

# Building Cybersecurity Skills Through Work-Based Learning Experiences

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August 27, 2025

# Notes and Reminders



**Attendees are muted:** Due to the number of attendees, all participant microphones and cameras are automatically muted.



**Webinar Recording:** This webinar and the engagement tools will be recorded. An archive will be available at [www.nist.gov/nice/webinars](http://www.nist.gov/nice/webinars).



**Submitting Questions:** Please enter questions and comments for presenters in the Zoom for Government Q&A. Chat has been disabled for this event.



**CE/CPE credits:** The CEU form will be available on the event page after the event.



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Rodney Petersen

*National Institute of  
Standards and  
Technology*



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Ali Crawford

*Georgetown  
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Anthony Hernandez

*Arctic Wolf*



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Elizabeth Rasnick

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# The Future of Work-Based Learning for Cyber Jobs

*Reflections from an Expert Roundtable*

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27 August 2025

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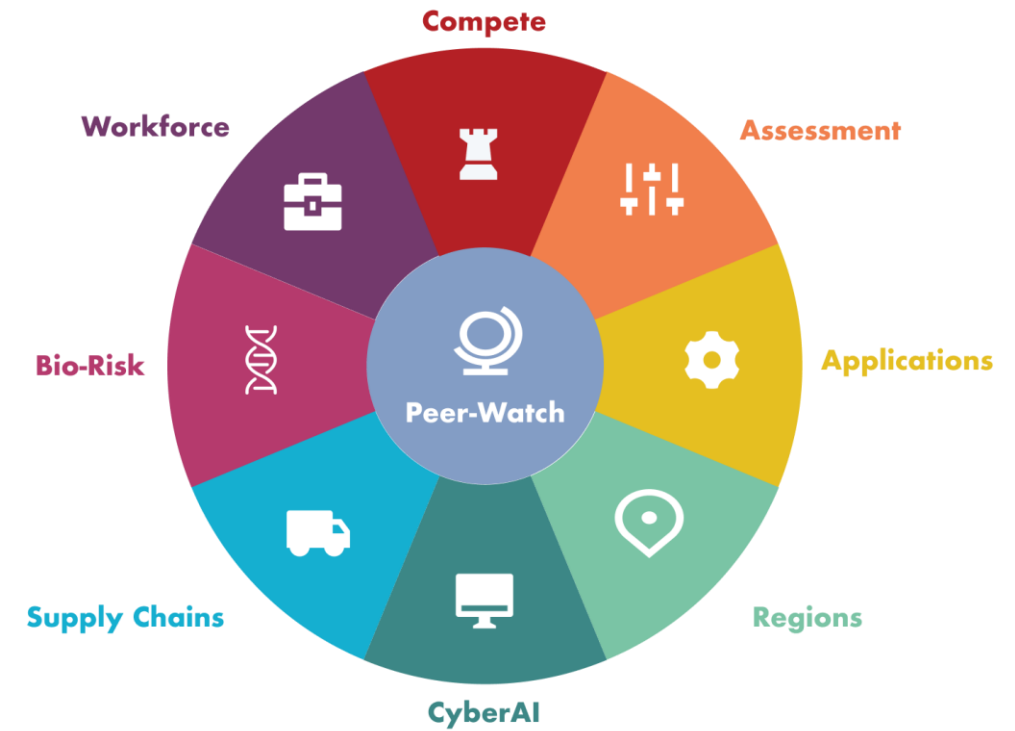
# About CSET

## A policy think tank that:

- Focuses at the intersection of U.S. national security and emerging technologies
- Produces analytical and data-driven products to advise and inform the U.S. government

## Additional resources:

- In-house data research scientists
- In-house translation capabilities
- Emerging Technology Observatory repository



