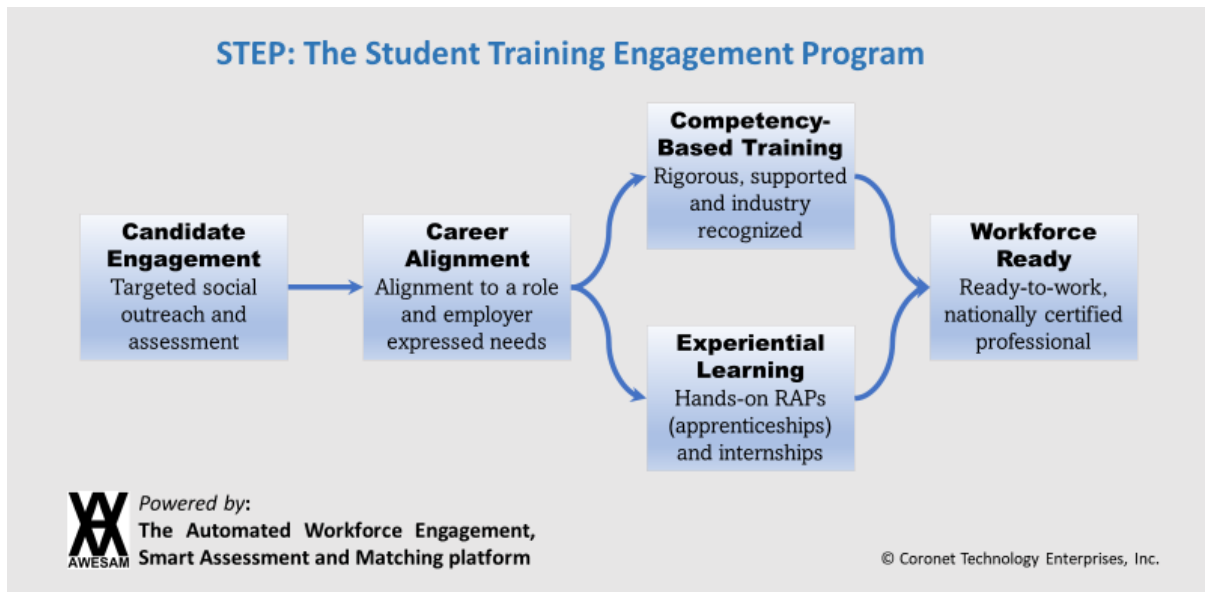# Case Study: CCI Reskills Workers to Enter the Cybersecurity Profession Using the CivilianCyber AWESAM Platform



## Summary

- **Client:** Commonwealth Cyber Initiative (CCI) Southwest Node
- **Industry:** Government, Innovation, Workforce Development
- **Project Name:** STEP: The Student Training Engagement Program (2021/22)
- **CivilianCyber Products/services used:**
  - AWESAM: CivilianCyber's Automated Workforce Engagement, Smart Assessment and Matching platform
    - Workforce Insights as a Service (WIaaS)
    - YourCareerCounselor
    - Workforce Ideation Network (WIN)
- **Results:**
  - 100% (8) Completions
  - 87.5% (7/8) Industry Placements
  - Technology-driven down-selection to 1.46% (15/1026) of applicants

## The Problem

- The Commonwealth Cyber Initiative (CCI) is Virginia's nexus for cybersecurity research, innovation, and workforce development. Each of CCI's four nodes: Central, North, Coastal and Southwest; focus on cybersecurity needs associated with their region. To support the needs in their node, and for the larger state, the southwest node has built a coalition of partners that include public and private industry as well as enhancing collaboration between two- and four-year universities in the region.
- Workforce development is a major focus area of the CCI Southwest node. While cybersecurity workforce challenges are a national issue, Virginia is a focal point for the workforce gap with employers actively seeking workers to fill approximately 50,000 job openings. The issue presents itself in diverse ways with the rural and urban areas facing different challenges when trying to overcome the workforce gap.
- Not addressing the cybersecurity workforce gap in Virginia creates both a national security risk as well as a separate economic risk. The national security risk is due to the need to maintain a high level of security for the state's large military and civilian defense infrastructure. There is also an economic risk associated with current industry cybersecurity needs as well as industry requirements for a robust technology and cybersecurity workforce as part of doing business in the state.

## The Solution

- The CCI Southwest node was actively seeking solutions to address the cybersecurity workforce gap in Virginia when Dr. Jeff Pittges, a CCI Fellow who was aware of CivilianCyber, introduced them to the Southwest node as a potential provider.
- CivilianCyber's leadership had already shown a long and successful history of innovative educational and workforce development programs that achieved national recognition and served as models across the country. Prior to the CCI Southwest node introduction, CivilianCyber had also been working with the CCI Coastal Virginia node and its associated universities to develop streamlined workforce assessment instruments. In parallel, CivilianCyber had developed STEP, the Student Training Engagement Program, a comprehensive process and program to identify, reskill and place persons into high demand careers to include cybersecurity.
- Dr. Pittges remarked, "*I have spent the last two years studying experiential learning in Virginia. The CivilianCyber solution provides opportunities to deserving learners while also improving the industry workforce pipeline. This program will make a significant impact and I am thrilled that CCI supported the program development.*"
- CCI Southwest engaged CivilianCyber to deploy STEP as a proof-of-concept to address the cybersecurity workforce gap in Virginia. Powered by the CivilianCyber Automated

Workforce Engagement, Smart Assessment and Matching (AWESAM) platform, the initial STEP cohort consisted of eight (8) persons from varying backgrounds across Virginia. The process consisted of proprietary approaches to engage potential candidates via social media, assess candidates for "aptitude and attitude" that matched the given career track (cybersecurity), and upon final selection placement into a nationally recognized, competency-based training program that supported hard and soft skills development. Most STEP learners also participated in the CivilianCyber Registered Apprenticeship Program (RAP) for cybersecurity that has been approved by the Department of Labor (DOL), via the Virginia Department of Labor and Industry (DOLI), as well as the US Veterans Affairs Department (VA).

