



OHIO CYBER  
RANGE INSTITUTE

# TOGETHER PROTECTING OHIO

2024 ANNUAL REPORT







# A LETTER FROM THE ADJUTANT GENERAL

## FELLOW OHIOANS,

In Ohio, the safety and security of our communities have always been paramount. Given the challenges we face in our daily lives, cybersecurity has become a critical component. It is imperative that we are vigilant and persistent in our defense to provide that cornerstone of cybersecurity for the safety of our citizens.

The Ohio Adjutant General's Office, in partnership with the Ohio Department of Higher Education, has been instrumental in the development and continued support of the Ohio Cyber Range Institute (OCRI). This institute, working alongside the University of Cincinnati and 25 other higher education institutions across Ohio, serves as a cornerstone of our state's cybersecurity strategy. The OCRI is dedicated to developing and enhancing the skills of Ohio's cybersecurity professionals, from high school students to seasoned experts, ensuring they are equipped to meet the challenges of today and tomorrow.

Much like the training ranges utilized by law enforcement and military personnel, OCRI provides an environment where our current and future cybersecurity professionals can sharpen their skills and stay ahead of emerging threats. Through its commitment to continuous improvement and innovation, OCRI ensures that Ohio remains a leader in the cybersecurity field on a national level.

The basis of our protection will require workforce development. We must continue to create and provide dynamic training. Our current and future workforce will depend on this training to build the capability to defend against increasing technological advancements in the cyber domain.

It is with great pride that I present the Ohio Cyber Range Institute's 2024 Annual Report. This report highlights the institute's ongoing efforts to strengthen Ohio's cybersecurity readiness and its dedication to protecting our state's digital future.

**JOHN C. HARRIS JR.**  
Major General  
The Adjutant General



**ON THE COVER**

Leaders across the state and university attend the OCRI Cybersecurity Education Symposium, October 13, 2023.

**From left to right:**

- Hazem Said** - Co-Director, OCRI; Director, School of Information Technology, 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
- Charles See** - Vice Chancellor, Ohio Department of Higher Education
- Rebekah Michael** - Co-Director and Executive Staff Director, OCRI; UC
- Cheryl Rice** - OCRI Advisory Chair; Vice Chancellor, Ohio Department of Higher Education
- Holly Drake** - Chief Information Security Officer, State of Ohio
- Kirk Herath** - Cybersecurity Strategic Advisor, Office of Ohio Governor
- Daren Arnold** - Deputy Cybersecurity Strategic Advisor, Innovate Ohio
- John Wiseman** - Education Program Specialist, Ohio Department of Education & Workforce
- Marc Cahay** - Co-Director, OCRI; Director and Department Head of Electrical & Computer Engineering, UC

## OCRI LEADERSHIP



## 2024 REPORT

### YEAR IN REVIEW

The 2024 annual report highlights Ohio Cyber Range Institute's significant achievements over the past year. OCRI's initiatives have impacted more than 30,000 Ohioans, further solidifying Ohio's position as a national leader in cybersecurity. This year, we launched the Ohio Persistent Cyber Improvement (O-PCI) program, delivering free cybersecurity training to public employees across Ohio's local government entities, with an initial focus on underserved rural areas.

The OCRI Regional Programming Centers (RPCs) have expanded to include 19 centers, with membership of 25 different institutions across the state. These RPCs play a vital role in delivering specialized training and education, contributing to the state's robust cybersecurity ecosystem. Additionally, OCRI played a key advisory role in the successful execution of Cyber Yankee 2024, a premier National Guard cyber exercise. The partnership between OCRI and the Ohio Cyber Reserve continued this year with the Ohio Cyber Guardian (OCG24) exercise, where OCRI experts designed, implemented original multi-day exercise event for professionals and evaluated responsiveness and readiness. The event is the nation's largest non-Department of Defense tactical-level Defensive Cyber Operations exercise.

OCRI's efforts in workforce development have also been significant, with bootcamp programs and partnerships with higher education institutions helping thousands of Ohioans gain essential cybersecurity skills and certifications.

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

As co-directors of the OCRI, we extend our heartfelt thanks to our state agency sponsors, the Governor, and the Lt. Governor's offices for their unwavering support. We are especially grateful to the Ohio Adjutant General, Major General John C. Harris, and Chancellor Mike Duffey, Ohio Department of Higher Education, for their continued support and partnership.

We encourage you to explore this report to see how OCRI's integrated model of education, workforce and economic development is enhancing Ohio's cybersecurity readiness and talent pool. From cyber exercises that elevate professional skills to educational modules and innovative public-private partnerships, OCRI's initiatives are making a significant impact.

What began as an ambitious idea has now evolved into a nationally recognized model of cybersecurity excellence. We look forward to continuing our efforts to unlock potential and secure the future for Ohio and the nation.

