINING**
200+	**# OF GOVERNMENTS RECEIVING CFFAK**
4,000,000+	**OHIO POPULATION LIVING WITHIN GOVERNMENTS RECEIVING O-PCI AND CFFAK**

Akron incorporated O-PCI into its onboarding process, ensuring new employees promptly receive the training. Akron's success led it to be among the first local government entities to unlock Gateway 2 of O-PCI, which includes a tabletop exercise with a virtual component on the Ohio Cyber Range (dubbed a "TTX+"). Additionally, Akron will receive an Assist Mission from OCRI's key partner, the Ohio Cyber Reserve.

Learn more: *ohiocyberrangeinstitute.org/opci*

University of Dayton

UNIVERSITY OF DAYTON'S CONTRIBUTION:
Student Experience and Network Building

With thousands of local governments across Ohio, OCRI's ecosystem of Regional Programming Centers (RPCs) is crucial in bringing O-PCI training to more public servants. In 2025, OCRI leveraged the skills and resources of students at the University of Dayton's Center for Cybersecurity & Data Intelligence (CCDI). UD students conducted outreach and logistical preparations for launching O-PCI with local governments in the Dayton area. Grant Neeley, Director of CCDI and UD's RPC liaison, praised the students' work and the experience they gained. "Our partnership with O-PCI is network building that will benefit students' professional success after graduation."

OCRI LAUNCHES CYBERSECURITY FRONTLINE FIRST AID KIT

TO EMPOWER LOCAL GOVERNMENT LEADERS

In 2025, OCRI launched the Cybersecurity Frontline First Aid Kit. For local governments that are not ready to take on a whole-of-organization training, OCRI developed a resource that can be accessed by one or more employees with cybersecurity responsibilities. Called the Cybersecurity Frontline First Aid Kit (CFFAK), the new program enables leaders at Ohio's local governments to take immediate action, prior to enrolling the entirety of their staff into the O-PCI whole-of-organization training. To date, leaders in more than 200 local governments have reviewed some or all of the CFFAK. "The majority of public employees who review CFFAK tell us that they have, or plan to, implement immediate improvements to their government's cybersecurity posture," said Peter Kobak, associate director of the O-PCI program.

Learn more: *ohiocyberrangeinstitute.org/cffak*

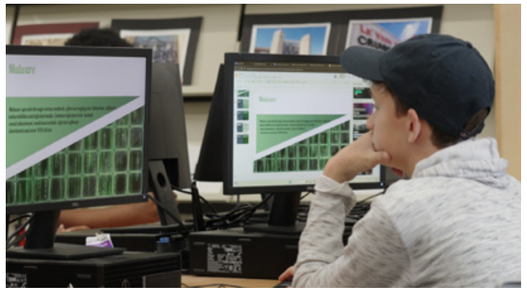
EDUCATION

Educational opportunities to prepare the next generation of cybersecurity experts take many forms—from college-level projects and conferences to interactive exercises for middle school students that introduce them to the field.

OHIO UNIVERSITY:
Innovates Satellite Cybersecurity Education
Ohio University's School of Electrical Engineering and Computer Science, led by H. Chenji and a team of experts, is pioneering a new approach to satellite and aerospace cybersecurity education. This initiative addresses the unique challenges of securing satellite systems, which differ significantly from traditional server-based systems. The program will develop educational materials for senior or early graduate courses, covering space cyber-Tactics, Techniques, and Procedures (TTPs). Students will learn about various cybersecurity aspects and participate in space-oriented hackathons. By integrating electrical and computer engineering concepts, Ohio University aims to equip students with the skills needed to tackle the cybersecurity challenges of satellite systems.

CEDARVILLE UNIVERSITY:
Seth Hamman Publishes Free Cybersecurity E-Book
Cedarville University's Seth Hamman, PhD, director of the Center for the Advancement of Cybersecurity and professor of cyber operations and computer science, published a new book that educates people about cyber threats and helps them fight cybercrime. With support from an OCRI grant, Invitation to Cybersecurity is an e-book that will be available for FREE on Cedarville's website. Printed copies will be available for purchase on Amazon.

Learn more: www.cedarville.edu/news



BOWLING GREEN STATE UNIVERSITY:
Advances K-12 Cybersecurity Education with Camps and Workshops
Bowling Green State University developed K-12 cybersecurity education materials and hosted camps for students and workshops for teachers.