# Work-Based Learning as a Federal Policy Priority

## 1. U.S. AI Action Plan

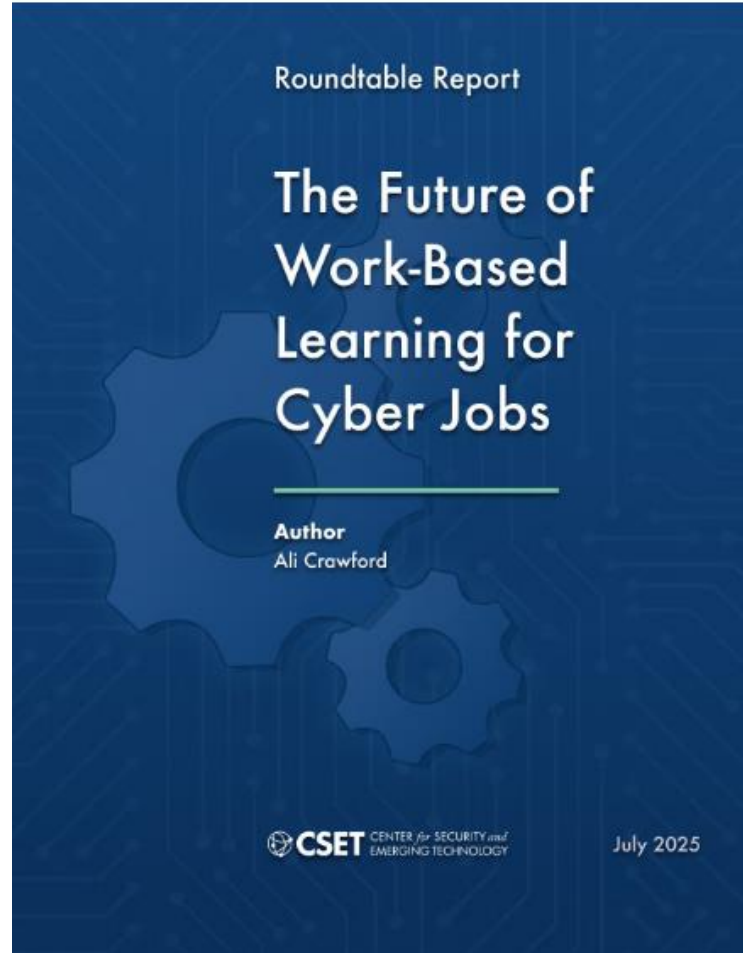
## 1. America's Talent Strategy

## 1. Skilled Jobs Executive Order

## 1. NICE Strategic Plan

- *partnering with state and local governments to support the creation of industry-driven training programs that align to industry needs*
- *expanding the use of Registered Apprenticeship in critical infrastructure programs*
- *scaling high-quality work-based learning models*
- *connecting Americans to skilling opportunities*
- *integrating workforce development models and systems*
- **1.5**—*Galvanize employers to promote discovery and exploration of cybersecurity career opportunities and work-based learning experiences*
- **2.4.4**—*Formalize internships that provide experience and verifiable competencies in the ability to perform NICE Framework Tasks*

# “The Future of Work-Based Learning for Cyber Jobs”



## Four guiding questions:

1. What does work-based learning mean to you?
2. What is the value of work-based learning compared to the traditional four-year college degree?
3. What are the most effective work-based learning approaches?
4. What challenges or barriers prevent more utilization?

# #1: Move From “either/or” to “both/and” System

## Participants agreed that:

- Work-based learning has always existed outside of the traditional education system
- Learners must choose between work-based learning programs or traditional college degree programs
  - *Not all colleges and universities have the capacity to engage industry in a way that will keep curriculum relevant*

## The “both/and” system looks like:

- Learners receive required technical instruction in the classroom
- Practice, engage, and build upon instruction in a workplace environment
  - *Real or simulated!*
- Earn additional certifications, accreditations, and wages



## #2: Effective Approaches

### **Ecosystem Development:**

- Education system responsiveness to local and regional talent demands
- Employers sponsor talent programs and hire graduates
- State and local policy support, intermediaries facilitate and integrate

### **Paid Programs:**

- Learners receive compensation for their time
- Learners receive credentials that have recognizable value

### **Employer Engagement:**

- Ideally financial buy-in

# #3: Challenges Remaining

## Employer Interest:

- Incentivizing industry participation is critical to the success of work-based learning and yet remains the biggest obstacle to effectiveness and scalability

## Accessibility:

- The system is not designed to serve mid-career or non-traditional learners despite being useful mechanisms for these individuals
- “Broken first rung” of the cybersecurity career ladder discouraging learners

# Recommendations

## **Prioritize local and regional ecosystem development:**

- Effectiveness of work-based learning depends on the learner's needs, the workforce needs, the program's ability to meet them, and the availability of funding

## **Create and support policies that encourage broader work-based learning participation:**

- State and local policy directly impacts work-based learning because it is more agile and responsive
  - *At least 38 states offer tax credits for hiring apprentices or tuition support for registered apprentices*



**Let's stay connected!**

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# Q&A



**We make  
security work.**



## Anthony Hernandez

Director of US Customer SOC

- Non-Traditional Hire
- Audit/Advisory Services
- 5 years
- Closet Tech Nerd (took me a few years to realize it)
- Operate one of the largest commercial Security Operations Center (SOC)



# Why Do Internships Work (in Cyber)?

## Cyber Security Internships/Apprenticeships

- Talent Pipeline
  - Improves culture and retention
- Provides Real World Experience
  - Real world tools
  - Bridges the entry level job experience
- Cost Effective
  - Less training
  - Build skills in specific industry, sectors
- Serves Nontraditional hires
  - Need diverse thinking in Cyber Security
  - Mid-career
  - Underserved communities