Sincerely,

**MARC CAHAY**

**RICHARD HARKNETT**

**BEKAH MICHAEL**

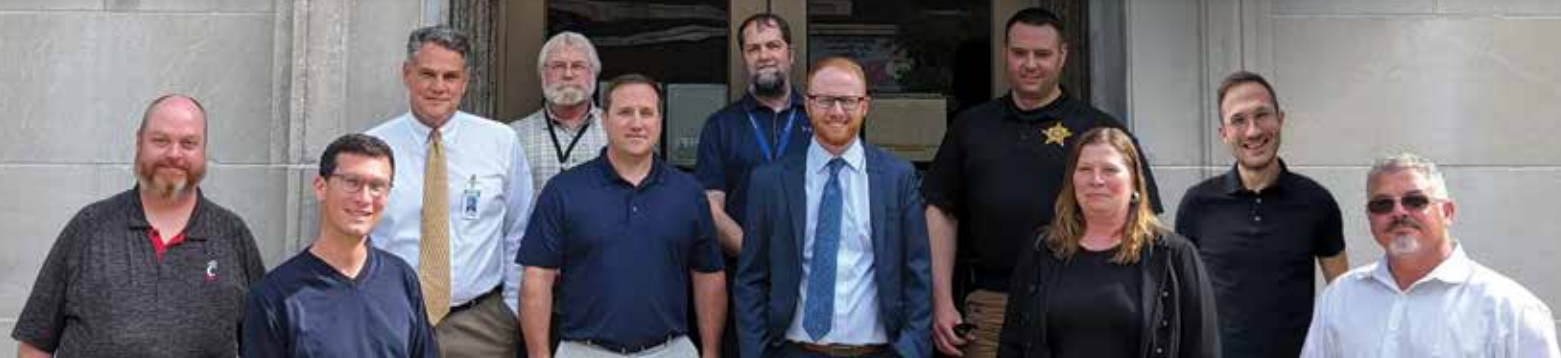
**HAZEM SAID**

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# O-PCI OHIO PERSISTENT CYBER IMPROVEMENT



## OCRI's Free Cybersecurity Training Program for Local Government Kicks Off

The Ohio Persistent Cyber Improvement (O-PCI) works to engage local governments across Ohio to strengthen cybersecurity defenses.

In May of 2024, the Ohio Persistent Cyber Improvement (O-PCI) program kicked off its statewide initiative to provide cybersecurity training for local government entities in Ohio.

O-PCI is a free cybersecurity education, planning and exercise program of the Ohio Cyber Range Institute (OCRI) and was established to support local governments across Ohio, with a particular emphasis on underserved rural areas. The program is funded thanks to strategic investments by the Ohio Homeland Security Advisory Cyber Subcommittee (HSAC-Cyber), chaired by officials from the Ohio Governor's Office and Ohio Homeland Security.

HSAC-Cyber, and the many State of Ohio agencies that make it up, invested federal funds from the Cybersecurity and Infrastructure Security Agency in order for local government entities to build and sustain the capacity to anticipate, adapt, withstand and, when necessary, recover from cyber aggression.

"The O-PCI program is truly unique," said Bekah Michael, OCRI executive staff director. "No other state in the nation is providing the breadth and depth of training that our Ohio local government entities are receiving."

"Gaining cybersecurity knowledge to defend our digital assets is an urgent mission and one that we must accomplish together," said Kirk Herath, cybersecurity strategic advisor for the Ohio governor's office and chairman of CyberOhio.

"Cybersecurity is the new frontline in our state and our nation's security, and we cannot afford to go at it alone," Herath said, "We must work together to defend our critical infrastructure and citizen data. That is the essential aim of the O-PCI program: to persistently and collectively raise the cybersecurity readiness of local governments across Ohio."

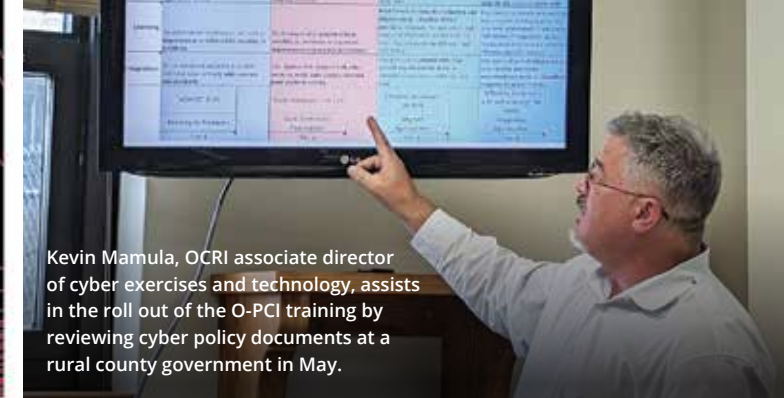
The O-PCI training blends online, hybrid and in-person modules that are tailored to local government entities of all sizes. Governments and their staff utilize a learning management system that guides them through three cybersecurity preparedness levels customized to their unique roles in the organization.

Ohio Cyber Range Institute staff delivers the education and training, then partners with the Ohio Cyber Reserve to conduct National Institute of Standards and Technology assessments and inventories. Both organizations then coordinate tabletop exercises, after-action reviews, and provide continuous mentorship and guidance to local entities.

The OCRI's Regional Programming Centers (RPCs), an ecosystem of non-profits and higher education institutions in Ohio, play a significant role in O-PCI's education component. The program leverages RPC talent and expertise to scale training delivery. When launching the first training, the University of Dayton RPC provided leadership on the content creation of Cyber Mindfulness curriculum.

The OCRI reached a milestone when its Ohio Persistent Cyber Improvement (O-PCI) program launched in May, providing FREE cybersecurity training to any local government entity in Ohio.

## CYBERSECURITY TRAINING ACROSS OHIO



Kevin Mamula, OCRI associate director of cyber exercises and technology, assists in the roll out of the O-PCI training by reviewing cyber policy documents at a rural county government in May.