BG CyberFuture spring and summer camps hosted 20 students in grades 5-7 and a summer camp of 20 students in grades 8-12 over four Saturday to learn cybersecurity from undergraduate and graduate student mentors. For high school teachers, Bowling Green hosted six educators for a EduCyber K-12 hybrid workshop that offered professional development hours and takeaway teaching resources.

PAST FOUNDATION:
Expands Cyber Curriculum to Prepare Ohio Students for Digital Futures
The PAST Foundation has developed new, standard-aligned cybersecurity modules for middle-grade and older students across Ohio. These engaging, age-appropriate materials introduce core cybersecurity concepts and are now part of the OCRI network.

Designed for use in classrooms, after school programs, and extended learning, the curriculum supports educators statewide. This initiative helps broaden access to cybersecurity education and aligns with OCRI's mission to strengthen Ohio's workforce and economy through innovative learning.

ADOPT A CLASS:
Cincinnati Fifth Graders Dive into Cybersecurity with Hands-On Learning
The Ohio Cyber Range Institute (OCRI) and UC's Office of Research partnered with Adopt A Class to introduce Cincinnati fifth graders to cybersecurity. Students from Cincinnati Public Schools' Academy of World Languages explored topics like cryptography, password safety, and cyber games through fun, interactive lessons.

The program wrapped up with a visit to UC's Digital Futures building, where students toured high-tech labs and experienced AR/VR demos. This initiative aims to spark early interest in tech careers and expand access to cybersecurity education for underserved communities.

Interested in mentoring? Contact Adopt A Class at info@aacmentors.org.

CYBER FLYERS

UNIVERSITY OF DAYTON:
CyberFlyers: Student-Led Group Boosts Cyber Awareness
The University of Dayton launched CyberFlyers, a student-led initiative to improve cybersecurity awareness among students—previously a gap in the university's training efforts. Supported by UD's Center for Cybersecurity & Data Intelligence, the group educates peers on cyber threats, safe practices, and career paths using platforms like Instagram and events such as "Flyerside Chats."

CyberFlyers also participated in the OCRI Capture-the-Flag competition and plan to expand their efforts in 2025–26 with a student-friendly cyber response guide and a phishing test environment. Their mission: build a cyber-aware campus, one student at a time.

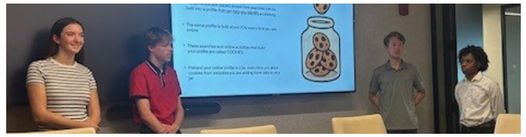
THE OHIO STATE UNIVERSITY:
OSU's CDME Team Wins National Award for Blockchain-Based Cyber Defense Research
A student research team from The Ohio State University's Center for Design and Manufacturing Excellence (CDME) earned the Analyst Award at CyberRECon 2025, hosted by U.S. Cyber Command. Their winning project explored how blockchain technology can secure defense-critical infrastructure against evolving cyber threats.

Led by Vimal Buck, senior researcher at OSU's CDME, and supported by faculty and experts, the five undergrads tackled real-world cyber threats as part of CyberRECon's national security challenge.

UNIVERSITY OF AKRON:
Cyber Forensics Education Expands with New Grants and Growing Student Engagement
The University of Akron is advancing its cyber forensics and workforce development through two new grants. These funds support innovative educational tools and modules focused on mobile forensics and digital evidence collection.

Students gain hands-on experience via the Ohio Cyber Range—a virtual environment to practice ethical hacking and penetration testing. This real-world training prepares them for careers in cybersecurity.

A new digital forensics group—featuring Lorain CCC, SOCHE, University of Dayton, and Stark State—supports local law enforcement. Lorain CCC's new lab helps police analyze phones quickly, while students get hands-on fieldwork.



INTERALLIANCE AND SOCHE:
Students Enrich Ohio's Cyber Club Toolkit
This summer, four high school interns at OCRI—Christopher Helling, Gloria Fritsch, Keon Russell, and Wil Hatfield—developed activities for a Cyber Club Toolkit aimed at helping Ohio high schools start cyber clubs. Guided by John Wiseman, Ohio Department of Education, Ethan Pickrell, OCRI graduate assistant, and Bekah Michael, OCRI co-director and executive staff director, they created activities like a Caesar cipher, internet cookies, and password cracking, and presented their work with a demo.

