

Cin-Day Cyber Corridor

Cin-Day Cyber Corridor Yearly Report

January 1, 2018 – December 31, 2018



Created by:
Southwestern Ohio Council for Higher Education
3155 Research Blvd, Suite 204
Dayton, OH 45420
p: (937) 258-8890

Vision: Establish and enhance Southwestern Ohio’s reputation as a national leader in cybersecurity education, research and private and public partnerships.

Mission: The Cincinnati-Dayton Cyber Corridor (CinDay Cyber) will serve as a highly valued Cincinnati-Dayton Regional Corridor resource for education, research and workforce development in cybersecurity and information assurance.



Table of Contents

Overview	3
2018 Accomplishments	6
Highlights	8
Conclusion & Going Forward	10

Vision: Establish and enhance Southwestern Ohio's reputation as a national leader in cybersecurity education, research and private and public partnerships.

Mission: The Cincinnati-Dayton Cyber Corridor (CinDay Cyber) will serve as a highly valued Cincinnati-Dayton Regional Corridor resource for education, research and workforce development in cybersecurity and information assurance.



OVERVIEW

In 2016 the Cincinnati-Dayton Cyber Corridor (Cin-Day Cyber): A Regional Consortia Approach to Cybersecurity Education and Workforce Readiness was formed by the Southwestern Ohio Council for Higher Education (SOCHE) in cooperation with Air Force Institute of Technology, Dayton Development Coalition, University of Cincinnati, University of Dayton, and Wright State University). The initiative expanded to include numerous other higher education, K-12, and industry partners to address cyber education and workforce development, based upon the need across the region.

In October 2016, Cin-Day Cyber was awarded the Regional Alliances and Multistakeholder Partnerships to Stimulate (RAMPS) Cybersecurity Education and Workforce Development grant to support a series of “proof of concept” projects. Cin-Day Cyber piloted and assessed the projects as the primary thrust of the RAMPS funding with the goals of: 1) determining which projects would produce benefits to growing the cyber workforce; and 2) identify effective initiatives for long-term “full scale” implementation across the region.

The project design included three strategic phases: 1) Robust data collection on regional cybersecurity workforce needs; 2) Collaboration among Higher Education Industry, K-12 and Regional Economic Development Agencies to broadly address cybersecurity education and workforce development; and 3) Industry and higher education supported cybersecurity career awareness and skills development for underserved populations in K-12 schools

These initiatives specifically addressed four overall beneficial outcomes. First, higher education identified and addressed the skills needed in industry, as colleges and universities develop academic pathways to increase the pipeline of students pursuing cybersecurity careers. The second benefit of these initiatives is for employers to benefit from an increased supply of skilled cybersecurity workers and an educational system aligned to their needs. Third, state and local economic development organizations, working with area businesses and nonprofit organizations, will benefit by attracting new industries to their region to create more jobs. Lastly, K-12 institutions engage students in active learning practices that build career awareness around the opportunities offered by the cybersecurity professions.

Each strategic phase was broken into project classifications to meet the goals and objectives set forth in the RAMPS Grant proposal. Our accomplishments positively impacted regional K12 and college students, industry partners, and regions cyber workforce. Below are only a few of our activities Cin-Day Cyber performed with funding from the NICE RAMPS Grant. Refer to Cyber

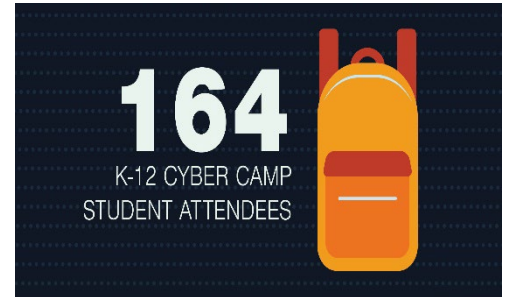
Vision: Establish and enhance Southwestern Ohio's reputation as a national leader in cybersecurity education, research and private and public partnerships.

