



*A New Day for the Civil Service*

## Cybersecurity Workforce Structure

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# Overview

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- Drivers and Direction
- National Initiative for Cybersecurity Education
- Track 3 Objectives
- Approach
  - Phase 1, Define the Workforce
  - Phase 2, Develop Competency Models
  - Phase 3, Analyze Challenges
  - Phase 4, Develop HR Strategies
- Next Steps

# Drivers and Direction

[We] will be unable to combat...threats without a more coordinated, sustained effort to increase cybersecurity expertise in the federal workforce.

*Partnership for Public Service*

All the Services are desperately short of people who have defensive and offensive cybersecurity war skills.

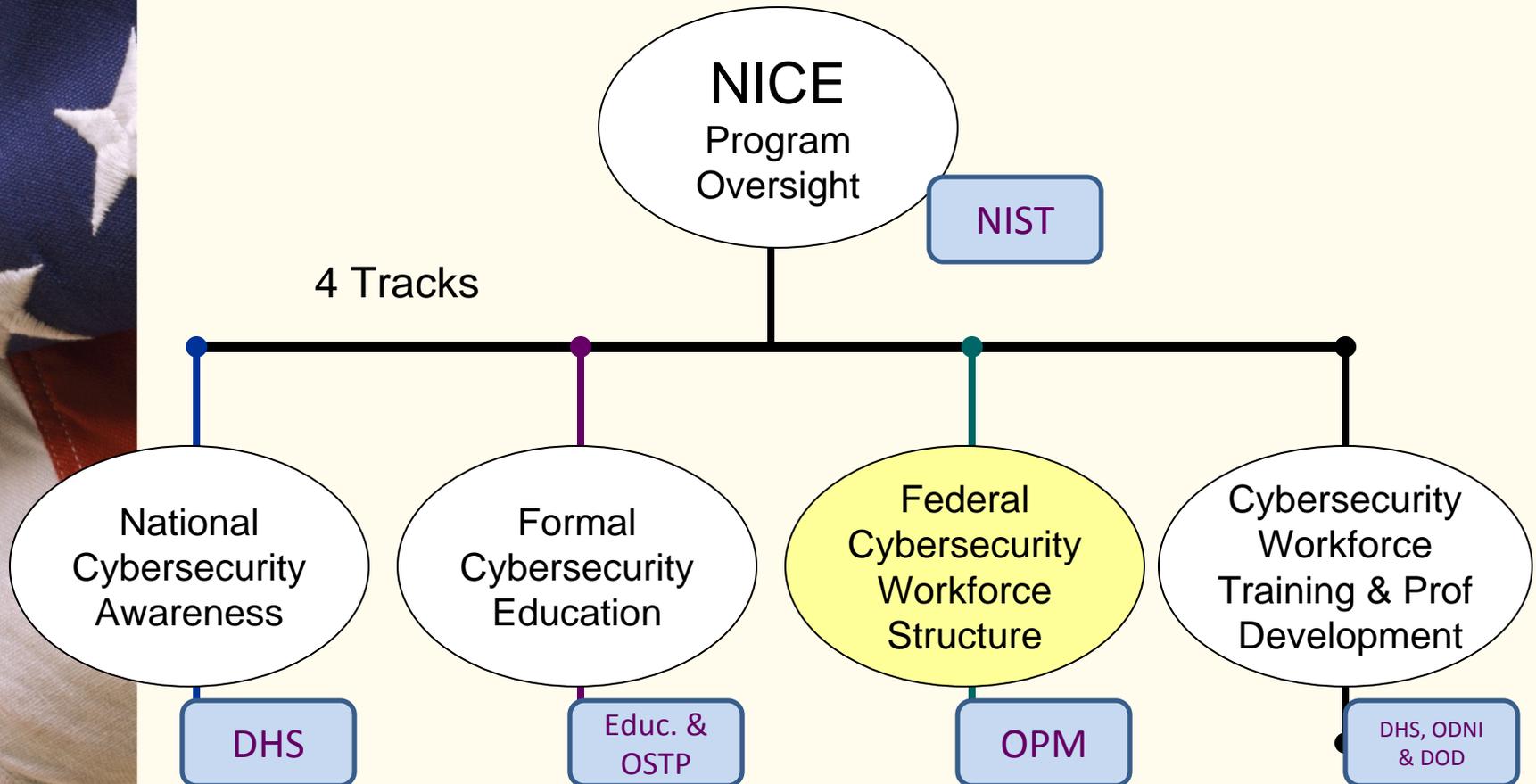
*Defense Secretary Robert Gates*

There are about 1,000 people in the entire United States with the skills needed for...frontline cyber defense, but 20 or 30 times that many are needed.