## The Results

1) **Effective Engagement and Technology-Driven Down-Selection**
   AWESAM was used to perform targeted outreach via social media where applicants completed the CivilianCyber smart assessment to gauge applicant "aptitude and attitude" for the targeted career (cybersecurity). Assessment algorithms were used to down-select from one-thousand twenty-six (1026) applicants to the top fifteen (15) candidates for the eight (8) open positions representing a 1.46% down-select rate.

2) **100% Program Completion Rate**
   All eight (8) STEP participants successfully completed the program in the allotted time with the majority finishing early. All finished with a nationally recognized credential.

3) **87.5% Industry Placements in Cybersecurity Role**
   Seven (7) of the eight (8) STEP participants were employed in a cybersecurity role prior to program completion.

4) **50% Participation in Registered Apprenticeship Program (RAP)**
   Half of STEP participants (4/8) were hired by their employer via a CivilianCyber Registered Apprenticeship Program (RAP) prior to program completion.

5) **"Natural" Diversity, Equity and Inclusion (DEI)**
   STEP and the underlying AWESAM technology were built to look for "aptitude and attitude" that could indicate potential to succeed in the given high-demand career. Results indicate that this approach limited bias and achieved a natural approach to achieving DEI via the use of a technology-driven selection process. STEP participants were recruited, via AWESAM, from across Virginia and the resulting demographics showed a prominent level of diversity: four (4) women, three (3) military veterans, four (4) minorities, four (4) persons from rural areas, and four (4) persons from urban areas. Note that participants representing non-geographic demographics (women, veterans and minorities) were from both rural and urban areas as well.

# Conclusion

- The Commonwealth Cyber Initiative (CCI) continues to be the nexus for cybersecurity in Virginia and along with the four nodes has grown out its presence considerably.
- Statewide CCI, and Southwest and Coastal nodes have all engaged CivilianCyber on numerous subsequent workforce projects to address the workforce gap in Virginia.
- CivilianCyber introduced the Registered Apprenticeship Program (RAP) model for high-demand jobs as part of STEP and CivilianCyber have since become a national level subject matter experts (SMEs) on how apprenticeships, pre-apprenticeships and other experiential learning approaches can be applied to address the workforce gap.
- The AWESAM platform tools have now been applied to high-demand workforce needs in careers as diverse as Geo Spatial Intelligence, Construction and Healthcare.
- The new CivilianCyber Workforce Center of Excellence (CoE) leverages and expands AWESAM capabilities to deliver scalable, enterprise-level workforce pipeline solutions for industry, government and higher education customers.
- CivilianCyber Workforce Insights as a Service (WIaaS) has been expanded to work across numerous sources of publicly available data (e.g., social media, census data, Bureau of Labor Statistics and census data, websites, etc.) to deliver focused and actionable open-source intelligence (OSINT) based on customer-driven use cases.

*"Insanity is doing the same thing over and over again but expecting different results."*

- The only way to address the ever-widening workforce gap that pervades every industry sector is to tap into the large pool of latent talent within our society. CivilianCyber, via AWESAM, has proven methods to engage, assess, align and train persons that have shown the "aptitude and attitude" to enter these careers and increase the pipeline of high-quality workers that enable business.

**For more information on the CivilianCyber, the AWESAM platform or other workforce development services, please reach out to Lynn at [LynnJones@CivilianCyber.com](mailto:LynnJones@CivilianCyber.com).**

# Appendix A: Selected Success Stories

**Geneva Blackwell**

A Navy veteran, Geneva had worked in various sales administration positions at car dealerships. After completing STEP and the apprenticeship program she secured a role as Sr. Technical Specialist/Business Development at AIS Networks. She attributed her success to the experience gained during the program.

**Phuc Nguyen**

Originally from Vietnam, Phuc had pursued an education in IT and cyber security and graduated from Virginia Commonwealth University soon after joining the program. After completing his apprenticeship at ASI Network, he was recruited by his alma mater as a Network Specialist in the VCU Computing Center.

**Kurtis Dennis**

Kurt recently graduated from Old Dominion University with a Masters in Cybersecurity. He served his apprenticeship with CivilianCyber working on numerous projects before securing a full-time position as an Information Technology Analyst in the Geico Insurance Emerging Leader program.
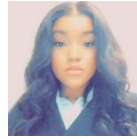
**Faith Weems**

Coming from a rural background, Faith had bounced between several entry-level administration roles at local banks. When she completed the program, she was able to land a position as an Engineering Program Compliance Coordinator at Moog, Inc. an aerospace defense contractor.