Mission: The Cincinnati-Dayton Cyber Corridor (CinDay Cyber) will serve as a highly valued Cincinnati-Dayton Regional Corridor resource for education, research and workforce development in cybersecurity and information assurance.



Accomplishment Report located on <https://www.cindaycyber.org/> for a complete list of accomplishments.

- Launched website for Cin-Day Cyber <http://cindaycyber.com/> to provide a central location to communicate upcoming cyber events, cyber education, cyber workforce, etc.
- Conducted Cyber Demand & Gap Analysis and created Expertise & Research Inventories. The findings were communicated to industry and higher ed communities during roundtable discussions which helped stimulate partnerships between communities to meet market specific cyber workforce needs.
- Secured funding for Cyber Range that is available for all institutions and industry to use for teaching students and allowing industry a safe environment for testing their network security.
- Secured 74 cyber-related internships and provided 3 scholarships to K-12 students who are pursuing computer science and cyber security degrees
- Hosted or co-sponsored speakers, cyber camps, roundtables, symposiums, STEM career and research fairs, conferences, and hack-a-thons
- Trained high school teachers to become college cybersecurity instructors for first-year college courses that are taught through Ohio's College Credit Plus program.



Vision: Establish and enhance Southwestern Ohio's reputation as a national leader in cybersecurity education, research and private and public partnerships.

Mission: The Cincinnati-Dayton Cyber Corridor (CinDay Cyber) will serve as a highly valued Cincinnati-Dayton Regional Corridor resource for education, research and workforce development in cybersecurity and information assurance.



CinDay Cyber began 2018 by reflecting on all the activities performed during the RAMPS Grant to create a strategic path forward while staying within the NICE (National Initiative for Cybersecurity Education) framework which is supported by NIST (National Institute of Standards and Technology). The members defined the below 4 strategic priorities by analyzing new and existing members' short and long-term goals. Each priority was defined with strategies on how to achieve each priority's goals.

1) Build Cyber Ecosystem

- Increase CAE designated institutions
 - CAE designated institutions will support those who are pursuing the designation by providing practical guidance and Higher Ed meetings will allocate time for CAE Q&A.
- Explore grant and collaboration opportunities
 - Institutions will share grant opportunities with colleagues and explore ways to collaborate on grants.
- Attend events and conferences
 - Institutions will invite other colleges and industry to their events (i.e. Hack-a-Thons) to provide all students experiential learning opportunities and strengthen the region's cyber footprint. CinDay will provide marketing support for the events.

2) Increase Higher Ed Professional Development and Institutional Collaboration

- Higher Ed Roundtables will be conducted approximately 3 times per year to provide professional development opportunities to higher ed community and to increase collaboration.

3) Establish Industry Partnerships

- Partner with established organizations
 - CinDay will to form partnerships to better understand industry needs and provide students opportunities for internships.
- Create one-off partnerships with businesses
 - Institutions will foster relationships to build programs that meet specific industry needs and to gain financial support for events and programs (i.e. Hack-a-Thons)

4) Define Pathway Development

- Produce course and degree development
 - Through industry partnerships via CinDay and/or individual institutions, new course/degree programs will be defined, and internship opportunities will be created.
- Increase throughput of both K12 and College interns
 - Members will notify SOCHE of new relationships and/or courses, so information can be added to Degree Finder, web sites,

Vision: Establish and enhance Southwestern Ohio's reputation as a national leader in cybersecurity education, research and private and public partnerships.

Mission: The Cincinnati-Dayton Cyber Corridor (CinDay Cyber) will serve as a highly valued Cincinnati-Dayton Regional Corridor resource for education, research and workforce development in cybersecurity and information assurance.



and community partners will be informed to help promote region's strength in cyber.

- SOCHE Intern will actively pursue creating internship opportunities and SOCHE Engage will establish relationships with the K12 community to help increase career awareness and strengthen future pipeline.

2018 ACCOMPLISHMENTS

CinDay Cyber members quickly inundated themselves with challenging work to achieve many accomplishments in 2018. Collaboration proved to be the important key in achieving goals and making an impact in our community, workforce, and student engagement.