MISSION: Implement cybersecurity training for local government entities across Ohio. O-PCI is funded and supported by the following organizations:



Peter Kobak, OCRI's associate director of O-PCI, made the visit to kick off and pilot the program in rural counties starting in May of 2024. The team answered questions and gave an overview of the training module prior to the training roll out.

Kobak, who has worked on the program since its inception in 2023, said it is designed to cater to individuals of all levels of expertise. "Whether this is the first time your local government is thinking about cybersecurity or you're in the trenches building a cybersecurity infrastructure already, we tailor the training to benefit you where you are."

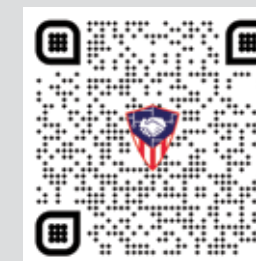
To date, the O-PCI cybersecurity training content is being delivered to more than 1,500 public employees in Ohio.

One local government's IT Director said he believes the O-PCI cybersecurity training is imperative for every local government.

"I pulled the city's Disaster Recovery Plan only to discover that IT was not included in the document and our Incident Response Plan/Anticipation and Resilience Plan and Continuity of Operations Plan do not exist at all," he said. "I have begun meeting with my stakeholders to generate corrected forms of these documents. This course helped remind me about planning for how we should operate once I get us back to maintenance mode."

Local government leadership can register for O-PCI training by visiting:

[ohiocyberinstitute.org/opci](https://ohiocyberinstitute.org/opci)



"Cybersecurity is the new frontline in our state and our nation's security, and we cannot afford to go at it alone. We must work together to defend our critical infrastructure and citizen data. That is the essential aim of the O-PCI program: to persistently and collectively raise the cybersecurity readiness of local governments across Ohio."



**KIRK HERATH**  
Cybersecurity Strategic Advisor for the Ohio Governor's Office and Chairman of CyberOhio.



# RECOGNITION NEAR AND FAR

“ Working to secure networks against attacks is a worldwide problem. The State Partnership Program allows us to work with the Serbians and help them improve their network cybersecurity, which is a win for all of us. Meeting and working with those of similar cyber backgrounds helps Serbia and Ohio. We can share our ideas, and they can do the same for us, which helps all of us in this fight against cyberattacks. ”



Craig W. Baker COL, USA (Ret), Program Administrator, Ohio Cyber Reserve (OhCR), The Adjutant General's Department



UC Professor Richard Harknett speaks at the NATO Cooperative Cyber Defence Centre of Excellence in Tallin, Estonia.



Members of South Carolina Mayor Daniel Rickenmann's team, as well as Jodi Salter and Dr. Carl Dahlman from the University of South Carolina, visit the OCRI team to learn from a role model of cybersecurity excellence.



Left and right: Members of the Serbian Armed Forces met with OCRI leaders to learn more about Ohio's cybersecurity initiatives.

## SAFEGUARDING CITIZENS AND INFRASTRUCTURE

The Ohio Cyber Range Institute often showcases its collaborative approach to improving security in cyberspace to local, national and global audiences.

### WATERLOO SECURITY DIALOGUE Waterloo, Canada

Richard Harknett, professor of Political Science and Director of the School of Public and International Affairs, Co-Director of the Ohio Cyber Range Institute, and Chair of the Center for Cyber Strategy and Policy at the University of Cincinnati, was an invited speaker in June to a gathering of Canadian government, industry, and academic cyber leaders, where he presented the OCRI's integrated model as a distinct approach to the overall cyber skill shortage. Over two days, he discussed how Canada might leverage a similar model to advance its goal of fostering nationwide cybersecurity collaboration.

### OCRI VISITS NATO Tallinn, Estonia

Richard Harknett, along with his two co-authors of Cyber Persistence Theory moderated a one-day workshop for a gathering of 120 NATO member country representatives and related partners, including industry, on how the logic of initiative persistence would translate into a standing operational element with the NATO alliance to manage the distinct security challenges of cyberspace.

### OCRI - A NATIONAL CYBERSECURITY MODEL South Carolina Visit

In April, the Ohio Cyber Range Institute hosted Columbia, South Carolina Mayor Daniel Rickenmann and his team, as well as Jodi Salter and Dr. Carl Dahlman from the University of South Carolina.

The OCRI discussed our statewide approach to cybersecurity that impacts every sector of society. Collaborating and learning from each other so this integrated approach facilitates the advancement of cybersecurity education, workforce and economic development advances everyone.

### SERBIAN MILITARY CYBER PROFESSIONALS COLLABORATE WITH OCRI AND OHIO CYBER ORGANIZATIONS

In March, the Ohio National Guard, the Ohio Cyber Reserve (OhCR) and the Ohio Cyber Range Institute (OCRI) welcomed five members of the Serbian Armed Forces as part of the State Partnership Program (SPP) that is designed to showcase Ohio's cybersecurity initiatives.

The visit, a part of the Ohio Cyber Cooperation Event in Columbus, Ohio, occurs at least twice a year and is a collaboration with cyber organizations across Ohio as a way to strengthen relationships, enhance cybersecurity abilities and thwart threats.

The Serbians were interested in learning about the Ohio Cyber Collaboration Committee (OC3) and OCRI's collaborative environment dedicated to developing stronger cybersecurity infrastructures and workforces. During their visit, the Serbians joined forces with

many Ohio cyber organizations to learn more about cybersecurity in Ohio and how to implement best practices in Serbia.

