

Shaping the Future of Cybersecurity Education

Is N.I.C.E.

**NATIONAL INITIATIVE FOR CYBERSECURITY
EDUCATION (NICE)**

September 2010



THE PRESENT

Comprehensive National Cybersecurity Initiative



Training the existing federal cyber workforce in specialized skills and ensuring a federal cybersecurity workforce pipeline for the future.

Initiative #8, *Expand Cyber Education*

60 Day Cyber Review

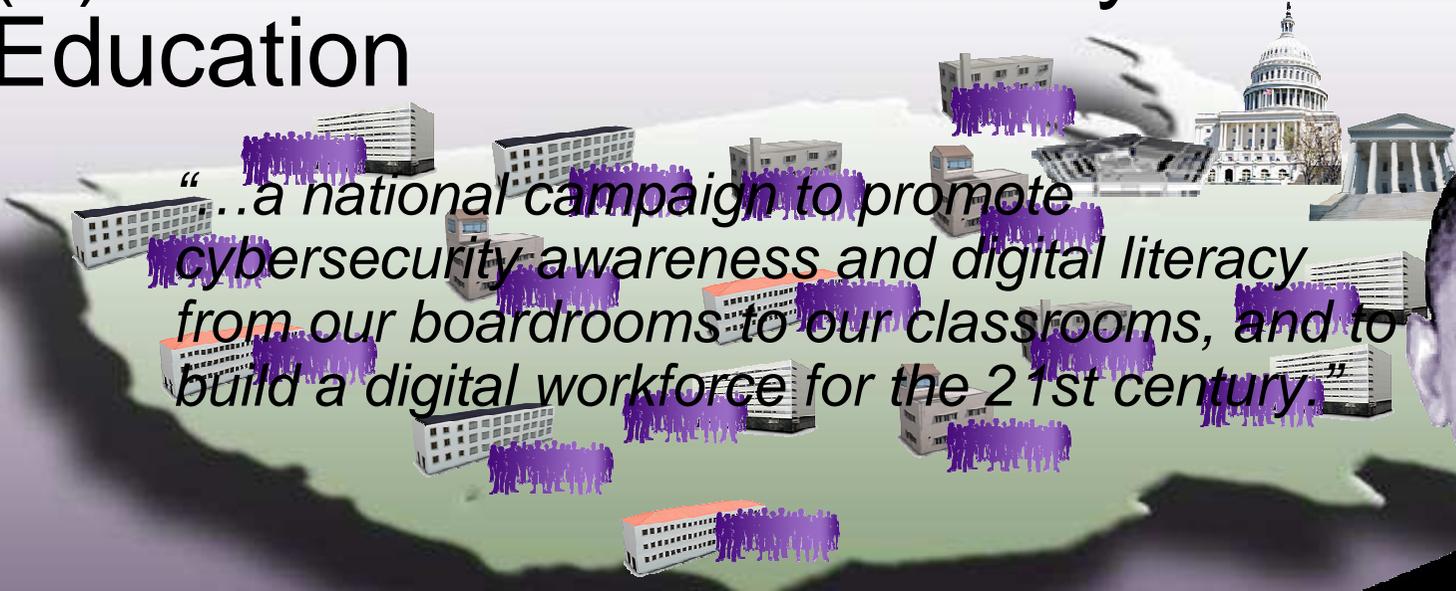
Building Capacity for a Digital Nation

- 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.

60-Day Cyber Review

THE VISION

(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

CNCI Initiative #8

National Education

Federal Focus



National Focus

Federal Employee
Awareness



Public Awareness

Education/training
focused on filling
federal jobs



K-12 and Higher
Education

Federal Pipeline



National Pipeline

THE PATH

**National Cybersecurity Awareness – DHS**

Public Service Campaigns



Formal Cybersecurity Education – ED [OSTP, DOL, DHS supporting]
STEM education programs related to cybersecurity



Federal Cybersecurity Workforce Structure – OPM [OMB, ODNI supporting]

Defined cybersecurity jobs, attract, recruit and retain strategies

**Cybersecurity Workforce Training and Professional Development**

DoD, ODNI, DHS Tri-Leads

- General IT Use – DoD and DHS
- IT Infrastructure, Operations, Maintenance & Information Assurance – DoD, DHS
- Domestic Law Enforcement and Counterintelligence – Lead TBD
- Specialized Cybersecurity Operations – NSA