The "Build Cyber Ecosystem" priority was attained in many ways. Cedarville University received NSA's (National Security Agency) Center of Academic Excellence (CAE) designation in Operations. Now CinDay Cyber Corridor has 7 NSA CAEs in Cyber Defense and Operations!

Our institutions continued to build our ecosystem by coming together in partnerships to receive State and Federal grants. For example, University of Cincinnati (UC) and Cedarville University received collaborative CAE-Cyber Operations Research grant for \$156,000 from the NSA to study the escalatory dynamics of nation-state cyber operations. UC and Clark State Community College also partnered on an NSA grant for a 12-week online training course for military and civil servants.

University of Cincinnati open its State funded Cyber Range for students to enhance their hands-on learning experience and industry partners to test their vulnerabilities. Clark State received P3 grant to offer scholarships to professionals who are interested obtaining degrees in cyber. Plus, UC received a GenCyber grant to create a workshop to teach teachers how to develop a portable cyber course.

Additionally, Sinclair College leveraged their institutional relationships to receive a federal grant award for nearly one million dollars from the National Science Foundation (NSF). The grant money will support the Community College Accelerated Cyber Pilot Program, a project initiated by the NSF to help strengthen cybersecurity education programs and improve the security of the information technology across the country.

Cinday Cyber continued building our ecosystem by hosting many events like University of Dayton's webinar on "Educating for Cyber-mindfulness". Furthermore, many of our institutions hosted hands-on learning opportunities like Hack-a-Thons. During these events, our institutions maintained open communications when planning to ensure dates did not conflict with

Vision: Establish and enhance Southwestern Ohio's reputation as a national leader in cybersecurity education, research and private and public partnerships.

Mission: The Cincinnati-Dayton Cyber Corridor (CinDay Cyber) will serve as a highly valued Cincinnati-Dayton Regional Corridor resource for education, research and workforce development in cybersecurity and information assurance.



partnering institutional events and to provide all regional students experiential learning opportunities.

Finally, Cinday members continued to share lessons learned from RAMPS Grant and current research via NICE publications and presentations at National conferences like the CAE-Defense Executive Forum and National Cyber Summit. Additionally, they sponsored regional conference sessions and sat on expert panels to share their knowledge which supports building our regional ecosystem.

Cinday Cyber's next priority was to "Increase Higher Ed Professional Development and Institutional Collaboration". Members utilized higher ed roundtables to provide professional development opportunities and to increase collaboration. These roundtables allocated time for each institution to discuss institutional projects and programs, solicit advice from colleagues, and to strategically plan for future grant opportunities and upcoming events. We extended our meetings portfolio when Sinclair hosted a CTE (Career and Technical Education) Cyber Security meeting on behalf of the NSF with people from NSA, DHS (Department of Homeland Security), and NIST NICE to discuss the needs of Cyber Education in the high schools.

Our members also utilized regional conferences and workshops for professional development opportunities and to share their research finding and best practices.

CinDay Cyber's third priority "Establish Industry Partnerships" needed CinDay to form partnerships to better understand industry needs and provide students opportunities for internships. CinDay's strategy to encourage each institution to establish relations with local industry resulted in a better understanding of industry needs so institutions could create programming to meet workforce demands. Moreover, these relationships helped foster industry to understand the importance of experiential learning opportunities for students. As a result, they have sponsored numerous events like hack-a-thons, career mixers, and hundreds of STEM-related internships!

Technology First was a partnership that strengthen in 2018. CinDay sat on panels during their annual Ohio Information Security Conference and took part in Taste of IT which connected industry with institutions. Also, they established the Robert V. McKenna Scholarship for students who are interested in pursuing degrees in STEM. Dayton Defense and Wright Brothers Institute (WBI) were other partnerships that we strengthen by being cyber and workforce panelist during Dayton Cyber Defense Conference and WBI's University and Industry Collaboration Workshop.

