

# **NICE RAMPS Grant**

## **Cin-Day Cyber Corridor Report**

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## EXECUTIVE SUMMARY

The Cin-Day Cyber Corridor team continue to achieve all established goals and objectives as set forth in the RAMPS Grant proposal. As June ended the team continued progress on phases 2 and 3 of the approach submitted in the proposal. Some of the highlights include:

- Hosted a cyber symposium, a cyber mixer, and 2 roundtables for industry and higher ed
- Co-sponsored Ohio Information Security Conference
- Held STEM-Cyber Research Fair
- Created <http://cindaycyber.com/> to house cyber related information including research findings and educational program inventory
- Acceptance by 3 scholarship recipients to attend the University of Cincinnati and Wright State University to pursue computer science and cyber security programs
- Analysis on the cyber workforce market needs
- Nationally recognized Cyber Patriot teams
- Cyber Warrior Princess Raspberry Pi and Cyber Patriot camps for K12 students
- Trained high school teachers to become college cybersecurity instructors for first-year college courses
- Collaboration of higher ed and industry to develop workforce
- 74 cyber related internships

Going Forward the Cin-Day Cyber Corridor team will continue phase 2 which includes higher education cybersecurity academic roundtables, cybersecurity industry regional roundtable and research to workplace briefings, cybersecurity internship fairs and employment outreach, and more. The goal of phase 2 is to use collaboration to address cybersecurity education and workforce development. By the end of phase 2 Cin-Day Cyber Corridor team will gather the status of existing cybersecurity degrees, certificates, and training programs as well as identify new degrees, certificates, and training programs for development. In addition, the team will be able to identify, enumerate and report regional priorities for strengthening cybersecurity business growth, and report and share the results of the pilot projects. The team will also continue to work on phase 3 of the RAMPS proposal. The goal of Phase 3 is to create a mechanism for industry and higher education to collaborate on Career Awareness and Skills Development and to increase participation via coaching and mentorship in CyberPatriot and related extracurricular Programs.

## OVERVIEW

The Cincinnati-Dayton Cyber Corridor (Cin-Day Cyber): A Regional Consortia Approach to Cybersecurity Education and Workforce Readiness was formed by SOCHE in cooperation with

the founders of the Cybersecurity Consortium of Southwest Ohio (Air Force Institute of Technology, Dayton Development Coalition, University of Cincinnati, University of Dayton, and Wright State University), the Dayton Development Coalition (DDC) and the Regional Economic Development Initiative (REDI).

The Cin-Day Cyber Corridor uses the Regional Alliances and Multistakeholder Partnerships to Stimulate (RAMPS) Cybersecurity Education and Workforce Development grant to support a series of “proof of concept” projects piloted and assessed as the primary thrust of the RAMPS funding. The goal of these initiatives was to determine which projects produced the greatest benefits with the goal of identifying effective initiatives for long-term “full scale” implementation that can grow to a region-wide execution concluding the RAMPS grant funding.

The three strategic phases being accomplished under the RAMPS grant by Cin-Day Cyber are:

*Robust data collection on regional cybersecurity workforce needs*

- a. Cybersecurity workforce market needs and opportunities analysis aligned with NICE Framework and cybersecurity jobs heat map
- b. Cybersecurity regional educational program inventory and gap analysis
- c. Cybersecurity regional expertise and research inventory
- d. Cybersecurity policy analysis

*Collaboration among Higher Education Industry, K-12 and Regional Economic Development Agencies to broadly and deeply address cybersecurity education and workforce development*

- a. Higher Education cybersecurity academic roundtable
- b. Cybersecurity industry regional roundtable and research to workplace briefings
- c. Cybersecurity internship fairs and employment outreach
- d. NICE conference participation

*Industry and higher education supported cybersecurity career awareness and skills development for underserved populations in K-12 schools*

- a. K-12/CAE/Industry collaboration on career awareness and skills development
- b. CyberPatriot mentorship and related extracurricular programs

These initiatives were intended to specifically address four overall beneficial outcomes. First, higher education identifying and addressing the skills needed for business as colleges and universities ascertain and 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 area to create more jobs. Lastly, K-12 institutions engage students in active learning practices that built career awareness around the opportunities offered by the cybersecurity professions.

