

NICE Community Coordinating Council Meeting Minutes

January 26, 2022 | 3:30-5:00 p.m. ET

I. Introduction and Ground Rules

NICE Program Manager Susana Barraza opened the meeting, welcomed everyone to the call, and reviewed the ground rules. Everyone is encouraged to participate via the chat space. As a reminder, this community is not meant for marketing or any commercial purposes.

II. Opening Remarks

- a. Industry Co-Chair – Jon Brickey, Senior Vice President, Mastercard
 - Workforce challenges are especially acute right now with the “great resignation.” At his company, voluntary losses are higher than normal. They are still having trouble getting HR to change its ways and accept new partnerships.
 - Some professional services companies used by industry do not fully understand the NICE Framework. Jon will be meeting with two companies to discuss this.
- b. Academic Co-Chair – Marni Baker-Stein, Chief Academic Officer and Provost, Western Governors University
 - WGU just finished up some research that geolocated employer demand across several states and several counties within them. When looking at the skills and underlying credentials required in job postings, an undergraduate degree was the real proxy for readiness in almost every case. The question is, what is it going to take in working with HR departments to reassess job readiness qualifications to address the critical gaps in the cybersecurity workforce, especially at a time of need for agile pathways?
- c. Government Co-Chair - Rodney Petersen, Director of NICE
 - Understanding the NICE Framework is one challenge, and implementing it is another challenge. NICE expects that the community will continue to work toward overcoming the obstacles.
 - Community engagement is a major priority for NICE. Some of the groups the program office has met with recently include:
 - Midwest Credential Transparency Alliance, looking into career pathways and collaborative interstate efforts on credentials.
 - Centers of Academic Excellence in Cybersecurity (CAE-C) community, further exploring competencies and how they relate to the NICE Framework.
 - Federal CIO Council’s Workforce Committee
 - Advisory group for community colleges, creating a coordinated network around robotics, automation, and manufacturing to assess what these students need to know about cybersecurity.

III. Standing Items

a. Report Roundup – Learning from Good Ideas

Women in the Workplace 2021

Presented by Sara S. O'Rourke, Partner, McKinsey & Company

URL: <https://www.mckinsey.com/featured-insights/diversity-and-inclusion/women-in-the-workplace>

- Survey Participants
 - 423 participating organizations
 - 65,000 employees surveyed
 - 1-on-1 in-depth interviews with several thousand employees
 - The survey is a joint effort between McKinsey and LeanIn.org
- Women made small gains in representation across the pipeline in 2020, but there are persistent gaps. Women, especially women of color, are under-represented in leadership. Promotions at the first step up to manager are not equitable. The pipeline for women in technical roles trails overall representation.
- All employees are more burned out than last year, but the gap in burnout between men and women has nearly doubled. In the past year, one in three women considered leaving the workforce or downshifting her career.
- Women leaders have taken on the lion's share of work in supporting people on their teams. They spend more time than men on diversity/equity/inclusion work outside formal job responsibilities. Senior-level women are twice as likely as senior-level men to dedicate time to these tasks at least weekly.
- Women are over-mentored and under-sponsored. Senior level women take on a heavier sponsorship load. Women are more willing to put themselves on the line for marginalized groups.
- Ally-ship is on the rise, but women of color still lack effective allies. More than three-fourths of White employees consider themselves allies of women of color, but much fewer consistently take important ally-ship actions.

b. Framework Feature – Applications and Uses of Workforce Framework for Cybersecurity

SFS Job Fair Use of NICE Framework Work Roles

Presented by Yang Li, National Science Foundation

URL: <https://www.sfs.opm.gov/AODefault.aspx>

CyberCorps Scholarship for Service:

- Goals: Increase the number of qualified employees working for federal, state, local and tribal governments in cybersecurity and increase the capacity of US education to produce professionals in cybersecurity
- 2022 Job Fair - January 11-12
 - 74 federal agencies and DoE labs
 - 10 state, local and federally funded research and development centers (FFRDCs)
 - 284 agency representatives
 - 656 students registered
 - 54 university staff
 - 994 total participants