Nonprofits INTERalliance and SOCHE supported the effort, connecting students with IT internships. INTERalliance focuses on high schoolers, while SOCHE supports broader education and workforce development.

WORKFORCE DEVELOPMENT

The Ohio Cyber Range Institute (OCRI) is dedicated to developing Ohio's cybersecurity workforce by providing hands-on training and education. Its mission supports a statewide talent pipeline, preparing individuals with the skills needed to meet the growing demand for cybersecurity professionals.

CYBER AND THE LAW:
Navigating the Evolving Legal Landscape of Digital Security
Richard Harknett, PhD, spoke on national security and cyber strategy at the 2025 Cybersecurity Law Seminar, sponsored by the Ohio Division of Securities and OCRI.

Now in its second year of OCRI participation, the seminar explored how cybersecurity continues to shape legal frameworks and the relationship between cyber and legal policies. It offered legal professionals a deep dive into key issues at the intersection of cybersecurity and law. Topics included AI-related data privacy challenges, the dark web, third-party IT risks, cyber persistence, and legal implications of Federal Rule of Criminal Procedure 41 for electronic search and seizure. The event concluded with a panel discussion hosted by Al Klein, PhD, JD, assistant professor-educator at UC's School of Public and International Affairs.

CYBERSECURITY CAREERS IN FOCUS:
UC & Xavier Students Connect with Industry Leaders
University of Cincinnati and Xavier University students had the opportunity to explore cybersecurity careers in a networking event co-hosted by OCRI and Greater Cincinnati ISSA.

The event allowed students to explore diverse cybersecurity career paths in a fun, speed dating format as they connected with many professionals (Belcan, Cintas, The E.W. Scripps Company, CISA, Fifth Third Bank, Western & Southern Financial Group, Cincinnati Financial, Great American and more!) who volunteered their time to meet with students and guide them in making those cybersecurity career dreams come true.

KENT STATE UNIVERSITY AND BARBERTON HIGH SCHOOL:
Forge Innovative Cybersecurity Career Pathway Through Student-Run SOC Collaboration
A pioneering collaboration between Kent State University's student-run Security Operations Center (SOC) and Barberton High School's student-run SOC is actively building a direct career pathway for aspiring cybersecurity professionals, demonstrating a powerful model for workforce development.

The partnership recently saw Kent State representatives AJ Chiccarino, Jessie Pfauth, and Keenan McCray return to Barberton High School to share invaluable insights into the traits and skills essential for success within a Security Operations Center. Keenan graduated from Barberton High School's Cybersecurity Program in the spring 2024.

MIAMI UNIVERSITY CYBERSECURITY CLINIC:
Safeguards Community Organizations From Cyber Threats
The clinic partners with community organizations to assess cybersecurity risks, provide expert guidance, and implement cost-effective solutions.

Led by faculty and powered by student talent, the clinic helps organizations build resilience against cyber threats—so they can focus on serving their communities. Modeled after university clinics in law and medicine, the clinic trains students to work in faculty-led teams supporting nonprofits against threats like malicious hackers and cybercriminals.

The clinic conducts technical and nontechnical assessments, reviews policies, and recommends low-cost improvements—often supporting implementation. Students gain hands-on experience through classroom instruction and real-world client work, building essential skills for their projects.

"Working on a real system showed me how coursework directly applies to real-world challenges," said Drew Laiken, student team member.

CIN-DAY CYBER CELEBRATES 10 YEARS:
Of Advancing Cybersecurity Education and Workforce Development in Ohio
In partnership with higher education, government, and industry, SOCHE hosts the Cybersecurity Consortium of Southwestern Ohio (Cin-Day Cyber). For 10 years, this alliance has strengthened the Cincinnati-Dayton region as a hub for cybersecurity education, research, and workforce development. Aligned with NIST goals, Cin-Day Cyber serves as an educational and research resource and a catalyst for workforce growth. It promotes cybersecurity careers through events, workshops, and paid summer learning opportunities, while collaborating with schools and economic agencies to attract businesses and create jobs.

