

# NICE

NATIONAL INITIATIVE FOR **CYBERSECURITY** EDUCATION



## ***Component 3: Workforce Structure - Professionalization***

*Angela Curry, Director, National Cybersecurity Workforce Structure Strategy*

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# NICE BACKGROUND

*The National Initiative for Cybersecurity Education (NICE) is led by the National Institute of Standards and Technology (NIST). NICE is a national-coordinated effort comprised of over 20 federal departments and agencies.*

- The primary goal of NICE is to accelerate the availability of educational and training resources to improve the cyber behavior, skills, and knowledge of every segment of the US population, enabling a safer cyberspace for all. NICE extends the scope of its work beyond the federal workplace to include students in kindergarten through post-graduate school.
- NICE is represented by four components:
  - **C1 Awareness:** Increase the understanding of cyber threats and empower the nation to be safer and more secure online through a national cybersecurity awareness campaign
  - **C2 Education:** Develop the next generation of cybersecurity workers and encourage interest in science, 128 technology, engineering, and mathematics (STEM) disciplines
  - **C3 Workforce Structure:** Lay a foundation to evaluate the needs of professionalizing a cybersecurity workforce, workforce planning for the cybersecurity field, and recruitment and retention strategies for the nation
  - **C4 Training and Professional Development:** Develop the NICE Framework and working towards finalization and acceptance of the Framework by March 2012. The ongoing work includes continuing socialization of the Framework, developing a training catalog, and building professional development roadmaps
  - The **National Institute for Cybersecurity Studies (NICS) portal** will serve as a national online resource for information about cybersecurity awareness, education, careers, and professional development and will be the primary outlet for DHS and its partners to implement the NICE Framework

# COMPONENT 3 INTRODUCTION

*Component 3 aims to increase the quality of the cybersecurity workforce by determining the merits of professionalizing certain specialty areas within the NICE Framework; delivering a recommended method to help organizations better forecast their cybersecurity workforce needs; and developing a strategy to recruit and retain a cybersecurity workforce for the Nation.*

## Three complimentary focus areas:

- **Professionalization** - Component 3 will study the application of professionalizing certain specialty areas within the NICE framework, and recommend baseline competencies and knowledge for certain ones
- **Workforce Planning** - Component 3 aims to deliver a methodology for accurately forecasting cybersecurity workforces across the workforce to help organizations better predict future cybersecurity needs
- **Recruitment and Retention** - Component 3 intends to analyze the recruitment and retention strategies of other career fields in order to provide a best practice resource to help other organizations recruit and retain cybersecurity professionals



# COMPONENT 3 MILESTONES AND UPDATES

## Milestones

- Component 3 established a Charter Group, comprised of 13 Federal departments and agencies. The Charter Group serves as a body of trusted advisors to C3 projects by providing a means through which to socialize ideas, and get contributions to, and feedback for, project content and development.

## Updates

- **Professionalization** – Component 3 is conducting research for a historical case study of how other career groups have executed the professionalization process to inform recommendations for professionalizing certain specialty areas within the field
- **Workforce Planning** – Component 3 is conducting research into workforce planning best practices and processes. Research includes looking at how organizations have already started to evaluate forecasting for cyber professionals and how cybersecurity changes the game, or what nuances should be taken into consideration for this field
- **Recruitment and Retention** – Component 3 is developing a cybersecurity professional profile through information collected from focus groups of individuals at all career levels and across all sectors (Federal, state, local, and tribal governments, industry, academia, non-profits, etc.). The information obtained will shape a national recruitment strategy and a national retention strategy for cybersecurity

# PROFESSIONALIZATION

# PROFESSIONALIZATION –DEFINITION

*The Fontana Dictionary of Modern Thought defines professionalization as, “when a profession arises when any trade or occupation transforms itself through the development of formal qualifications based upon education, apprenticeship, and examinations, the emergence of regulatory bodies with powers to admit and discipline members, and some degree of monopoly rights.”*

# OBJECTIVES

## Objective 1

- Research potential professionalization processes, and the impacts of each, by examining the history and procedures of occupations which have professionalized

## Objective 2

- Analyze need for professionalizing cybersecurity workforce, and, if professionalization is deemed necessary, evaluate which of the 31 cybersecurity specialty areas will be professionalized