## UPDATES & ACCOMPLISHMENTS

All goals and objectives set forth in the RAMPs Grant Organizer (provided to NIST on January 6, 2017) for January 1 – June 30, 2017 were accomplished. Below are the activities Cin-Day Cyber performed during this period with funding from the NICE RAMPS Grant.

- **Grant Planning/Miscellaneous activities**

- Conducted status planning meetings to ensure grant deliverables are on schedule
- Launched website for Cin-Day Cyber <http://cindaycyber.com/>
- Joined Ohio Cyber Collaboration Committee (OC3) to help promote cyber awareness and develop a strong cyber security infrastructure across Ohio

- **Cyber Workforce Market Needs, Opportunities, and Expertise**

- Completed final “Research findings for Cyber Demand” report and posted results on website <http://cindaycyber.com/>
- Created Degree Finder with access to Southwest Ohio colleges and universities
- Ohio Workforce resource page linked via Cin-Day Cyber and RAMPS home pages to provide access to cybersecurity regional educational program inventory, gap analysis, and expertise and research inventories.
- Added additional information for Southwest Ohio and for combined JobsOhio West and Southwest regions

- **Higher Ed Activities**

- Partnered with Air Force Institute of Technology (AFIT) to host SOCHE STEM-Cyber Research Fair to bring industry together with students as they present their research findings
- Gathering information from institutions on their ongoing cyber related research areas as input to the RAMPs grant goal to create a regional cybersecurity research inventory. The research inventory ideally will include a synopsis of current research in cybersecurity from every regional college and university. This inventory will provide a view into common and unique regional expertise in cybersecurity.

- A deeper understanding of university research and expertise in cybersecurity will enable Cin-Day Cyber to competitively compete for additional research funding. We plan to capture, organize, and communicate the depth and breadth of cyber related research in the region to facilitate cross-institutional research collaboration and strengthen efforts to share relevant cybersecurity research findings with industry collaborators.
- **Industry/Higher Ed Roundtable**
  - Hosted Cyber Industry Roundtable on November 9, 2016
  - Hosted Dayton Region Military Collaborative (DRMC) Cyber Symposium on November 10, 2016
  - Hosted Cyber Industry/Higher Ed Roundtable on March 9, 2017
  - Scheduled 12 September 2017, at Voice of America in West Chester. Key note speaker is an Infrastructure Security Manager. Selected location to attract Southern region's institutions and business partners.
- **Internships**
  - Secured 74 cyber related internship at Air Force Institute of Technology (AFIT). 24 of the positions are filled by females and 7 are self-identified as minority.
- **Internship Fairs, Conferences & Employment Outreach**
  - Held Cyber Mixer to bring industry together with institutional cyber department heads and career services
  - Co-sponsored Technology First's Ohio Information Security Conference (OISC)
    - Hosted Cyber track:
      - Transforming Your User Community for IT Security Adversaries to Cyber-Mindful Allies: Strategies Tactics and Lessons learned from UD's Safe Computing Campaign
      - The Cybersecurity Advisory Board of the Office of the Ohio Attorney General Industry experts/business leaders formed by Mike DeWine
      - Cin-Day Cyber: A Regional Consortia Approach to Cybersecurity Education and Workforce Readiness
      - Vendor Management – A Cyber Security Perspective
      - Developing the Next Generation of Cyber Talent: Panel Discussion on Successful Internships
  - Presented at National Cyber Summit
  - Co-sponsoring Northern Kentucky University (NKU) Cyber Security Symposium on 13 October 2017.
    - Hosting session at symposium
    - Providing marketing support for event and request for speaker proposals
  - Hosting Cyber Internship Fair during NKU Cyber Security Symposium
- **K-12 and Higher Ed Outreach**

