

# Apprenticeship Panel

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# Peregrine's Cyber Apprenticeship Program

- Peregrine developed and successfully executed in 2016, the first DOL cyber registered apprenticeship program (RAP) and in 2019, the first DoL cyber youth registered apprenticeship (YRA) in the nation, plus our current youth cybersecurity apprentice was a keynote speaker last year, [https://dnews.com/local/moscow-teen-on-a-cybersecurity-fast-track/article\\_32690d93-1198-50be-901e-a648775df059.html](https://dnews.com/local/moscow-teen-on-a-cybersecurity-fast-track/article_32690d93-1198-50be-901e-a648775df059.html)
- We are also one of the first 18 organizations selected by the DoL to be recognized as a Standards Recognition Entity (SRE), <https://www.apprenticeship.gov/employers/industry-recognized-apprenticeship-program/approved-standards-recognition-entities>, for cyber-security Industry Recognized Apprenticeship Programs (IRAPs) nation-wide in 2020.
- Appointed DOL Apprenticeship Ambassador in May 2022



# Peregrine is a true believer in Apprenticeships

- Our first HBZ cyber apprentice was featured <https://news.tcc.edu/way-alaska-meet-states-first-ever-cyber-security-apprentice/>.
- Wrote an academic paper entitled “Cyber Apprenticeship: A Traditional Solution to a Vexing New Problem”, Journal of Information Warfare
- Quoted in INC. <https://www.inc.com/michelle-cheng/cybersecurity-companies-will-soon-have-millions-of-jobs-they-cant-fill-heres-tactic-theyre-using-to-close-talent-gap.html>, which referenced HBZs.
- Our first YRA, was a Keynote Speaker for the National Initiative for CyberSecurity Education (NICE) K12 on 7-8 December 2020, and for that speech, he got a shout out from the Idaho Lt Governor - [https://dnews.com/local/moscow-teen-on-a-cybersecurity-fast-track/article\\_32690d93-1198-50be-901e-a648775df059.html](https://dnews.com/local/moscow-teen-on-a-cybersecurity-fast-track/article_32690d93-1198-50be-901e-a648775df059.html)
- Coordinated a session at the DoE EEx21 in August 2021, focused on “Building a Federal Cybersecurity Talent Base”.

# Purpose of this Panel

- To discuss the establishment of the first DOL approved cybersecurity registered apprenticeship at the adult and youth level in the nation
- Two viewpoints:
  - State Apprenticeship Agency (Commonwealth of Virginia)  
Patricia (Trish) Morrison, Director  
Division of Registered Apprenticeship  
Department of Labor and Industry
  - First Registered Cybersecurity Apprentice  
Ursula Jones, Goldbelt Inc (Juneau, AK)

# Everybody has the same issue Can't find enough Talent!!



We need a strong global cybersecurity workforce more than ever, but we are not doing enough to prepare young adults to be the next generation of cyber defenders and leaders. Young adults ages 18 to 26 from 12 countries told us:



# Clearances are key!

- Biggest hurdle for most DoD companies in hiring new cybersecurity talent
- Must be US citizen, with no misdemeanors or felonies
- Takes time to get and costs overhead dollars
- They may leave soon after, with no payback
- Internships or co-ops do not solve this issue



# Five Elements of an Apprenticeship

- Committee – TCC, DOLI VA and Peregrine
- Occupational Series – O\*Net with three types
- OTJ Competencies – matched to DoD 8570 and 8140 regulations to become an IAT 1
- Instructional Curriculum – worked with TCC for 100% online courses that will give training to pass certifications
- Standards – utilized new VA O\*Net rqmts



# Why an Apprenticeship is Best?

**ROI Comparison: Work Based Learning Options**

	Apprenticeship	Internship	Co-op
Active Enrollment in a Degree Pathway Required	NO	YES	YES
Average Length	12-24 months	3 months (1-2 rotations)	6 months (2-3 rotations)
New Hire Conversion Rate	91%	46%	28%
Retention Rate after 1 year	91%	70.6%	47.3%
Talent Acquisitions Cost (campus recruiting, sign-on bonuses, housing, relocation, etc.)	\$	\$\$\$	\$\$\$
Talent Supply Chain	Universities, Community Colleges, Bootcamps, Veterans, Career, Re-inventors, Returnships, incumbent Workforce, High Schools, NGO's	Universities	Universities
Federal Training and Wage Offsets	YES	NO	NO
Rate of Diverse Hires	41.8%**	While diversity hiring data is unavailable, according to NACE Trends and Predictions, 81% of employers have diversity recruiting efforts.	