THE OHIO STATE UNIVERSITY FREE CYBERSECURITY COURSE: Empowers Ohio Small Businesses with Essential Online Training
Ohio small businesses can now access a free, online cybersecurity course designed to strengthen their digital defenses. Offered by The Ohio State University's Center for Design and Manufacturing Excellence and funded partly by the U.S. Small Business Administration, the course is open to all Ohio businesses with fewer than 500 employees.

Now in its second year, the self-paced, on-demand training takes just 3–4 hours to complete and introduces key cybersecurity practices. Topics include phishing prevention, cyber asset inventory, network security, and password management—providing a solid foundation for building a strong cybersecurity plan.

There's no deadline to enroll. Businesses simply register and gain immediate access to the course.

Learn more: osucybered.org

PAST FOUNDATION CYBERSECURITY BOOTCAMPS EXPAND ACROSS OHIO:
Giving Students Hands-On Experience and Graduation Credit
For the second year in a row, the PAST Foundation delivered immersive cybersecurity bootcamps for middle and high school students—thanks to support from the Ohio Cyber Range Institute (OCRI). This summer, camps were held at five partner sites (Upper Arlington City Schools, Grandview Heights Schools, Whitehall-Yearling High School, Groveport-Madison High School, and Muskingum Valley Educational Service Center), where students explored cybersecurity concepts and earned the Leadership Excellence credential, worth three graduation points in Ohio.

A standout feature this year was the inclusion of student interns who provided peer mentoring and technical support, creating a dynamic, layered learning environment. The program continues to grow, helping students build real-world skills and envision futures in cybersecurity.

INDONESIAN CYBER LEADERS VISIT OCRI:
Strengthening Global Cybersecurity Collaboration
A delegation of cybersecurity leaders from Indonesia visited the Ohio Cyber Range Institute (OCRI) to explore strategies for improving cybersecurity. Hosted by Richard Harknett, PhD, professor, School of Public and International Affairs (SPIA); director, Center for Cyber Strategy and Policy (CCSP); co-director, Ohio Cyber Range Institute (OCRI); and OCRI team members, the group learned about OCRI's mission to enhance cybersecurity through education, workforce development, and economic growth.

The visit, organized by the Greater Cincinnati World Affairs Council through the U.S. State Department's International Visitor Leadership Program, included discussions on the Ohio Persistent Cyber Improvement (O-PCI) program, which offers free training to local governments. The delegation also explored future collaboration opportunities to build a stronger global cyber workforce.

RESEARCH & DEVELOPMENT

In 2025, OCRI advanced cyber readiness across Ohio through cutting-edge research aimed at strengthening persistent cyber defense at all levels.

OCRI'S 2025 RESEARCH MILESTONES:

Advancing Cyber Training, Enhancing Realism, & Disseminating Key Findings

OCRI's 2025 research achievements included enhancing the Ohio Persistent Cyber Improvement program, advancing tabletop cyber training, and improving realism in the Ohio Cyber Guardian 2025 exercise. Collaborating with the O-PCI team, researchers deployed tools and field metrics to measure Local Government Entities' adoption of cyber resilience. A Defense Department grant supported cyber workforce development, engaging students in producing extensive reports, visual models, and the "Defend Forward" tabletop exercise. This role-based simulation immerses diverse sectors in navigating real-world cyber threats and proactive decision-making scenarios.

THE OHIO STATE UNIVERSITY:

Named National Center of Academic Excellence in Cyber Research

The National Security Agency designated The Ohio State University a National Center of Academic Excellence in Cyber Research (CAE-R) through 2030, recognizing its strength in doctoral-level cybersecurity research. OSU remains the only Ohio institution with this specific designation. In 2020, Ohio State founded the Institute for Cybersecurity and Digital Trust (ICDT) to unify its data security resources, strengthen partnerships, and prepare cybersecurity talent. Additional OCRI Regional Programming Centers with NSA cybersecurity designations include Cedarville University, Ohio University, Lorain County Community College, Stark State College, University of Dayton, and University of Cincinnati.

RESEARCHERS FROM UC'S SCHOOL OF INFORMATION TECHNOLOGY:

Investigate the Development of a Virtual Testbed for Cybersecurity Research

UC's Hazem Said, PhD, and researchers Joel Appiah, Taiwo Akinremi, and Rohit Mandalapu conducted a literature review and developed a virtual cybersecurity testbed to study threats to cyber-physical systems. They found cybersecurity testbeds are most common in the energy sector (48.4%) and education/research (21.4%), highlighting a need to expand into sectors like defense and transportation. Their study categorizes testbeds as physical, virtual, or hybrid, with the U.S. Department of Energy as the leading funder. Findings were published in IEEE Computer Society as a paper, book chapter, and conference presentation.