“We are eager to share how Ohio has become a leader in integrating public-private partnerships into solving our cybersecurity problems,” said Bekah Michael, executive staff director of the OCRI.

The SPP is a collaboration between the National Guard units of each state and nations from different parts of the world. Its goal is to enhance regional security, promote U.S. interests, and establish lasting relationships that foster interoperability and readiness. The Ohio National Guard is partnered with the Republic of Serbia and Hungary.

### WHITE HOUSE VISIT

The Ohio Cyber Range Institute (OCRI) welcomed a visit from the White House when Dr. Daniel Ragsdale, Deputy Assistant for Workforce and Education in the White House's Office of the National Cyber Director, attended a presentation on the Prospects of Regulating AI.

Ragsdale, along with former Ohio U.S. Senator Rob Portman and Chip Pickering, CEO of Incompas, learned more about the cybersecurity work of the OCRI and its national reputation. In July of 2023, the White House highlighted OCRI's work in its National Cyber Workforce and Education Strategy.

Ragsdale visited the OCRI at UC's Digital Futures building and was briefed on the cybersecurity work that the OCRI continues to do to scale the state's ecosystem and further its impact on education, workforce, and economic development across Ohio.





# CYBER EXERCISES



Exercise participants, known as Blue Teams, strategize to conduct cyber incident response at OCG24.



The exercise control team, known as White Cell, manages the OCG24 exercise operations.



The Ohio Adjutant General, Major General John C. Harris, speaks to attendees of the OCG24 Distinguished Visitors' Day.



## OHIO CYBER GUARDIAN: Blue Teams triumph at nation's largest non-Department of Defense (DOD) exercise.

### OHIO CYBER GUARDIAN

To continue its mission of advancing Ohio's cybersecurity preparedness, the Ohio Cyber Range Institute (OCRI) hosted its annual Ohio Cyber Guardian exercise in July 2024.

Ohio Cyber Guardian is the nation's largest non-Department of Defense (DoD) tactical-level Defensive Cyber Operations (DCO) exercise, focused within Ohio. The exercise is essential for assessing the readiness and training of the Ohio Cyber Reserve (OhCR) as they prepare to respond to significant cyber incidents targeting Critical Infrastructure and Key Resources (CIKR). Now in its third year, Ohio Cyber Guardian has consistently set new standards in cybersecurity preparedness.

The Ohio Cyber Guardian 2024 (OCG24) exercise, in partnership with University of Cincinnati, took place at The Ohio State University, one of 19 members of the OCRI's Regional Programming Centers whose partnership furthers the OCRI

statewide advancement of cybersecurity education and training.

This year, OCRI's contribution to cybersecurity exercises extended beyond Ohio's borders. In addition to organizing the Ohio Cyber Guardian exercise, OCRI played an advisory role in Cyber Yankee 2024, a New England-based cyber exercise held in Massachusetts. Cyber Yankee, similar to Ohio Cyber Guardian, brought together local, state, and federal agencies, as well as military personnel, to simulate a coordinated response to a large-scale cyber incident. OCRI's expertise was instrumental in guiding the planning and execution of this exercise, ensuring that it met the rigorous standards required for effective cybersecurity training.

Participants in OCG24 praised the training for its realism and the invaluable hands-on experience it provided. One attendee noted, "The training at OCG24 was incredibly valuable. It offered us

a unique opportunity to hone our skills in a real-world setting, and the lessons we learned here will be crucial in our ongoing efforts to protect critical infrastructure."

The success of OCG24, coupled with OCRI's advisory role in Cyber Yankee 2024, underscores OCRI's commitment to enhancing cybersecurity preparedness at both the state and national levels. As these exercises continue to grow in scope and impact, they reinforce Ohio's position as a leader in cybersecurity training and readiness.



UC Professor Richard Harknett, co-director of the OCRI, leads a tour of Blue Team activities as part of OCG24 Distinguished Visitors' Day at The Ohio State University.



Cincinnati Chapter of Information Systems Security Association (ISSA) sponsored a capture the flag event at UC's Digital Futures Building that paired industry professionals with students for real-world cybersecurity experience.

### CAPTURE THE FLAG ACTIVITY

Capture the Flag (CTF) is among the many cyber exercises hosted by the Ohio Cyber Range Institute (OCRI). Teams must work together to create plans, assign roles, problem solve and execute strategies to defend their own flag and capture the other team's. The competitive exercise helps participants develop practical cybersecurity skills by exposing them to challenges and out-of-the-box thinking to find solutions.

In February, the Greater Cincinnati Information Systems Security Association (ISSA) participated in its first OCRI CTF

event at UC's Digital Futures building. Teams of students and mentors tackled an immersive cyberattack simulation, testing their expertise in different security domains. Teams enjoyed the opportunities to leverage advanced tools and techniques to analyze vulnerabilities. An open forum allowed teams to share experiences and approaches to the day's many cybersecurity challenges.

"Our chapter is bringing the cyber community together one day at a time," said Cole Ciambro, local ISSA chapter member and field sales director at Ohio Valley SecurityScorecard.



### CYBER YANKEE: BUILDING MILITARY CYBER CAPABILITIES

Cyber Yankee is a highly regarded and expansive cyber exercise, recognized for its scale and strategic importance within the U.S. military community. This event brought together cyber warriors from the National Guard and Reserve forces, including the Army, Navy, Air Force, Marine Corps, and Coast Guard, and foreign Military partners for focused cyber-centric training designed to enhance military cyber capabilities.