\*Source: 2018 Internship & Co-op Survey, National Association of Colleges and Employers  
\*\*Source: 2016 Urban Institute report on all RAPIDS states illustrates people of color

## Cybersecurity Apprenticeships

**Cybersecurity apprenticeships ("earn while you learn") models represent a promising approach to attract, train, and retain a highly skilled cybersecurity workforce.**

Finding skilled cybersecurity talent is a well-known issue for employers in every sector. A method for increasing the supply of people with the desired combination of hands-on skills and academic knowledge is to build apprenticeship programs where participants can "earn while they learn." Apprenticeships may be an important mechanism for building a steady pipeline of job-ready talent and providing entry points for those switching careers, without advanced degrees, or re-entering the field.

The National Initiative for Cybersecurity Education (NICE) strategic plan includes "Experiment with the use of apprenticeship and cooperative education programs to provide an immediate workforce that can earn a salary while they learn the necessary skills."

**STUDENT BENEFITS**

- Earn wages and an industry-recognized credential
- Train with employer and position yourself for full-time employment
- Gain real-world job skills that can include earning college credits and/or industry certifications

**VETERAN BENEFITS**

- Access to Bill benefits for a monthly stipend in addition to an apprenticeship wage
- Funding for books and classroom supplies

**EMPLOYER BENEFITS**

- Develop highly-skilled talent that matches your needs
- "Try before you buy" - ensure good cultural and skill fit
- Lower cost to hire and high return on investment
- Lower turnover and improved employee retention
- Opportunities for tax credits and employer tuition benefits in some states

**91% of employers have to provide on-the-job training for technical roles.**

**CYBERSECURITY APPRENTICESHIP ROLES\***

- Secure Software Developer
- Cybersecurity Analyst
- Computer Forensics Analyst

**INDUSTRY-RECOGNIZED APPRENTICESHIPS**

For information on developing an apprenticeship program, contact the US Department of Labor: [www.trainyourfuture.gov](http://www.trainyourfuture.gov)

**Cybersecurity apprenticeships are a traditional solution to a young talent problem.**

- LA, apprentice employer, Nevada, VA

\* [http://www.nist.gov/plan/secureworkforce/cybersecurity\\_plan\\_031516.pdf](http://www.nist.gov/plan/secureworkforce/cybersecurity_plan_031516.pdf)







# Additional Advantages of an Apprenticeship

- Increased Net Income (Profit) by using apprentices on direct charge tasks
- Discounted training costs as these new staff are registered with the Commonwealth – there are many types of savings that may be available depending on what grants are available to the community college.
- There are also tax benefits available that DOLI and the community college can help the employer understand.
- Increased retention and reduced turnover - apprenticeships have other financial incentive, which translates into recruiting costs.  
<https://www.doli.virginia.gov/apprenticeship/>
- A path to certifications, clearances a Common Access Card (CAC)