CHEST
CENTER FOR HARDWARE AND EMBEDDED SYSTEMS SECURITY AND TRUST

CHEST MARKS FIFTH YEAR:

$6.2 Million In New Research Projects

The Center for Hardware and Embedded Security Systems (CHEST), a major NSF Industry University Cooperative Research Center in UC's College of Engineering and Applied Science, marks its fifth year with 52 new research projects totaling $6.2 million. CHEST bridges university research and industry needs by focusing on security, assurance, and trust for hardware and embedded systems. It addresses challenges such as counterfeit detection, secure communication, and anti-tampering. Supported by industry-paid memberships, CHEST also develops a workforce for government and private sectors in hardware security.

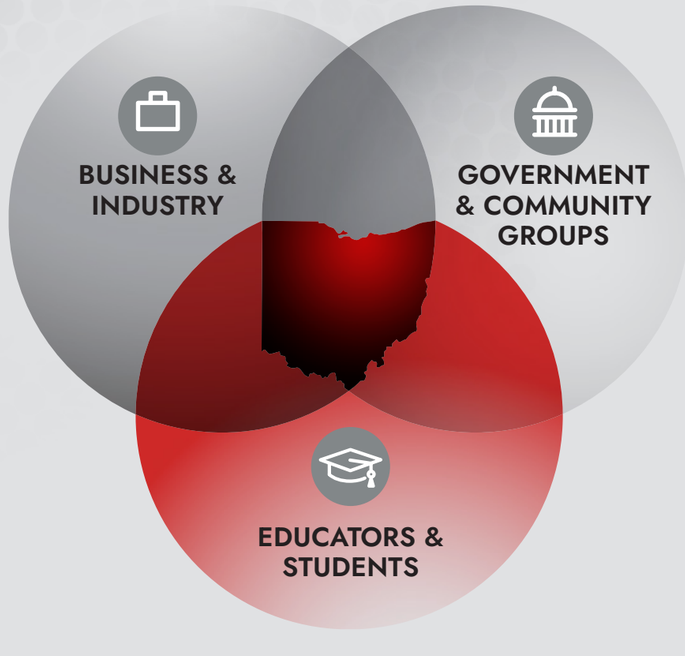
CSU STUDENTS ACCELERATE CYBERSECURITY:

GPU-Powered Math Library

Undergraduate researchers at Cleveland State University (CSU), led by Professor Haodong Wang, are developing a CUDA-powered math library to accelerate cybersecurity calculations. Funded by CSU, the project uses GPU technology to speed up large-number operations essential for encryption and decryption. The team focuses on optimizing Montgomery reduction—a key method in encryption—to run efficiently across hundreds of GPU cores. Their work could significantly enhance cryptographic processing speed. Research results will be shared at CSU's Undergraduate Summer Research Symposium, highlighting innovative student contributions to cybersecurity and computational efficiency.

GET INVOLVED

THE OHIO CYBER RANGE INSTITUTE (OCRI)



THE OCRI PROVIDES THE FOLLOWING OHIO RESOURCES AND SERVICES:

- The Ohio Cyber Range (OCR) virtual cloud environment
- Personnel and technical resources to host cyber exercises
- The Ohio Cyber Library containing cybersecurity educational content & resources for all audiences
- A central communication platform for cybersecurity educators across Ohio
- Custom cyber range environment configurations and support for educational programs, research opportunities, and other cybersecurity related activities
- Ohio Persistent Cyber Improvement - a cybersecurity training program tailored to local governments in Ohio

OHIO CYBER RANGE INSTITUTE
UNLOCKING POTENTIAL, SECURING THE FUTURE
POWERED BY UNIVERSITY OF CINCINNATI

CONTACT US TODAY

If your organization is interested in accessing the cybersecurity resources and services of the OCRI, or partnering with our research and platform services, including workforce programs and industry and government agency support, please follow the instructions listed at:

ohiocyberrangeinstitute.org/contact-us
or reach out to us at ocri@ucmail.uc.edu

COMMITTEE & BOARD

EXECUTIVE COMMITTEE

MARK BELL
OCRI Executive Committee Chair, Cybersecurity Outreach Coordinator, Ohio Adjutant General's Department

