

National Initiative for Cybersecurity Education (NICE) Relationship to President's Education Agenda 19 April 2010

The National Initiative for Cybersecurity Education (NICE) represents the continual evolution of Comprehensive National Cybersecurity Initiative (CNCI) 8, as its scope has recently been expanded from a Federal focus to a larger National focus. The National Institute of Standards and Technology (NIST) has assumed the overall coordination role for the effort and is currently identifying resources to be applied to this Initiative, reviewing all related previous activities, and developing a strategic framework and a tactical plan of operation to support that framework. This expansion and the new overall coordination role by NIST are in response to the President's priorities as expressed in Chapter 11, *Building Capacity for a Digital Nation*, of the President's *Cyberspace Policy Review*, and result from decisions made by the National Security Staff's (NSS) Cybersecurity Directorate and the Office of the Director of National Intelligence's (ODNI) Joint Interagency Cyber Task Force (JIACTF).

NIST will ensure the coordination, cooperation, focus, public engagement, technology transfer, and sustainability of NICE in order to achieve its objectives. NICE will establish an operational, sustainable, and continually improving cybersecurity education program for multiple segments of the nation on correct application of sound cyber practices. Success for this effort will see the enhancement of the overall security posture of the United States.

To meet NICE objectives, efforts have been structured into the following four tracks:

- **Track 1: National Cybersecurity Awareness (Lead: DHS).** Public service campaigns to promote cybersecurity and responsible use of the Internet as well as making cybersecurity popular for children as well as a popular educational and career pursuit for older students.
- **Track 2: Formal Cybersecurity Education (Co-Leads: Department of Education and OSTP).** Education programs encompassing K-12, higher education, and vocational programs related to cybersecurity, with a focus on the science, technology, engineering, and math disciplines to provide a pipeline of skilled workers for private sector and government.
- **Track 3: Federal Cybersecurity Workforce Structure (Lead: OPM).** Personnel management functions, to include defining cybersecurity jobs in the federal government and skills and competencies required. New strategies to ensure federal agencies attract, recruit, and retain skilled employees to accomplish cybersecurity missions.
- **Track 4: Cybersecurity Workforce Training and Professional Development (Tri-Leads: DoD, ODNI, DHS).** Cybersecurity training and professional development required for federal government civilian, military, and contractor personnel.
 - Subtrack 1: General IT Use (Co-Leads: DHS, Federal CIO Council)
 - Subtrack 2: IT Infrastructure, Operations, Maintenance, and Information Assurance (Co-Leads: DoD, DHS)

- Subtrack 3: Domestic Law Enforcement and Counterintelligence (Lead: DoJ)
- Subtrack 4: Specialized Cybersecurity Operations (Lead: NSA)

Work is already underway for each of these tracks and subtracks.

NICE supports and reflects the President's larger agenda for education and innovation in several important ways. Clearly the President's education agenda has a science, technology, engineering, and mathematics (STEM) focus. Cybersecurity education can be viewed as part of STEM but more importantly it is an enabler. A critical part of the President's agenda is the gathering of information to improve student learning, teacher performance, and college and career readiness through enhanced data systems. For such systems to function properly they must be secure. Cybersecurity is much more than technological solutions to technical problems; it is also highly dependent on educated users who are aware of and routinely employ sound practices when dealing with cyberspace. NICE will be conducting an aggressive nationwide awareness and outreach program (Track 1) designed to effect a cultural change in our society that will make the use of sound cyber practices when interacting with cyberspace as common as wearing seat belts when driving or riding in a car.

Providing a high-quality education for all children is critical to America's economic future; teachers are the single most important resource to a child's learning; and investing in community colleges to equip a greater share of young people and adults with high-demand skills and education for emerging industries are all components of stated guiding principles of the President's agenda. NICE will positively effect all of these principles by enabling the efficient functioning of the cyber systems that will be needed to implement these concepts. Specific programs under Tracks 2 and 4 of NICE look to enhance the security of existing and future systems; community colleges are targeted and Federal workforce issues are of particular interest.

The call to increase STEM literacy so that all students can learn deeply and think critically in science, math, engineering, and technology will require real world practical applications for students to turn abstract concepts into concrete skill sets. NICE Track 3 focuses on skills and competencies needed for the Federal workforce, which will in turn affect the future structure of the National workforce. Cybersecurity is a rich area with multi disciplinary aspects necessary to help students explore related STEM fields while increasing their STEM literacy. The expansion of education and career opportunities for underrepresented groups will be accelerated by future cyber systems that will allow for personalized education and training. Again, the security of such systems will be critical to their adoption. NICE will create a strong foundation of cybersecurity aware citizens, who are well prepared to engage and build upon such systems in the future.

* All references to the President's education and innovation plans were taken directly from the official White House website: <http://www.whitehouse.gov/issues/education>