In May, the Ohio Cyber Range Institute participated in this premier regional cyber training event, which united defense, state, and federal agencies, alongside key utility companies, to practice and refine best practices in prevention and response. During the exercise, Megan Hopperton, OCRI program manager, was acknowledged for her exceptional contribution and excellence in the cyber intelligence discipline.

Since its inception in 2015, Cyber Yankee has been dedicated to safeguarding critical infrastructure and key resources that directly affect the American public.

### FEMA COMMUNITY CYBER GAME TEACHES PREPAREDNESS SKILLS

The Ohio Cyber Range Institute (OCRI), with the help of the Federal Emergency Management Agency (FEMA), used a new drill over the summer to gain experience in dealing with the complications of a cyberattack.

The drill is called FEMA Cyber Ready Community Game and plays out like a board game. It groups team members who "worked" for various local government and private sector businesses prepare to address cybersecurity issues and the steps they would take to mitigate such threats.

"This is a FEMA tabletop exercise that we're experimenting with, but it's additional knowledge to add to our arsenal," Bekah Michael, OCRI executive staff director, said.

In the game, team members assumed various roles and responsibilities in making a cyber secure and sustainable decision to ensure the continuity of critical business services.

"So typically, the goal for players is to get firsthand skills on cyber readiness using real-life case studies of four government/public service entities," said Prosper Torny, who led the OCRI drill like a cyber chess game against hackers. Torny is a graduate student in the School of Public and International Affairs who worked on research for OCRI over the summer.

"The goal," Torny said, "is to take the best defensive position with available resources then evaluate the results of the decisions made early in the process."



Prosper Torny, MPA '25, leads a tabletop cybersecurity exercise



# OCRI ECOSYSTEM

## REGIONAL PROGRAMMING CENTERS: Statewide Cybersecurity Collaboration

The Ohio Cyber Range Institute (OCRI) ecosystem is strengthened by its Regional Programming Centers (RPCs), a collaborative network dedicated to advancing the Institute's 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:

[ohiocyberangeinstitute.org/ecosystem](https://ohiocyberangeinstitute.org/ecosystem)

## THREE INSTITUTIONS OF HIGHER EDUCATION JOIN THE OCRI as Regional Programming Centers



The OCRI welcomed three universities as new Regional Programming Centers (RPCs). Bowling Green State University (BGSU), Kent State University and Miami University joined OCRI's cybersecurity ecosystem in 2024, bringing the total number of RPCs collaborating in Ohio to advance cybersecurity education, workforce development and economic development to 19.



## OCRI BY THE NUMBERS

HIGHER ED CLASSES	796
K-12 CLASSES	360
BOOTCAMPS	59
CYBER EXERCISES	77
CAMPS & SEMINARS	69
CYBER CITIZENS	30,839
INSTRUCTORS	239

## REGIONAL PROGRAMMING CENTERS

- Bowling Green State University
- Cedarville University
- CinDay Cyber at SOCHE
- Cuyahoga Community College
- IoT Collaborative: Cleveland State University and Case Western Reserve University
- Kent State University
- Lorain County Community College
- Miami University
- Northwest Ohio Cyber Collaborative: University of Findlay/Tiffin University
- Ohio University
- Owens Community College
- PAST Foundation
- Shawnee State University
- Stark State College
- The Ohio State University
- University of Akron
- University of Dayton
- University of Cincinnati
- University of Rio Grande



# WORKFORCE DEVELOPMENT

## BOOTCAMPS: Central to Educational and Workforce Development

In partnership with Ohio Gov. Mike DeWine's Office of Workforce Transformation, the Ohio Cyber Range Institute (OCRI) offers bootcamps to provide Ohio's workforce with more advanced skills through additional education and training.

Bootcamps are FREE courses available to unemployed and underemployed Ohioans through Ohio's Individual Microcredential Assistance Program (IMAP).

IMAP helps Ohioans participate in a training program to receive a credential

at no cost. IMAP training providers will cover all tuition, fees, and additional costs to help you learn new skills and earn a credential that can lead to a good job.

Through OCRI funding, grants and the TechCred incumbent worker training program, these Bootcamps courses are also offered for free or at a discount to community members. The ability to join a bootcamp at no charge allows adults from any background to test whether or not they have interest in the field. The courses allow enrollees to have access to



**CARLA JENKINS,**  
Spring 2024 graduate of Cuyahoga Community College (Tri-C)

I am reskilling myself into data science and UC's free Excel training bootcamp helped me a lot. I want to thank you for doing these courses.

**Microsoft Excel Bootcamp Training Participant**

industry mentors and advisors, university faculty, and university students and also have flexibility in completing coursework through an asynchronous online model.

Many RPCs in our ecosystem offer bootcamp courses for students and teachers that foster greater cybersecurity knowledge and deliver skills in areas such as cryptography, phishing, social engineering, password and email security, digital forensics, and basic programming activities with robots and industry recognized certification credentials. The following RPCs delivered bootcamp programming:



**Shawnee State University:** Offered free Ethical Hacking Essentials, a one-week public bootcamp for ages 17 and up. Hosted Bear Tracks Residential Summer Program with 15 recent high school graduates; two students received CompTia A+ certification; several others passed two sections of testing.