CHERYL RICE, PhD
OCRI Advisory Board Chair, Vice Chancellor, Ohio Department of Higher Education

CHARLES SEE
Vice Chancellor, Ohio Department of Higher Education

HOLLY DRAKE
Chief Information Security Officer, Ohio Department of Administrative Services

JANILLE S. STEARMER
Assistant Director at Ohio Homeland Security, Ohio Department of Public Safety

KIRK M. HERATH
Cybersecurity Strategic Advisor & Chair, CyberOhio; Office of Ohio Governor Mike DeWine

LEXIE MEADE
Deputy Director & Special Assistant, CyberOhio

JEREMY VARNER
Deputy Director, Division of CTE and Workforce, Ohio Department of Education and Workforce

ADVISORY BOARD

COURTNEY DeOREO
Consultant,
Northeast Ohio Cyber Consortium

DANNY HAYES
Information Technology Resource Manager,
Cincinnati Insurance Companies

DICK KERR
former VP, Cisco,
Northeast Ohio Cyber Consortium

PHILLIP MARCHAL
Teacher,
Loveland High School

GREG McCLELLAND
Cybersecurity Instructor,
Southwestern Career Academy

LENEE' PEZZANO
Senior Manager Resource and Partner Alignment,
JobsOhio

ERIC RIDDER
Deputy Chief Information Security Officer,
GE Aviation

JESS WALPOLE
President, Fortress

CHRIS ZELL
Vice President Cyber Analysis and Operations,
Dell

MEET THE OCRI TEAM

EXECUTIVE STAFF

HAZEM SAID, PhD
Co-Director, OCRI;
Professor and Director, School of Information Technology

RICHARD HARKNETT, PhD
Co-Director, OCRI; Professor and Director, School of Public & International Affairs; Chair, Center for Cyber Strategy & Policy

MARC CAHAY, PhD
Co-Director, OCRI;
Department Head, Department of Electrical & Computer Engineering

REBEKAH MICHAEL, MS
Co-Director & Executive Staff Director, OCRI; Associate Professor Educator, School of Information Technology

OPERATIONS STAFF

FRANCISCO "PANCHO" BARRAZA ALONZO
Program Coordinator

JUDY ASHTON
Marketing Coordinator

SAM BRICKING
Assistant Director, Range

DOUG DISBENNETT
Research Associate, O-PCI

STEPHANIE ELLIS
Program Director, Center for Cyber Strategy and Policy

ERIC HANSFORD
Range Analyst 2

MEGAN HOPPERTON
Assistant Director, Cyber Exercises

ANTHONY JONES-SCOTT
Instructional Designer, O-PCI

ALBERT KLEIN, JR., PhD, JD
Assistant Professor – Educator, A&S

PETER KOBAK
Associate Director, O-PCI

BEKAH LITTLEPAGE
Range Analyst 2

MICHAEL LOADENTHAL
Assistant Professor, Research, A&S

KEVIN MAMULA
Associate Director, Range and Cyber Exercises

RYAN MOORE
Associate Director, Education; Associate Professor-Educator, SoIT

ANNA MULLINGER
Graphic Designer

STEWART MUSTIN
Associate Director, RPC Engagement

WILL NGUYEN
Range Analyst 1

WHITNEY OLIBO
Cyber Training Program Coordinator, O-PCI

ANTHONY "TONY" PHILLIPS
Program Manager

COREY POWERS
Range Analyst 3

ANNA SCIARRETTI
Cyber Training Program Coordinator, O-PCI

ASHEQ SIDDIQUEE TANMOY
Research Associate, O-PCI

STEFANI VESTRING
Range Analyst 1

GLORIA YEOMANS
Research Associate, O-PCI

OHIO CYBER RANGE INSTITUTE

UNLOCKING POTENTIAL, SECURING THE FUTURE

POWERED BY
UNIVERSITY OF CINCINNATI

University of Cincinnati
Digital Futures - Secure Cyber Lab
3080 Exploration Avenue
Cincinnati, Ohio 45206

ohiocyberrangeinstitute.org