- Sponsored Maj Gen Franz, Joint Chiefs of Staff Operations Chief for USCYBERCOM to speak at the University of Cincinnati's Army ROTC commissioning and to conduct three professional development sessions with the graduating cadets, the Cyber Leader Development Program, and CEAS CE/CS and Poly Sci cybersecurity students
- Provided 3 scholarships to K-12 students who are pursuing computer science and cyber security degrees
- Trained high school teachers to become college cybersecurity instructors for first-year college courses that are taught through Ohio's College Credit Plus (CCP) program
- Sponsored Cyber Patriot teams which competed at local, state, and national levels
- Held Cyber Patriot Camp for 120 K-12 students
- Conducted Raspberry Pi Camp for 44 7<sup>th</sup> and 8<sup>th</sup> graders
- Provided funding for TestOut Certification Exams
  - TestOut is a nationwide provider of online certification exams. High School students who pass the exams earn industry credentials; these credentials help students apply for college internships and entry-level IT positions.
    - Computer Networking (Network Pro Certification) exam: 65% students passed. The average passing rate for colleges nationally is 70%.
    - PC Hardware and Software (PC Pro Certification) exam: 92.86% students passed. The average passing rate for colleges nationally is 74%

## GOING FORWARD

Going forward the Cin-Day Cyber Corridor team continues to progress through phase 2: collaboration to broadly and deeply address cybersecurity education and workforce development. Phase 2 will include higher education cybersecurity academic roundtables, cybersecurity industry regional roundtable, cybersecurity internship fairs and employment outreach, and more.

The goals of phase 2 are to utilize the data collected in phase 1 and host higher education industry meetings that will review current educational programs and identify new curricula offerings with the goal of achieving greater alignment with industry needs and direction. In phase 2 the Cin-Day Cyber Corridor team continues to work on a regional collaborative strategy that will provide pathways to effectively respond to the cybersecurity gap analysis report. This includes the review of existing cybersecurity degrees, certificates, and training programs and identifying new degrees, certificates, and training programs for development.

We will host a minimum of one more industry based regional roundtable focused on economic development opportunities in the cybersecurity space, and delivery of research to workplace symposia. In doing so, the Cin-Day Cyber Corridor team will be able to identify, enumerate and report regional priorities for strengthening cybersecurity business growth. The regional roundtables and research to workplace symposia will help apply the research universities and colleges have done and sets a stage for communication of these findings to industry.

Already planned and scheduled is the Cin-Day Cyber Corridor hosted cybersecurity internship fair at Northern Kentucky University (NKU) Cyber Security Symposium. This will help enhance cybersecurity internship offerings and employment opportunities for students into the cybersecurity field. In phase 2 the team will also participate in the NICE Conference to develop a conference presentation on the results of the “proof of concept” initiatives from the RAMPS projects. The Cin-Day Cyber Corridor team will also work on employment outreach during phase 2 to report and share the results of the pilot projects to help employers understand the current cyber environment for the region. This will let employers better comprehend the current cyber pipeline as well as the provide insight on the best courses of actions going forward from the “proof of concept” results.

Phase 3: cybersecurity career awareness and skills development for underserved populations will run in sync with phase 2 and will conclude in November 2017. Phase 3 will focus on creating a mechanism for industry and higher education to collaborate on identifying curricular foci that will map to industry needs and guide youth through college education and be relevant to industry cybersecurity workforce needs. In addition, phase 3 will create a sustaining network through Cin-Day Cyber to support specific programming dedicated to increasing women, minorities, as well as the overall numbers of students from varied educational backgrounds entering cyber related college degrees and careers based on research based best practices. Lastly, phase 3 will provide coaching and mentorship from industry and higher education volunteers to support the CyberPatriot and Cyber Warrior Princess program at the pilot k-12 schools to build career skills among the youth.

## CONCLUSION

The Cin-Day Cyber Corridor RAMPS proposed plan is meeting expectations to date. Phase 1: data collection on cybersecurity workforce was completed and phase 2: collaboration to address cybersecurity education and workforce development is ongoing. Phase two is planned through November 2017. Phase 3: cybersecurity career awareness and skills development for underserved populations in k-12 schools will run in parallel concluding in November as well. Currently, the initiative is on schedule to finish on time and has gained valuable knowledge and insight on the cybersecurity environment in the region thus far. It has allowed industry, higher



education, k-12, and economic development partners to come together in one room and discuss the cyber gaps and opportunities of the region. Providing a regional platform to address the regions cyber areas of concern, possible solutions, and the best approach moving forward and keeping the regional players informed of everything which is ongoing in this space.