Initiative #8 - Achievements

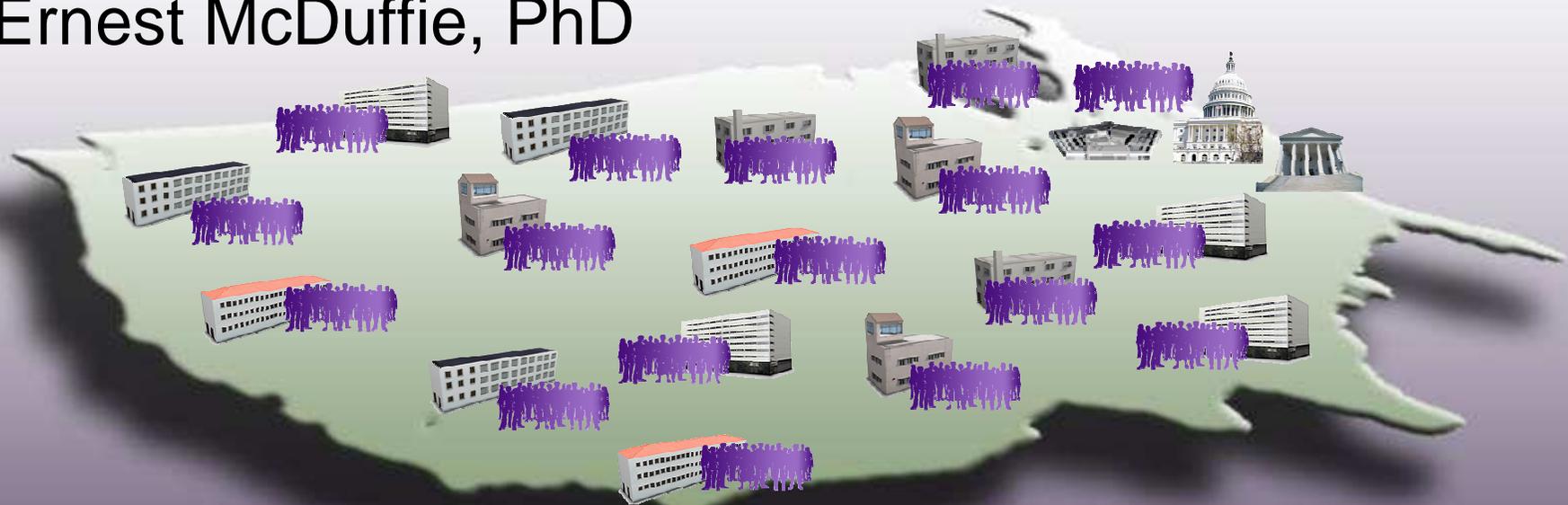
- Building of federal training programs on a variety of computer network programs
- Workforce Development Plans (work roles, competencies, knowledge, skills, and abilities (KSAs); that have become part of the framework for the national effort.
- Centers of Academic Excellence for Information Assurance extension to Community Colleges
- Building the virtual cybersecurity training environment for the Federal Government
- Expansion of the 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