Approved as an EC-Council testing center, allowing for Ethical Hacking Essentials testing that can only be achieved through an EC-Council testing center.



Vimal Buck, OSU CDME industrial cybersecurity director, leads the pilot program.



**The Ohio State University:** Received a \$1 million SBA grant to improve Ohio small businesses' cybersecurity. It's one of six recipients awarded under the SBA's Cybersecurity for Small Businesses Pilot Program. Ohio State's Center for Design and Manufacturing Excellence (CDME) will lead a team to deliver cybersecurity training and support, focusing on the manufacturing sector. The program will develop online courses to help small businesses identify threats, respond to cybercrimes, and build resilient infrastructure. Collaborators include CyberOhio, the Ohio Cyber Collaboration Committee (OC3), the Ohio Cyber Range Institute (OCRI), and the Ohio Chamber of Commerce.



Left to right: Kirk Herath, Janille Stearmer, Kevin Mamula, Professor Mark Visger, Professor Dakota Rudesill.

### CYBER LAW

The Ohio Cyber Range Institute (OCRI) is proud to be part of a statewide cybersecurity legal seminar in partnership with the Ohio Department of Commerce Division of Securities.

OCRI staffers Kevin Mamula, associate director of Cyber Exercises & Technology, and Al Klein, PhD, assistant professor-educator at University of Cincinnati School of Public and International Affairs, shared their cybersecurity expertise at the event.

More than 40 public sector attorneys from across Ohio attended to learn about cybersecurity frameworks, guidelines, and threats.

This was a Continuing Legal Education (CLE) Seminar on Cybersecurity Law for attorneys employed by the State of Ohio. The purpose was to provide legal experts with a background in cybersecurity fundamentals, cyber issues in our state government and how these are handled, as well as cybersecurity law at the federal and state levels.

OCRI was a co-sponsor with the Ohio Department of Commerce, Division of Securities. Thank you Roger L. Patrick, Jr., Division Counsel, for inviting OCRI in to share our knowledge.

### UC CYBERSECURITY EXPERTS PRESENT BOOTCAMP ON CYBER EDUCATION TO PHILIPPINE OFFICIALS

A group of 19 Philippine cyber defense professionals participated in cybersecurity training as part of an eight-week program between the University of Cincinnati (UC) and the University of Cordilleras in the Philippines.

The Securing the Digital Domain Initiative is an education program supported by the Philippines as part of the Foreign Scholarship and Training Program under the Commission on Higher Education (CHED).

The interdisciplinary training program is eight weeks with cybersecurity experts across several UC colleges, all working toward a goal of preparing military and government participants to obtain CompTIA Security+ certification. The program is seven weeks of online

training with the eighth and final week in September spent on the UC campus. While in Ohio, participants received direct tutoring to prepare for the exam and also completed a seminar on cyber strategy and policy.

Gregory Winger, assistant professor of political science in UC's School of International and Public Affairs and a faculty fellow at UC's Center for Cyber Strategy and Policy, oversees the training program. Winger, a former U.S. Fulbright Scholar to the Philippines, said the interdisciplinary training program takes a whole-of-nation approach to cybersecurity.

"The Securing the Digital Domain Initiative is the outgrowth of continuing efforts to strengthen bilateral cooperation in cybersecurity and education," Winger said.

### UC REDESIGNATED A NATIONAL CENTER OF ACADEMIC EXCELLENCE IN CYBER DEFENSE BY THE NSA

In 2023, the University of Cincinnati was redesignated by the NSA as a National Center of Academic Excellence in Cyber Defense (CAE-CD) for another five years, extending its designation until 2028. UC was first designated as a CAE-CD in 2016 and also holds an additional NSA designation as a Center of Academic Excellence in Cyber Operations (CAE-CO). This dual recognition places UC among a select group of institutions with both distinctions.

The redesignation allows UC to qualify for various NSA and NSF grants each year. For example, the current Scholarship for Service (SFS) grant was secured due to these prestigious designations. This recognition also enables UC to collaborate with other CAE institutions in the region, fostering research and educational partnerships. One notable outcome of these collaborative efforts is the establishment of the Ohio Cyber Range Institute.



Gregory Winger, assistant professor of political science in UC's School of International and Public Affairs, leads a bootcamp training session with members of a Philippine cybersecurity delegation.



# EDUCATION



Jacob Persic, Braiden Guy, and Zackary Pantchev receive the award for best in the Cloud/Infrastructure



## STUDENT SPOTLIGHT

**REBEKAH (BEKAH) LITTLEPAGE**, a University of Cincinnati alumna, leveraged the NSF Scholarship for Service to excel in cybersecurity at the Department of Justice. Her dual majors in IT and Public Affairs integrated technical and policy expertise. Littlepage's path highlights the Ohio Cyber Range Institute's role in shaping future cybersecurity leaders.

## EMPOWERING MINDS

Educational opportunities to prepare the next generation of experts to defend against growing digital threats come in several forms, from college projects and conferences to exercises for middle schoolers that teach about the field of cybersecurity.

### IT EXPO

The annual IT Expo is a free public event hosted by the School of Information Technology at the University of Cincinnati that celebrates and showcases innovation in Information Technology. Attendees can explore projects covering topics such as cloud solutions, cybersecurity, application development, and more. These projects are created by the senior class of the Bachelor of Science in Information

Technology and Cybersecurity programs, Master of Science in Information Technology program, high school students, and applied research centers and industry. This year the winner of the OCRI Research Symposium Presentation Award was presented to Roshanak B. Basti, PhD candidate, for her work Digital Art Ecosystem: A Proposed Theoretical Construct.