Our final priority "Define Pathway Development" required us to analyze the information provided by our industry relationships we establish in the third strategic priority to design new courses, certification certificates, and degree programs that meet current and future workforce

Vision: Establish and enhance Southwestern Ohio's reputation as a national leader in cybersecurity education, research and private and public partnerships.

Mission: The Cincinnati-Dayton Cyber Corridor (CinDay Cyber) will serve as a highly valued Cincinnati-Dayton Regional Corridor resource for education, research and workforce development in cybersecurity and information assurance.



demands. Wright State University added a Bachelor of Science in Cybersecurity so their students have an option to achieve a certification, Bachelor, Master's, or PHD. Clark State and Sinclair College have established articulation agreements with many of our four-year institutions to allow their students to advance their cyber education. Cedarville created the Center for the Advancement of Cybersecurity, whose mission is to advance cybersecurity in our nation by developing tomorrow's cyber leaders in the classroom, shaping cyber education in the academy, and promoting cyber awareness in society.

SOCHEEngage was created for regional workforce initiatives and internship management to connect industry employers with K -12 workforce pipeline. Meanwhile, SOCHE's Degree Finder and CinDay websites enhancements enable students and industry partner to quickly find information on educational programming and upcoming events in the region.

HIGHLIGHTS

Below are a few 2018 highlights from Cin-Day Cyber efforts during 2018 which positively impacted students' cyber workforce readiness, built a stronger ecosystem, and established valuable connections with industry.

Sinclair College hosted TECH CORPS Hack 2018. 142 students from over 70 schools in Columbus, Dayton, and Zanesville were able to learn to use technology to create solutions that could have an impact on their communities! Additionally, 52% of students indicated in their applications that they had absolutely NO previous experience in coding, IT, or App development... and all were able to successfully work together to create an App in less than 24 hours!

Vision: Establish and enhance Southwestern Ohio's reputation as a national leader in cybersecurity education, research and private and public partnerships.

Mission: The Cincinnati-Dayton Cyber Corridor (CinDay Cyber) will serve as a highly valued Cincinnati-Dayton Regional Corridor resource for education, research and workforce development in cybersecurity and information assurance.



- CinDay Cyber Corridor was appointed as 2018 NIST Action Cluster for Education SuperCluster.
- University of Cincinnati, Mark Stockman, and University of Dayton, Thomas Skill, made the list of Top Cybersecurity Professors on Twitter.



- Cedarville University was designated as an NSA Center of Academic Excellence in Cyber Operations. Only 20 schools nationwide has the designation.

Vision: Establish and enhance Southwestern Ohio's reputation as a national leader in cybersecurity education, research and private and public partnerships.

Mission: The Cincinnati-Dayton Cyber Corridor (CinDay Cyber) will serve as a highly valued Cincinnati-Dayton Regional Corridor resource for education, research and workforce development in cybersecurity and information assurance.



- The Air Force Institute of Technology and Cedarville were named featured curriculum authors for the NSA's National Cybersecurity Curriculum Program.

CONCLUSION & GOING FORWARD

The progress that Cin-Day Cyber made during 2018 was abundant and the team was able to accomplish a great deal of cyber related tasks and activities to develop and grow cyber workforce in the Cin-Day Region by following the strategic priorities that were set for 2018. These priorities created new synergies between individuals and companies in the region that had not existed previously. We deepen our understanding of the cyber industry and workforce needs and helped strengthen the alliance among industry, higher education, and K-12 in the Cin-Day Cyber Region.

Going forward, Cin-Day Cyber will continue to support, develop, and enhance cyber education, workforce development, and other cyber related activities in the region. The Cin-Day team will continuously improve their best practices by analyzing and adjusting the strategic strategies that were defined by our priorities: 1) Building a Strong Cyber Ecosystem; 2) Increase Higher Ed Professional Development and Institutional Collaboration; 3) Establish Industry Partnerships; 4) Define Pathway Development.

The Cin-Day region is excited to continue the growth of these strategic priorities and will persist to enhance the regional ability to develop the workforce in the ever-changing cybersecurity field.