- NICE Framework Work Roles
 - Most agencies use “focused work roles” and most students use “desired work roles.”
 - SFS institutions: <https://www.sfs.opm.gov/ContactsPI.aspx>
- c. Research Review- Driving Research on Effective Practices
- The State of the U.S. STEM Workforce*
 Presented by Amy L. Burke, Ph.D., Program Director, National Science Foundation
 URL: <https://nces.nsf.gov/pubs/nsb20221/u-s-and-global-stem-education-and-labor-force>
- 23% of the U.S. workforce are in STEM jobs as of 2019. Expanding the data framework is a main step needed to change the conversation. A new definition of the STEM workforce encompasses all workers who use science and engineering (S&E) skills. The new definition more than doubles the number of individuals in the STEM workforce by including 16 million workers with at least a bachelor’s degree and 20 million workers without a bachelor’s degree.
 - Participation in STEM jobs by women, black, and Hispanic workers grew in 2019.
 - Blacks, Hispanics, and American Indians or Alaska Natives represented 23% of the total STEM workforce in 2019. They were underrepresented in STEM, largely because of underrepresentation among STEM workers with a bachelor’s degree or higher.
 - Women make up about one-third of the STEM workforce, less than their representation in the employed U.S. population (48%). The share of women in STEM grew from 32% in 2010 to 34% in 2019
 - The STEM workforce is resilient, even during a global pandemic. In 2019, unemployment was lower among the STEM labor force (2%) than the non-STEM labor force (4%). This pattern held during the pandemic. STEM unemployment jumped from about 3% in March 2020 to 9% in April 2020—but for those in non-STEM occupations, unemployment shot up from about 5% to 16% during the same period. By September 2020, unemployment had declined for both STEM and non-STEM workers. STEM workers without a bachelor’s degree and non-STEM workers with a bachelor’s degree reached equivalent unemployment levels
 - Foreign-born workers accounted for 19% of the STEM workforce, increasing from 17% in 2010. Foreign-born workers with a bachelor’s degree or higher accounted for 21% of workers in S&E occupations at the bachelor’s degree level, 38% at the master’s degree level, and 45% at the doctorate level. Most U.S.-trained, foreign-born S&E doctorate recipients who remain in the United States after graduation work in S&E occupations.
- d. Strategy Stories – New Developments that align to NICE Strategic Plan
- Presidential Cybersecurity Educator of the Year*
 Presented by Albert Palacios, U.S. Department of Education
 URL: <https://www.ed.gov/news/press-releases/two-educators-honored-2021-presidential-cybersecurity-education-award>
- Recipients of the 2021 Presidential Cybersecurity Education Award:
 - Kristina L. Rice, of Spotsylvania High School in Spotsylvania, Virginia
 - Sergio de Alba, of Miano Elementary School in Los Banos, California

- Kristi Rice said that a lot of people still don't realize cybersecurity is taught at the high school level. She takes students out of the classroom and into the field so they can see the kinds of jobs that are available. She has strong teams for competitions and a number of students who are pursuing cybersecurity projects during their senior year. One student is working on a cybersecurity camp. Another is working on an elementary-style cybersecurity program geared to high school students with intellectual disabilities – the project will roll out in the fall.
- The Department of Education will open the nomination period for the 2022 awards soon, and it will close around May. Winners will be announced around October.

IV. Working Group Updates

a. Promote Career Discovery

Co-chairs: Roland Varriale II, Argonne National Laboratory

- The Promote Career Discovery Working Group is focusing on the *Career Pathways and Credentials* project, which addresses NICE Strategic Plan Implementation Plan Objective 1.2. This objective aims to increase the understanding of multiple learning pathways and credentials that lead to careers that are identified in the NICE Framework.
- In the months ahead, the group will start building out projects to look at some of their other objectives in the Implementation Plan.

b. Transform Learning Process

Co-chairs: Richard Spires, Learning Tree; Dr. Donna Schaeffer, Marymount University

- The Transform Learning Process Working Group welcomed a new co-chair, Donna Schaeffer of Marymount University.
- The group is in the process of chartering two projects:
 - *Improve the Quality and Availability of Credentials*: This project addresses Objective 2.3 of the NICE Strategic Plan Implementation Plan to improve the quality and availability of credentials that validate competencies. It includes taking a look at how credentials can be organized, valued, and made more affordable.
 - *Incorporating Cybersecurity into a Public Service Education*: The working group is partnering with the Network of Schools of Public Policy, Affairs, and Administration (NASPAA) to look into how to infuse this type of education with the appropriate amount of cybersecurity education. The goal is to build a model that can be used with other professional education groups to bring cybersecurity into their curricula.

c. Modernize Talent Management

Co-chairs: Lynsey Caldwell, Leidos; Kevin Perry, United States Army; Dr. Melissa Woo, Michigan State University

- The Modernize Talent Management Working Group finalized a draft project charter for the *Cyber Career-Entry Guidance for Job Seekers & Employers* project, which addresses Objectives 3.3 and 3.4 of the NICE Strategic Plan Implementation Plan. It aims to 1) promote the establishment of more entry-level positions and opportunities that provide avenues for growth and advancement and 2) provide guidance on how to align qualification requirements according to proficiency levels

to reflect the competencies and capabilities required to perform tasks in the NICE Framework. The project is divided into two teams, and they will kick off project team meetings over the next couple weeks.