### UC CHAPTER OF WOMEN IN CYBERSECURITY

In May, Bekah Michael, co-director of the Ohio Cyber Range Institute (OCRI), accompanied 14 students to the Women in CyberSecurity (WiCyS) conference in Nashville, Tenn., where the goal is to recruit, retain and advance women in cybersecurity. UC's School of Information Technology was among the many proud sponsors and our UC WiCyS chapter

coordinated the trip for students to join the 2,000 attendees.

Students gained insight from key speakers on a range of cyber topics such as AI, ransomware and incident response to digital footprints, digital forensics and malware. The event culminated with a career fair as a way for students to connect with industry leaders.



University of Cincinnati student chapter of Women in CyberSecurity attended a national conference in Nashville, Tenn., to connect with fellow women leaders in the field of cybersecurity.

## NOTABLE RPC ACHIEVEMENTS AND ACTIVITIES:



**Stark State College:** Achieved the Center of Academic Excellence in Cyber Defense designation from the National Security Agency. NCAE-C program aims to create and manage a collaborative cybersecurity educational program with community colleges, colleges, and universities.



**Cedarville University:** In partnership with National Security Agency and funded by the National Science Foundation, Cedarville created a Cyber and AI Task Force for a study program, beginning fall 2024.



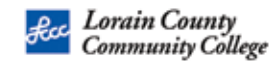
**CinDay Cyber at SOCHE:** Collaborated with Tech First to host a summer Girl Scout Cyber Challenge at the University of Dayton.



**Cuyahoga Community College:** Awarded \$330,000 National Science Foundation Advanced Technical Education grant for Cybersecurity and Critical Infrastructure Pathway for Aviation Industries to create a new program and degree.



**Kent State University:** Awarded grant for Department of Defense Digital Engineering Centers to integrate cybersecurity into instruction of systems engineering lifecycle. Earned National Center Academic Excellence designation as of January 2025 for their CS graduate program of study in cybersecurity concentration.



**Lorain Community College:** Hosted a group of four partner OCRI-RPC institutions (Stark State College, University of Dayton, University of Akron and CinDay Cyber at SOCHE) to showcase the lab at its Advanced Digital Forensics Institute (ADFI) used to extract information from various digital devices.



**PAST Foundation:** Launched Early IT Microschool for students aged 16-22. PAST's program in the Columbus area developed with UC's School of Information and Technology through the Early IT program that allows for a cost-free path to college-level courses.

## ADOPT A CLASS: WITHROW HIGH SCHOOL, CINCINNATI PUBLIC SCHOOLS

You're never too young to learn about cybersecurity. In March, the Ohio Cyber Range Institute (OCRI) welcomed Cincinnati Adopt A Class and 13 eighth graders from Withrow High School to our UC Digital Futures home to learn about careers in cybersecurity.

OCRI co-director Bekah Michael talked about the vast career opportunities. She then led an exercise in sending secret messages that allowed students to encrypt, decrypt and verify messages using Legos.



**University of Akron:** Hosted a summer program for Akron High School students to learn network basics and cyber forensics. Several guest speakers included Mark Bell, cyber security outreach coordinator for Ohio's Adjutant General's Office, presenting on cybersecurity policy and members of the Air National Guard.



**University of Dayton:** Received an Ohio Third Frontier grant through the OCRI to improve cybersecurity in the region. UD will use the grant for an engaging, interactive app for kindergarten through 12th students, launch a free training app for police, and training for future workers. UD's Center for Cybersecurity and Data Intelligence worked with OCRI on the Ohio Persistent Cyber Improvement (O-PCI) initiative to incorporate the Cybermindfulness training approach to cybersecurity for local governments in Ohio.



# OCRI RESEARCH

## CCSP, CHEST, AND CYBER DEFENSE/SFS: OCRI's Active Research Arms

The Ohio Cyber Range Institute (OCRI) research and programming at the University of Cincinnati is anchored by three distinct centers across different academic units and colleges, highlighting the multidisciplinary nature of cybersecurity research and education. These centers are the Center for Hardware and Embedded Systems Security and Trust (CHEST), the Center for Cyber Strategy and Policy (CCSP), and the NSA Centers of Academic Excellence in Cyber Defense (CAE-CD) and Cyber Operations (CAE-CO).



### Center for Hardware and Embedded Systems Security (CHEST):

While tackling industry challenges, CHEST's mission is to build a skilled workforce and to design, protect, and ensure the resilience of hardware against security vulnerabilities.

Funded by National Science Foundation grants and industry memberships, CHEST aligns university research with partner needs to advance security, assurance, and trust in electronic hardware and embedded systems. Its research spans all levels of hardware and embedded systems design, from system and architectural levels to microprocessors and application-specific integrated circuits (ASICs).

CHEST addresses threats across the product lifecycle, from design to manufacturing and operations. The center disseminates technologies, and guidelines to stakeholders and educates future cyber experts.



### Center for Cyber Strategy and Policy (CCSP):

CCSP at the University of Cincinnati advances the study of cybersecurity through a multidisciplinary approach, integrating social science, humanities, strategic studies, international relations, and legal frameworks.