*NPR's Morning Edition 7/19/10*

***“Develop a strategy to expand and train the workforce, including attracting and retaining cybersecurity expertise in the Federal government” (Cyberspace Policy Review, May 2009)***

# National Initiative for Cybersecurity Education (NICE) Structure



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# Track 3 Objectives

- Implement strategies to ensure federal agencies can attract, recruit, and retain skilled employees to accomplish cybersecurity missions
- What skills do we need today and in the future?
- How can we help agencies meet their future workforce needs?

# Approach

Phase 1	Phase 2	Phase 3	Phase 4
<ul style="list-style-type: none"><li>• Define Cybersecurity Work</li></ul>	<ul style="list-style-type: none"><li>• Develop Competency Models</li></ul>	<ul style="list-style-type: none"><li>• Analyze issues, challenges, successful practices</li></ul>	<ul style="list-style-type: none"><li>• Review and revise HR policies and strategies</li></ul>
<ul style="list-style-type: none"><li>• <i>On-going</i></li></ul>	<ul style="list-style-type: none"><li>• <i>On-going</i></li></ul>	<ul style="list-style-type: none"><li>• <i>On-going</i></li></ul>	<ul style="list-style-type: none"><li>• <i>Future</i></li></ul>

***Collaboration and input from Federal agencies are critical***

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# Phase 1 – Define the Work

- Group cybersecurity work into 3 categories:
  - Network Operations and Defense
  - Law Enforcement and Counterintelligence
  - Specialized Computer Network Operations
- Ensure consistency and common taxonomy across NICE Tracks
- Challenges remain to scoping the overall workforce



# Network Operations and Defense

- Those Federal civilian employees, members of the uniformed services, and contractor personnel who are categorized as IT professionals with particular responsibility for the security of Federal IT systems, networks, and/or information
- Examples:
  - Information Security
  - Security Operations
  - Information Assurance
  - Network Operations and Maintenance
  - Network Security
  - Systems Engineering and Architecture
  - Vulnerability Analysis
  - Contract Management and Oversight

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# Law Enforcement & Counterintelligence

- Those Federal civilian employees, members of the uniformed services, and contractor personnel who are participating in law enforcement and counterintelligence activities that may involve IT systems, networks, and/or information
- Examples:
  - Digital Forensics
  - Cyber Crime Investigations
  - Intrusion Detection
  - Penetration Testing
  - Research and Development

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# Specialized Computer Network Operations

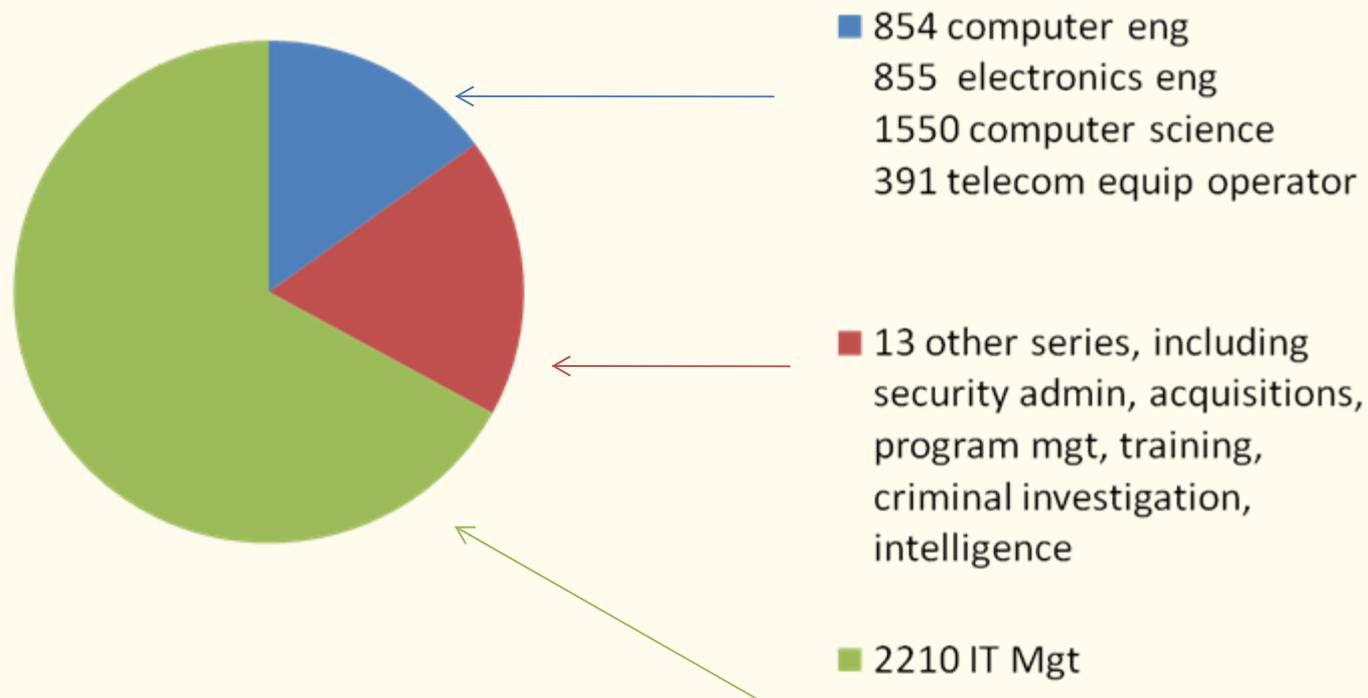
- Those Federal civilian employees, members of the uniformed services, and contractor personnel employed by departments and agencies who are engaged in highly specialized (and largely classified) cybersecurity operations
- Examples:
  - Cryptography
  - Information Warfare
  - Intelligence Analysis