V. Community of Interest Updates

- a. Apprenticeships in Cybersecurity
Co-chairs: Tony Bryan, CyberUp; Jennifer Oddo, Youngstown State University
 - The Apprenticeships in Cybersecurity COI is working toward delivering an apprenticeship playbook in time for the NICE Conference & Expo in June. They want to help apprenticeship programs use consistent language.
- b. Cybersecurity Skills Competitions
Co-chairs: Amelia Phillips, Highline College; Bradley Wolfenden, EmberSec; David Zeichick, California State University, Chico
 - The Cybersecurity Skills Competitions COI is finalizing a one-pager on competitions. They are also finalizing two other projects: *Competitors Guide to Competitions* and *How to Build and Run a Competition*, which might be renamed.
 - The group brainstormed new ideas for collaborations with other COIs.
 - They also would like to explore research on how many people are getting jobs as a result of competitions.
- c. K12 Cybersecurity Education
Co-chairs: Laurin Buchanan, Secure Decisions
 - The K12 Cybersecurity Education COI has been exploring project ideas for 2022. They have asked educators to let them know what their biggest challenges are. They are weighing a number of project ideas, and community members will vote on them before the February meeting.
- d. NICE Framework Users
Karen Wetzel, Manager of the NICE Framework
 - In December NICE announced several NICE Framework resources, and they are looking for feedback on them from the community. Comments are due by January 31, 2022, and should be emailed to NICEFramework@nist.gov.
 - [Proposed NICE Framework Data Update Process](#)
This update process will enable NICE Framework implementers and stakeholders to suggest changes, allow for more regular updates, make NICE Framework data available in machine-readable formats, and other improvements.
 - [Refactored NICE Framework Ability Statements](#)
Ability statements have been reviewed in order to identify unique content, while retaining important content and capabilities that are needed for various Work Roles.
 - [NICE Framework Competencies, NISTIR 8355 \(Second Draft\)](#)
The draft was adjusted to better define NICE Framework Competencies, clarified the difference between Work Roles and Competencies, and shared how Competencies can be used.

- NICE is also looking for organizations to share stories of Framework uses and implementations. If you have a story to share, contact Karen Wetzel at: karen.wetzel@nist.gov

VI. Project Progress Reports

- a. NICE K12 Cybersecurity Education Conference
Presented by Felicia Rateliff, Director of Operations and Programs, iKeepSafe
URL: <https://www.k12cybersecurityconference.org/>
 - 2021 Conference Review
 - 520 attendees – second largest conference ever
 - 147 speakers and panelists
 - 12 pre-conference workshops
 - 30 breakout sessions
 - 14 poster sessions
 - 25 pre-recorded on demand sessions
 - 12 Birds of a Feather sessions
 - Virtual speed networking social
 - Games - very competitive.
 - Student panel
 - School counselor panel
 - Fireside chat with Kristi Rice
 - National Cyber Signing Day featured six students telling their stories about internships. Video is available to share with students: <https://www.k12cybersecurityconference.org/national-cyber-signing-day-videos>
 - Free stipends to 120 educators
 - All conference content available online through July 31, 2022
 - Save the Date for the 2022 Conference: December 5-6, 2022, St. Louis, Missouri
 - They are looking for Planning Committee members from industry, government, and academia.
 - In late spring they will be recruiting students to share their stories for 2022 National Cyber Signing Day.
- b. NICE Conference and Expo (Atlanta, Georgia) – June 6-8, 2022
Presented by Katherine Dagand, Florida International University
URL: <https://niceconference.org/>
 - Call for Proposals for the fourth track open until March 6, 2022: <https://niceconference.org/proposals/>
 - Hotel reservations can be made online: https://book.passkey.com/event/50187288/owner/324/home?utm_campaign=287418868
 - Sponsorships and exhibitor booths are available. Learn more at <https://niceconference.org/sponsors/>
- c. NICE Challenge Project
Presented by James D. Ashley
URL: <http://www.nice-challenge.com/>