This past year, CCSP researchers advanced U.S. cyber strategy and policy, particularly through a focus on cyber persistence theory and the doctrine of persistent engagement. CCSP received multiple grants, including a DoD Minerva DECUR award with the National Defense University focused on experimental methods to explore cyber operations and counter cyber-enabled deception; a U.S. State Department Embassy grant to partner with the University of Belgrade to develop a similar cyber center in Serbia; and a Philippine government contract to provide OCRI bootcamp training to Philippine military personnel.



**Centers of Academic Excellence in Cyber Defense (CAE-CD) and Cyber Operations (CAE-CO):** The University of Cincinnati holds NSA designations in both Cyber Defense and Cyber Operations, reflecting its strong degree programs, cybersecurity practices, and research. The CAE-CD also manages the NSF Scholarship for Service grant, which supports students in cybersecurity programs who commit to public sector service, helping to fill the skills gap in government cybersecurity roles.



Sriram Arumelli, UC MSIT '23, presents a breakout session on 'Enhancing Cybersecurity Awareness' in the State of Ohio.

## EXPLORING THE FUTURE: Highlights from the 5th Ohio Cyber Range Institute Cybersecurity Education Symposium

The Fifth Ohio Cyber Range Institute Cybersecurity Education Symposium provided a dynamic platform for educators, industry professionals, and students to discuss advancing cybersecurity through strengthening defenses, countering cyber threats and maintaining resilience. Distinguished speakers from the White House, Ohio Department of Higher Education, Ohio Department of Workforce and Development, and leading academic institutions shared insights on the future of cybersecurity education. Hazem Said, OCRI co-director, emphasized the symposium's role in fostering collaboration and innovation for a safer digital future.

# MEET THE TEAM

## EXECUTIVE COMMITTEE



OHIO ADJUTANT GENERAL'S OFFICE



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



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**CHARLES SEE**  
Vice Chancellor, Ohio Department of Higher Education



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Chief Information Security Officer, State of Ohio



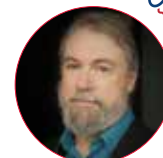
**KIRK M. HERATH**  
Cybersecurity Strategic Advisor & Chair, CyberOhio; Office of Ohio Governor Mike DeWine



**DAREN ARNOLD**  
Deputy Cybersecurity Strategic Advisor, Innovate Ohio  
*Thank You! Service ended April 2024*



**LEXIE MEADE**  
Deputy Director & Special Assistant CyberOhio  
*Service began April 2024*



**JOHN WISEMAN**  
Education Program Specialist, Ohio Department of Education and Workforce  
*Thank You! Service ended July 2024*



**JEREMY VARNER**  
Deputy Director, Division of CTE and Workforce, Ohio Department of Education and Workforce  
*Service began July 2024*

## 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



From left to right:

Ryan Moore, Lead Educator, OCRI; Associate Professor-Educator; Priyanka Siripurapu, student worker; Sterling Haynes, Assistant Professor-Adjunct; Jonathan Ludvigsen, co-op student; Devendra Kumar Aluru, Research Associate; Sai Charan Sudireddy, Graduate Assistant; Brody Osborne, co-op student; Gloria Yeomans, Research Associate; Peter Kobak, Associate Director, O-PCI; Mina Al Sada, Graduate Assistant; Doug Disbennett, Research Associate; Molly Linkous, OCRI Program Coordinator; Stefani Vestring, Ohio Cyber Range Analyst I; Prosper Tornyi, Graduate Assistant; Kevin Mamula, Associate Director of Ohio Cyber Range; Megan Hopperton, OCRI Program Manager; Bekah Michael, Associate Professor-Educator and Executive Staff Director OCRI; Judy Ashton, OCRI Marketing Coordinator; Corey Powers, Ohio Cyber Range Analyst II; Eric Hansford, Ohio Cyber Range Analyst I; Stewart Mustin, Associate Director RPC Engagement; Bianca Richmond, Ohio Cyber Range Analyst I.

Not pictured: Samuel Bricking, Assistant Director, Ohio Cyber Range; Stephanie Ellis, Program Director, Center for Cyber Strategy and Policy; Anthony Jones-Scott, Instructional Designer; Albert Klein Jr., PhD, Assistant Professor-Educator; Michael Loadenthal, PhD, Assistant Professor Research.



## OCRI ADVISORY BOARD



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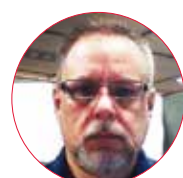
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**CHRIS ZELL**  
Senior Director,  
Information Security,  
Wendy's

\* OCRI Executive Committee serves as ex-officio

# GET INVOLVED



## EDUCATORS & STUDENTS



## BUSINESS & INDUSTRY



## GOVERNMENT & COMMUNITY GROUPS

The Ohio Cyber Range Institute (OCRI) provides the following resources and services in the state of Ohio:

- The Ohio Cyber Range (OCR) virtual cloud environment
- Personnel and technical resources to host cyber exercises
- A 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.

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 [ohiocyberangeinstitute.org/contact-us](https://ohiocyberangeinstitute.org/contact-us) or reach out to us at [ocri@ucmail.uc.edu](mailto:ocri@ucmail.uc.edu).



**CONTACT US TODAY**





# OHIO CYBER RANGE INSTITUTE

UNLOCKING POTENTIAL,  
SECURING THE FUTURE

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