## Panelists Thoughts on Cybersecurity Apprenticeships

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# Summary

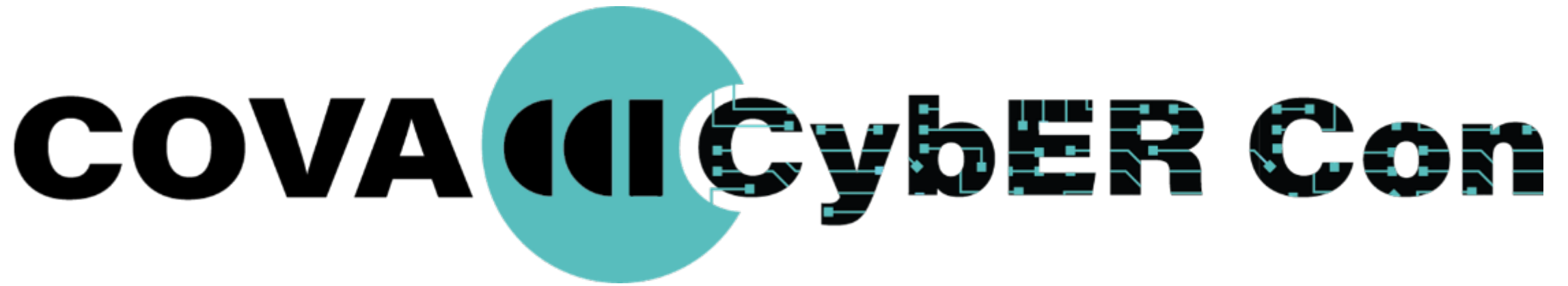
This panel was developed to discuss how DOL approved cybersecurity apprenticeships. effort is our attempt to solve some of the cyber staffing issues. Peregrine has worked very closely with TCC, TNCC and DOLI VA to develop these first cyber apprenticeship in the Nation. Continually update plan to match DoD / NIST workforce recommendations. Our staff can support other organizations to build their own registered model

The infographic titled "RAMPS for Cybersecurity Education and Workforce" provides an overview of the initiative. It states that the National Initiative for Cybersecurity Education (NICE) funding opportunities is built on stakeholder workforce partnerships of employers, schools and institutions of higher education, and other community organizations. These funding opportunities provide avenues to create **Regional Alliances and Multistakeholder Partnerships to Stimulate (RAMPS) Cybersecurity Education and Workforce Development**. These partnerships focus on engaging multiple employers with skill shortages in specific cybersecurity work roles to focus on developing the skilled workforce to meet industry needs within the local or regional economy.

**RAMPS PROGRAMS**

- The Partnership to Advance Cybersecurity Education and Training (PACT)**  
Led by State University of New York, Albany  
The goal is to identify the entry-level cybersecurity workforce needs in the New York Capital District, test the alignment of academic, education, professional training, internships, or job placement, by evaluating the needs of the local economy. They will use the NICE Cybersecurity Workforce Program as a model to create a multi-stakeholder program available and industry-specific requirements in an attempt to align the test and to improve the quality and success of local cybersecurity talent entering the workforce.
- The Hampton Roads Cybersecurity Education, Workforce and Economic Development Alliance (HR Cyber)**  
Led by Old Dominion University  
The goal is to create a collaborative pathway between educational institutions, government agencies, non-profit organizations, and private employers focused on developing educational pathways from high school through community college, to four-year institutions, and on to advanced degree and job-ready workforce cybersecurity roles for the region. Goals of the partnership include coordinating course delivery and training programs, aligning training the cybersecurity capabilities of the regional workforce, and more.
- Central and Western Cyber Corridor (Cin Day Cyber)**  
Led by the Southeastern Ohio Council of Higher Education  
The Southeastern Ohio and Western Ohio will advance the Cin Day Cyber regional alliance of over 20 partners to include cybersecurity education and workforce development to scale to the growth of a highly skilled cybersecurity workforce for both government and private industry. Cin Day Cyber will leverage a strong university and K-12 presence in cybersecurity, allowing a well-developed talent pipeline and meet open industry demands.
- Cyber Prep Program**  
Led by Pike-Peak Community College  
The Pike Peak regional cybersecurity alliance has engaged more than 18 partners to help train to boost cybersecurity careers by defining cybersecurity career pathways, supporting the development and growth of cybersecurity programs in area high schools and offering work meaningful work experiences, including internships and apprenticeships.
- The Arizona Statewide Cyber Workforce Consortium**  
Led by Chicanos Por La Causa  
The Consortium is committed to developing a unified approach to meeting the cybersecurity workforce and education needs in Arizona. This is being done by collecting a number of ongoing efforts throughout the state and creating a dynamic and collaborative partnership. The consortium is working with state and local partners ranging from K-12, higher education, workforce, and the open community as a whole.

**NICE** National Initiative for Cybersecurity Education  
[nist.gov/nice](http://nist.gov/nice)  
**NIST** National Institute of Standards and Technology  
U.S. Department of Commerce



Questions?

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