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# Challenges

- Positions not easily identified in HR databases
- Federal employment data maintained by occupational series
- Cybersecurity positions currently classified in at least 18 different series, including IT management, criminal investigator, computer engineer
- Only some of the jobs in any of those series are cybersecurity

# Occupational Series Included in Cybersecurity Workforce Definition



Preliminary Findings

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## Phase 2 – Develop Competency Models

- Completed Actions:
  - Analyzed cybersecurity jobs, tasks, skill requirements and competencies (Jan 2010)
  - Subject matter experts reviewed tasks and competencies (June 2010)
  - Linked tasks to competencies (July 2010)
  - Workforce survey (Oct 2010)
- Competency models will guide further analysis and review of HR policies

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## Phase 3 – Analyze Workforce Issues

- Working with agencies to identify and analyze barriers, challenges, and successful practices
- Expect issues in these areas:
  - Classification
  - Recruiting/Hiring
  - Pay and benefits
- Focus groups with hiring managers, employees, recruiters and cybersecurity experts
  - Held sessions on August 12 and October 18
  - Upcoming -- November 17, 9-12:30 and 1-4:30
  - Contact:
    - Gail Redd, 202-606-1521, [gail.redd@opm.gov](mailto:gail.redd@opm.gov)
    - Roger Knadle, 202-606-2503, [roger.knadle@opm.gov](mailto:roger.knadle@opm.gov)

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# Barriers/Challenges Identified So Far

- Talent shortage
- Competition for talent
  - From private sector
  - Among agencies
  - Often attributed to pay competition
- Pace of mission change and lack of occupational definition with well-understood qualifications requirements
- Resource constraints
- Disconnect between agency hiring managers and HR staff
- Hiring process that confuses candidates and dissatisfies hiring managers
- Insufficient focus on what Feds have to offer

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# Cybersecurity Workforce Recruiting/Hiring

- Recruiting sources
  - Colleges, Scholarship for Service, Agency Scholarship Program
  - Summer intern programs
  - Contractors
  - Other agencies
  - USAJOBS
- Hiring processes
  - “Regular” Title 5
  - Student employment (STEP and SCEP)
  - Schedule A
  - Direct hire
  - Agency-specific authorities for some agencies outside of Title 5 by law, e.g. NSA

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# Cybersecurity Pay

- Differing pay systems – Title 5 and others
- Special rates above usual GS rates
- Agency-specific pay schedules and systems
- Use of pay flexibilities
- Recruitment, retention, and relocation incentives (3 Rs)

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# Phase 4 – Develop HR Strategies

- Future work includes assessing changes that may be needed for classification, recruitment, staffing and other HR policies
- Working with agencies to support current requirements:
  - Schedule A hiring authority granted to several agencies
  - Use of hiring flexibilities to meet recruitment needs
  - OPM established shared register for IT positions
- Working on assessment tools for agency use beginning in 2011

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# Solutions Suggested So Far

- Invest more in students
- New occupation definition, classification/qualification standards
- New shared register
- Establish government-wide certification requirements
- Map a government-wide cybersecurity career path
- Additional hiring flexibilities for agencies
- Boost pay / use flexibilities
- Networks for cybersecurity professionals
- Pilot cybersecurity test labs
- Leverage communities of practice
- Promote cutting edge work done in Federal agencies
- Invest in management skills

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# We Need Your Help!

- Participate in focus group November 17
- Give us your thoughts:
  - How can Federal agencies compete for talent?
  - How can HR policies and tools better meet the need?
  - How are we communicating opportunities?
  - How can we work together to attract the right talent?
- Let OPM know about recruitment and retention challenges and successes
- Contacts:
  - Jacqueline Caldwell (202) 606-2308, [jacque.caldwell@opm.gov](mailto:jacque.caldwell@opm.gov)
  - Gail Redd (202) 606-1521, [gail.redd@opm.gov](mailto:gail.redd@opm.gov)

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# Summary

- Together we can implement strategies to ensure Federal agencies can attract, recruit, and retain skilled employees to accomplish cybersecurity missions



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