OVERALL LEAD: Cybersecurity Education

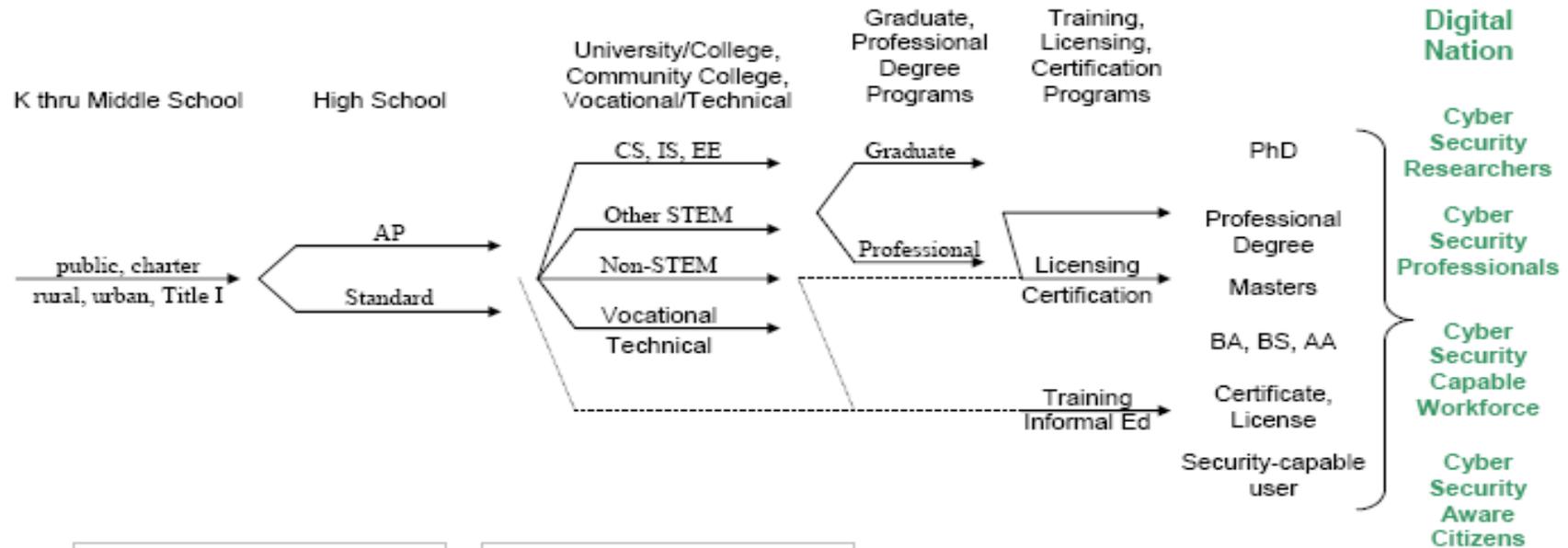
National Initiative for Cybersecurity Education

Lead:

National Institute of Standards and Technology –
Ernest McDuffie, PhD



The Pipeline



- 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

TRACK 1: Public Campaign

TRACK

1

AWARENESS

National Cybersecurity Awareness

Lead:

Department of Homeland Security – Tim Fraser



TRACK 2: K-12 & Higher Education

TRACK
2

EDUCATION

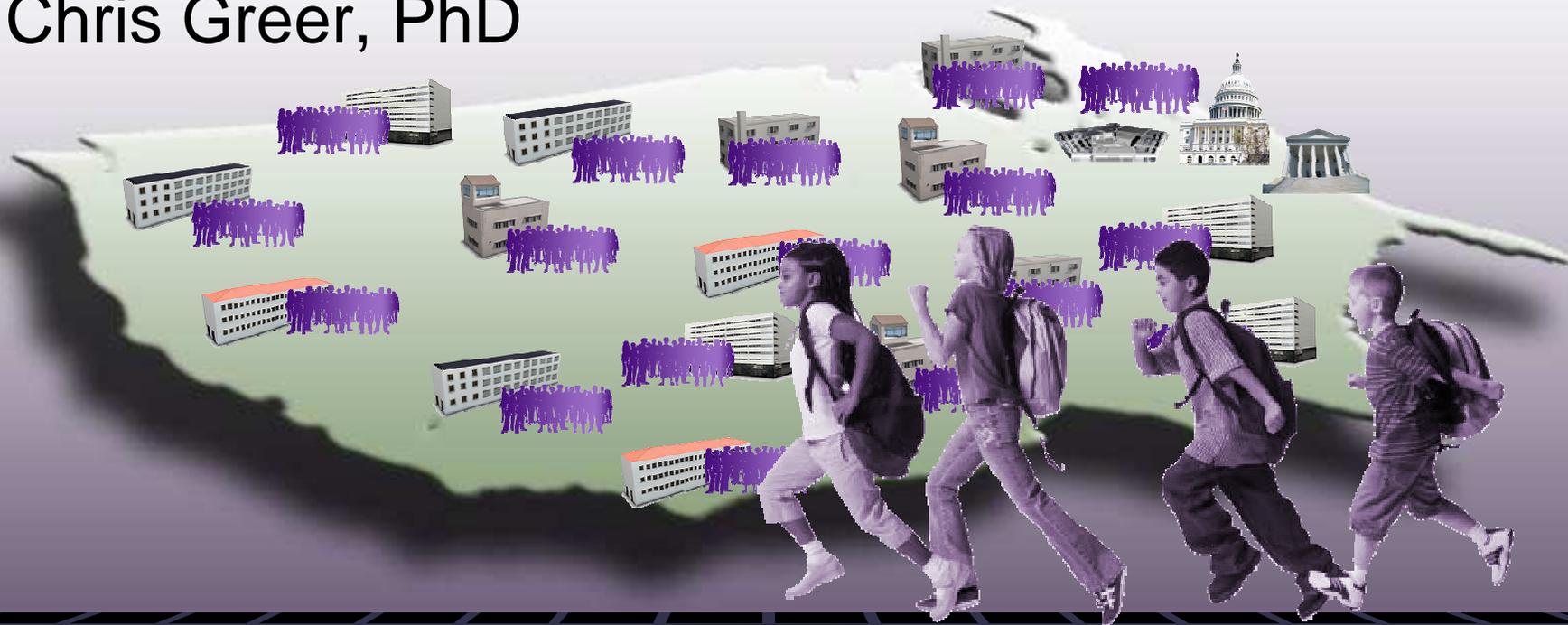
Formal Cybersecurity Education

Co-leads:

Department of Education – Bucky Methfessel

Office of Science and Technology Policy –

Chris Greer, PhD



TRACK 3: Recruitment, Hiring, Job-Series

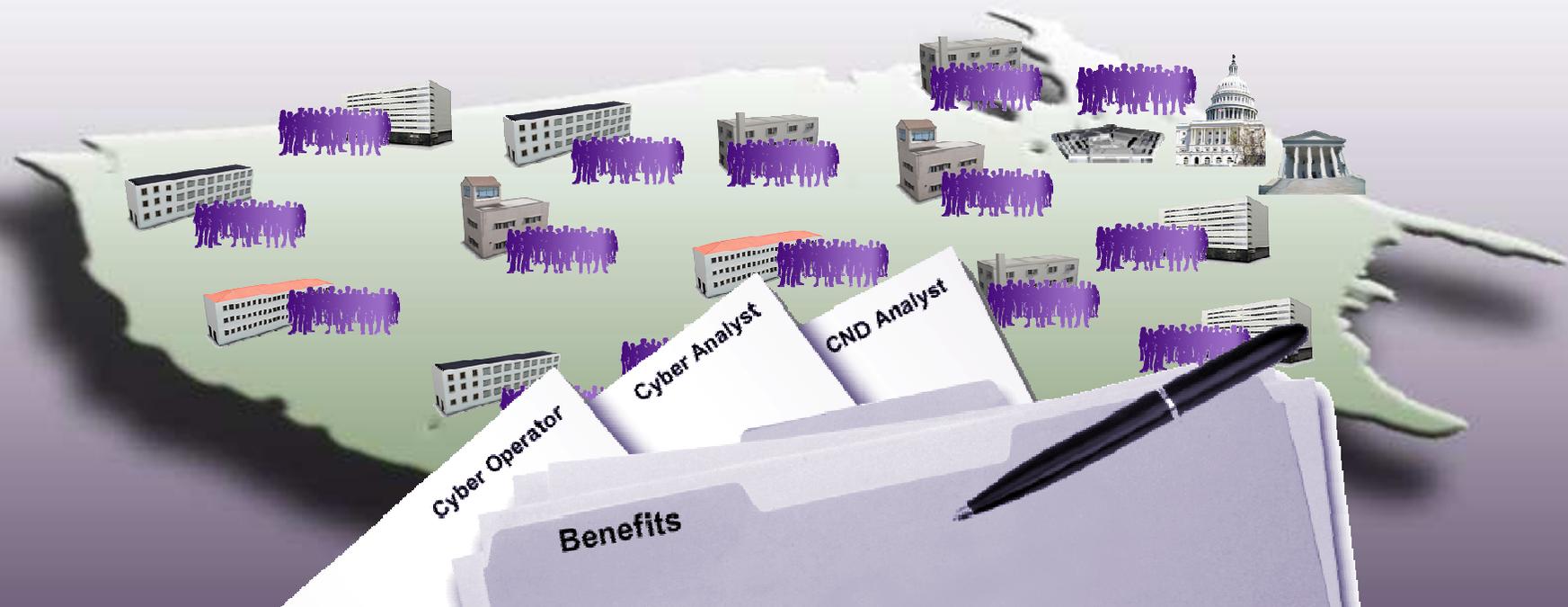
TRACK
3

STRUCTURE

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

- Dr. Ernest L. McDuffie
- <http://www.nist.gov/nice>
- Email: ernest.mcduffie@nist.gov
- Phone: 301.975.8897