Shaping the Future of Cybersecurity Education

Is N.I.C.E.

NATIONAL INITIATIVE FOR CYBERSECURITY EDUCATION (NICE)

March 2011
# 60 Day Cyber Review

## Building Capacity for a Digital Nation

- Promote cybersecurity risk awareness for all citizens;
- Build an education system that will enhance understanding of cybersecurity and allow the United States to retain and expand upon its scientific, engineering, and market leadership in information technology;
- Expand and train the workforce to protect the Nation’s competitive advantage; and
- Help organizations and individuals make smart choices as they manage risk.

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*60-Day Cyber Review*
(U) National Initiative for Cybersecurity Education

“...a national campaign to promote cybersecurity awareness and digital literacy from our boardrooms to our classrooms, and to build a digital workforce for the 21st century.”

President Barack Obama, 29 May 2009
Expanded Focus of NICE

**CNCI Initiative #8**
- Federal Focus
- Federal Employee Awareness
- Education/training focused on filling federal jobs
- Federal Pipeline

**National Education**
- National Focus
- Public Awareness
- K-12 and Higher Education
- National Pipeline

Formal Cybersecurity Education – *Department of Education* (ED), *National Science Foundation* (NSF) Co-Leads [Office of Science and Technology Policy (OSTP), Department of Labor (DOL), DHS supporting]:

STEM education programs related to cybersecurity

Federal Cybersecurity Workforce Structure – *Office of Personnel Management* (OPM) [Office of Management and Budget (OMB), Office of the Director of National Intelligence (ODNI) supporting]:

Defined cybersecurity jobs, attract, recruit and retain strategies

Cybersecurity Workforce Training and Professional Development

Department of Defense (DoD), ODNI, DHS Tri-Leads:

- General IT Use – Federal Chief Information Officer Council and DHS
- IT Infrastructure, Operations, Maintenance & Information Assurance – DoD, DHS
- **Domestic Law Enforcement and Counterintelligence** – Department of Defense Cyber Crime Center (DC3), National Counterintelligence Executive (NCIX), Department of Justice, and DHS
- Specialized Cybersecurity Operations – NSA
Initiative #8 - Achievements

- Building of federal training programs on a variety of computer network programs

- Workforce Development Plans (work roles, competencies, knowledge, skills, and abilities (KSAs); that have become part of the framework for the national effort.

- Centers of Academic Excellence for Information Assurance extension to Community Colleges

- Building the virtual cybersecurity training environment for the Federal Government

- Expansion of the Department of Defense Cyber Crime Center (DC3), organization’s computer forensic and analysis courses for the entire Federal government.

- Framework issues - identifying the main issues of workforce pipeline and need for consistent lexicon to build the national effort
Annual Initiative for Cybersecurity Education

Lead:
National Institute of Standards and Technology – Ernest McDuffie, PhD
The Pipeline

K thru Middle School

High School

public, charter
rural, urban, Title I

AP

Standard

CS, IS, EE

Other STEM

Non-STEM

Vocational
Technical

University/College,
Community College,
Vocational/Technical

Graduate,
Professional
Degree Programs

Training,
Licensing,
Certification
Programs

Graduate

Professional

Licensing
Certification

PhD
Professional
Degree
Masters
BA, BS, AA
Certificate,
License
Security-capable
user

Digital Nation

Cyber Security
Researchers
Cyber Security
Professionals

Cyber Security
Capable Workforce
Cyber Security
Aware Citizens

Pipeline Stakeholders:
- Students
- Parents
- Teachers
- Educational Institutions
- State, Local
Government
- Professional
Organizations
- Commercial Sector
- Federal Government

Pipeline Substrates:
- Curriculum
- Ontologies,
Taxonomies
- Standards
- Teacher Preparation
- Public Awareness
- Education Technologies
- Science and Practice of
Learning
National Cybersecurity Awareness

Lead:
Department of Homeland Security – Tim Fraser
**Track 2: K-12 & Higher Education**

**Formal Cybersecurity Education**

Co-Leads:
Department of Education – Michael Lach
National Science Foundation – Jan Cuny
Cybersecurity Workforce Structure

Lead:
Office of Personnel Management – Maureen Higgins
Cybersecurity Workforce Training and Professional Development

Tri-Leads: ODNI/CHCO – Elizabeth Kolmstetter, PhD
DHS – Peggy Maxson
DOD – John Mills
QUESTIONS?
Contact Information

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