# Elephant in the Room? AI...

## AI's Impact on Cybersecurity internships and Entry-Level Roles

- Redefining Entry-Level Jobs
  - Phase Outs
  - Internships are more critical than ever!
- New Skills Requirements
  - Understand AI-enhanced cybersecurity tools (e.g., SOAR platforms)
  - Understand how AI policies, ethics, laws
- ***“Technology skills have an ever-shrinking half-life and employers need to be willing to provide training opportunities to their existing employees.”***
  - CSET Report



# How can YOU prepare for Cyber Security?

## List of items you should be doing now!

- Start a home lab
- Volunteer at a non profit or local business that needs help with their IT work
- Get a certification (Sec+, Net+ etc)
- Be involved in your local/non-local Cyber security community (Conferences, Cyber meet ups)
- Hack the Box
- Listen to Cyber Podcasts
- Learn to analyze networks now!



# Thank You



# Q&A



CENTER FOR **CYBERSECURITY**  
AT THE UNIVERSITY OF WEST FLORIDA


# **NICE Webinar: Building Cybersecurity Skills Through Work-Based Learning Experiences**

**Elizabeth Rasnick, Ph.D.**  
Center for Cybersecurity  
University of West Florida

**August 27, 2025**



# My Background

- Time in K-12: high school math and computer science
  - Time in industry: programmer analyst and on an incident response time
  - Time in post-secondary: IT and Cybersecurity courses
- 





# CyberSkills2Work

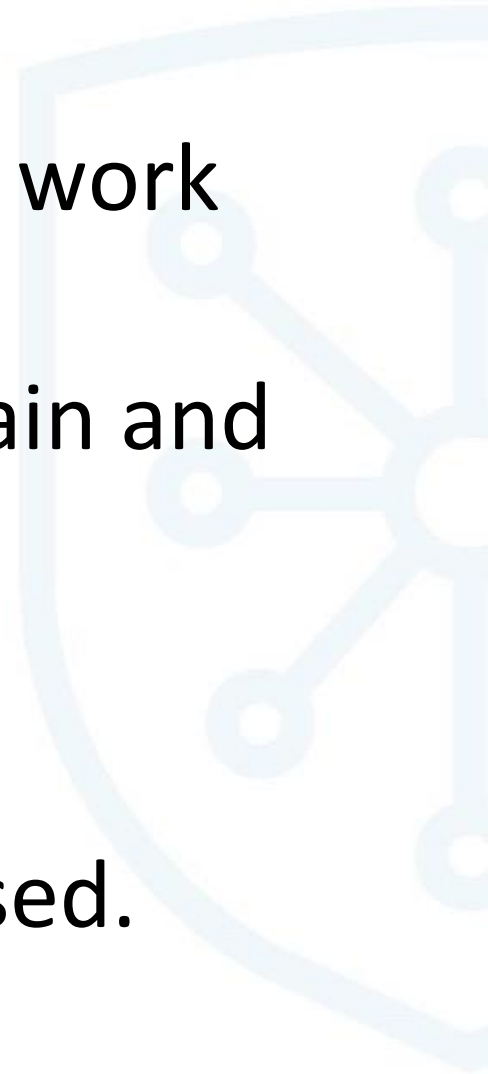
- Pathway-based workforce development program across multiple universities
- Along with certification and technical courses, learners receive professional development opportunities from members of the Employers Network
  - Resume reviews, mock interviews, mentorships
- Employers Network benefits
  - Access to freshly trained professionals with previous work history, many prior military





# Internships

- Many employers wanted proof of IT or cyber work experience.
- Internships offer a low-risk opportunity to train and test out potential hires.
- Well-run internships have a schedule and a structure.
- Can run for a period of time or as project-based.





# Internship Structure

- Advance meetings for learners and businesses to detail the expectations of the internship.
- Intentional pairing of students with employers.
- Weekly work logs that include:
  - Hours worked and tasks they were assigned and completed.
  - What knowledge and skills they used.
  - What topics did they need to learn more about on their own.





# Partnership Model

- Relationships with strong employers must be developed and maintained.
- Recommend having one or two people with partnerships as part of their normal duties.
- Employer partners interact with learners throughout and after their learning pathway.
  - Professional development opportunities and events.



# Q&A

# Panel Discussion



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<https://www.surveymonkey.com/r/Aug2025NICEWebinar>

# NICE Webinar Series

## Mental Health in Focus: Managing Burnout and Finding Balance in Cybersecurity

October 1, 2025, 2:00-3:00PM ET