- Overview
 - The NICE Challenge Project develops real-world cybersecurity challenges within virtualized business environments to provide realistic experiences to students while generating useful assessment data about their knowledge, skills, and abilities for educators. Each NICE Challenge has a narrative-driven scenario, a business environment (workspace), and a set of technical objectives and/or a written deliverable.
 - Challenges are mapped against the [NICE Cybersecurity Workforce Framework](#) and the [National Centers of Academic Excellence in Cybersecurity Knowledge Units](#).
 - 525+ educational institutions served
 - 950+ education faculty sign-ups
 - 109 unique NICE challenges
 - 12 NICE Framework Work Roles
 - 273 NICE Framework Knowledge, Skills, Abilities, and Tasks
- January 2022 Updates
 - New Reservation System: Players can schedule their own one- or two-day workspace.
 - O&M Challenges and Environment Refresh: The refreshed environment has all operating systems upgraded to newer versions, new services, and new software installed. Eighty O&M challenges were refreshed.
 - New Log4Shell Threat Sandbox Challenge to be released soon.
- Updates Coming Summer 2022
 - Working with DHS/CISA to create a specialized environment focused on Industrial Control Systems (ICS).
 - The environment will be based on an electrical substation, and it will contain functioning ICS components.
 - There will be additional content later in the fall.

VII. Featured Topics

- a. *NIST Educational STEM Resource (NEST-R) Registry*
 Presented by Cara O'Malley, Mathematician, National Institute of Standards and Technology
 URL: <https://nestr.nist.gov/>
 - In 2020, in light of the pandemic, NIST started to look at how it could help with online STEM learning. The goal is to make STEM content easily accessible and useable to the public – especially K12 educators – a one-stop shop of resources to enhance a STEM curriculum.
 - The registry went live at the NICE K12 Cybersecurity Education Conference in December, 2021.
 - Currently the registry holds NIST content, and it can be expanded with links to other agencies' content.
 - Users can search by key words or use a set of filters, which include topic, target audience, format, instructional level, teaching time, educational standard, and more.
 - Resource pages include links to the resources, teaching tips, and a Share PID link.

- The vision is an ecosystem of federated registries. Protocols are based on community standards – Open Archive Initiatives (OAI), Open-source software (CDCS). Each organization can maintain ownership and stewardship of its content.
 - Each registry instance provides an entry point into the federated system. A user can start from any hub and access content from across the linked registries.
- b. *NICE Cybersecurity Apprenticeship Program Finder*
 Presented by Marian Merritt, Deputy Director, National Initiative for Cybersecurity Education
 URL: <https://www.nist.gov/nice/apprenticeship-finder>
- Background
 - Apprenticeships align with NICE Strategic Goals 1, 2, and 3
 - NICE supports apprenticeship as a key element for building capacity at entry and reskilling levels. The NICE Apprenticeship in Cybersecurity Community of Interest has 400 members. They have authored a one-pager to drive awareness and hosted a pre-conference workshop at the NICE K12 Cybersecurity Education Conference in December, among other things.
 - Integral Partners
 - Department of Labor hosts a working group for cybersecurity programs and sponsors National Apprenticeship Week (November 14-20, 2022). www.apprenticeship.gov
 - DHS (possibly piloting a federal program with University of Maryland, Baltimore County); New America Foundation; National CyberWatch (report on federal apprenticeships); Urban Institute (early curriculum development)
 - [NICE Cybersecurity Apprenticeship Program Finder](https://www.nist.gov/nice/apprenticeship-finder)
 - A tool to help program managers, employers, and job seekers find each other.
 - Launched January 10, 2022
 - Online form to submit information about apprenticeship programs: <https://www.nist.gov/form/nice-apprenticeship-program-find>
 - More than 90 programs mapped to date
 - Programs may be registered with the U.S. Department of Labor’s Office of Apprenticeship or state-level registrations, or they may not yet be registered.
 - Some programs may include youth apprenticeships and pre-apprenticeship training programs.
 - All programs include cybersecurity work role training and development.

VIII. Closing Remarks and Next Meeting Reminder

- The NICE Program Office will be sending out an email announcement soon on how to join and contribute to all of the new project teams.
- The next NICE Council Meeting will be **February 23, 2022** at 3:30 p.m. ET.