## Objective 3

- Provide a set of governance standards for professionalization

## Objective 4

- Socialize Professionalization implementation plan with Federal, State, Local, Tribal and Territorial governments and industry

# PROFESSIONALIZATION – OBJECTIVE 1

**Research potential professionalization processes, and the impacts of each, by examining the history and procedures of occupations which have professionalized**

- *Examine historical case studies of occupations which have evolved into an accepted profession*
- *Understand how other occupations have professionalized, and evaluate the impacts (to include legal and financial) of professionalizing the cybersecurity workforce*



# PROFESSIONALIZATION – HISTORICAL ANALYSIS

NICE Component 3 team is researching historic examples of other professions and how they became professionalized. The professions being examined are:



Air Traffic Controller



Firefighter



Contract Specialist



Physician



# PROFESSIONALIZATION – OBJECTIVE 2

**Analyze need for professionalizing cybersecurity workforce, and, if professionalization is deemed necessary, evaluate which of the 31 cybersecurity specialty areas will be professionalized**

- *Work with stakeholders to determine the merits of, and define a criteria for evaluating, the professionalization of cybersecurity specialties based on research findings*
- *The evaluation of professionalization will include all stakeholders at a national level including Federal & SLTT governments, academic institutions, non-profits, and private industry through multiple public forums and other data gathering efforts. Transparency of this activity is not only critical, but a foundation of this project*



# PROFESSIONALIZATION - METHODOLOGY

- *The historical research will allow the NICE Component 3 team and its stakeholders to assess best practices in professionalizing and create a methodology for assessing the professionalization needs of the NICE Framework's 31 Specialty Areas*
- *This methodology will not only apply to the current 31 specialty areas, but will be applicable to any future specialty areas added to the Framework*



# PROFESSIONALIZATION – OBJECTIVE 3

## Provide a set of governance standards for professionalization

- *If a professionalization need is identified, the Component 3: Cybersecurity Professionalization Analysis project will build an implementation plan to institute a program and lay out policies and procedures for governing the professionalization of identified cybersecurity specialty areas*



# PROFESSIONALIZATION – GOVERNANCE STANDARDS

- *These Governance Standards will create a guiding set of rules and procedures to follow for making a determination on the professionalization of a Specialty Area*
- *This process ensures a consistent procedure for making recommendations on the professionalization of a NICE Framework Specialty Area*



# PROFESSIONALIZATION – OBJECTIVE 4

**Socialize Professionalization implementation plan with Federal, State, Local, Tribal and Territorial governments and industry.**

- *If professionalization is deemed necessary, based on the August 2011 NICE Strategic Plan:*
  - *Federal adoption for determining cybersecurity professionalization will occur by the end of 2013*
  - *Socialization among SLTT governments and industry by the end of 2015*



# PROFESSIONALIZATION – SOCIALIZATION

*Component 3 primarily engages with the Charter Group, a group of primary stakeholders expected to serve as trusted advisors. The Charter Group includes representatives from the following organizations:*

- Department of Homeland Security (DHS)
- DHS National Cyber Security Division (DHS NCSD)
- Office of the Director of National Intelligence (ODNI)
- Department of Labor (DoL)
- Department of Education (DoE)
- Office of Personnel Management (OPM)
- National Institute of Standards and Technology (NIST)
- National Security Agency (NSA)
- State Department (State Dept.)
- Veteran's Affairs
- Department of Defense (DoD)
- U.S. Navy
- US CYBERCOM



# UPCOMING MILESTONES

Objective	Deliverables/Activities	Deadline
Research potential professionalization processes, and the impacts of each, by examining the history and procedures of occupations which have professionalized	Historical report of professionalization	April 2012
Analyze need for professionalizing cybersecurity workforce, and, if professionalization is deemed necessary, evaluate which of the 31 cybersecurity specialty areas will be professionalized	Professionalization best practices analysis report	August 2012
	Report identifying specialty areas to be professionalized	November 2012
Provide a set of governance standards for professionalization	Implementation plan for professionalizing existing specialty areas	March 2013
Socialize Professionalization implementation plan with Federal, State, Local, Tribal and Territorial governments and industry	Meeting minutes gaining consensus on the professionalization implementation plan	Ongoing

# CHALLENGES

- The approval process for confirming the professionalization of an existing or future specialty area is yet to be determined.
- Who will evaluate the professionalization needs of the classified specialty areas?