**NICE Working Group**

**Meeting Minutes**

**Date: May 20, 2020 Time: 3:30 p.m. ET**

**SharePoint Page:** [https://nistgov.sharepoint.com/sites/NICEProgram/NICEWG](https://nistgov.sharepoint.com/sites/NICEProgram/NICEWG/Pages/home.aspx)

1. **Introduction and Ground Rules**
2. Danielle Santos, NICE Program Manager, welcomed participants to the meeting. The NICE Working Group (NICEWG) is set up to provide a mechanism for collaboration among academia, government, and industry as well as to discuss strategies and actions to aid in workforce development.
3. Danielle encouraged participants to use the Adobe Connect chat box feature to provide feedback and ask questions.
4. Danielle urged all participants to collaborate and share information. The NICE Working Group [mailing list](mailto:nicewg@nist.gov) is a convenient way to disseminate information. The [SharePoint site](https://nistgov.sharepoint.com/sites/NICEProgram/NICEWG/Pages/home.aspx) stores meeting agendas and minutes, documents, and member information.
5. Danielle noted that NICE Working Group mailing lists and meeting teleconferences are not intended for promotional announcements, advertising, product-related press releases, or other commercial use.
6. **Opening Remarks**
7. Academic Co-Chair, Dr. José-Marie Griffiths, Dakota State University, hopes all members are well and can move around a bit more during these interesting times. She is glad these working group meetings are ongoing since the work is very important and critical for the future of cybersecurity. There is a lot going on despite the pandemic, and she looks forward to the day we can have a face-to-face meeting.
8. Industry Co-Chair, Jon Brickey, Mastercard, looks forward to being engaged when travel picks up. Jon noted that the top motivations for cyber-attacks continue to be financial. More than 55% of actors are from organized crime.
9. Government Co-Chair, Rodney Petersen, Director of NICE, said we are living in interesting times. Many are suffering from online fatigue. The focus of NICE highlights a new significance due to continuation of learning or workforce issues on how to telework and carry on the mission. This is a disruptive period when organizations are finding some short-term solutions. NICE has been focused on these issues and held a [webinar](https://www.nist.gov/news-events/events/2020/05/nice-webinar-continuity-learning-and-skills-development-virtual) on such topics. The upcoming [NICE webinar: The Challenge of That First Job in Cybersecurity - Entry Level Roles and How to Qualify](https://www.nist.gov/news-events/events/2020/06/nice-webinar-challenge-first-job-cybersecurity-entry-level-roles-and-how), scheduled for June 17, will discuss topics related to getting that first job in cybersecurity and crafting entry level roles.

The Program Office is actively working on a review and update to the [NICE Cybersecurity Workforce Framework](https://www.nist.gov/itl/applied-cybersecurity/nice/nice-cybersecurity-workforce-framework-resource-center). They are working with interagency coordinators along with others in the academic and private sectors. Look for announcements later this summer.

An update to the [NICE Strategic Plan](https://www.nist.gov/itl/applied-cybersecurity/nice/about/strategic-plan) is being drafted. Many working group members have contributed to brainstorming ideas. Later this summer, subgroup members will participate in reviews and we look forward to feedback.

1. **Standing Items**
2. **Report Roundup – Learning from Good Ideas**

Jennifer Santiago, SANS Institute, presented on “SANS Women in Cybersecurity Survey: Spanning the Career Life Cycle.”

* Jennifer let members know about the [free resources](https://www.sans.org/security-resources/) available to keep up with training. SANS is sponsoring a HackFest and CyberRanges June 4-13.
* Jennifer spoke about the results of a survey which closed earlier this year. The respondents included 488 women in cybersecurity leadership positions.
* Results found that a person’s educational background matters but less than other factors. The highest level of educational attainment split almost evenly between 4-year and master’s degrees.
* With regard to the top factors in career advancement, education came in near last. What matters most is experience. Most respondents in these leadership positions have more than 5 years’ experience. The bottom line is that it takes a while to get into a leadership position, but varied experience is key.
* Training and certifications are in the top 3 factors in their reaching leadership roles and over three-quarters of respondents said they keep at least one certification current. Just over 20% have no certifications at all.
* Ongoing training is key. More than 92% say they take training at least once per year.
* Over one-third of the respondents believe having a strong mentor is key to advancement. One takeaway is to become a mentor. This can be informal or formal. Sometimes people need encouragement.
* In conclusion, take it upon yourself to build your own brand. Align yourself to a project, don’t take ‘no’ for an answer, and be your own advocate.
* When asked about training and certifications being more important than formal education, Jennifer responded that this is the prevailing opinion. Especially specific certifications that speak to a specific competency. She is unsure if they are currently in hiring roles.
* Find more information on SANS Summit [here](https://www.sans.org/cyber-security-summit?utm_medium=Print&utm_source=SANS+Brochure+Bind-In&utm_content=SANS2019&utm_campaign=Summit+Program).
* See [presentation](https://nistgov.sharepoint.com/:p:/r/sites/NICEProgram/NICEWG/_layouts/15/Doc.aspx?sourcedoc=%7B45E3D31C-2490-4681-94E4-41AEF35DA3DF%7D&file=NICE%20Working%20Group%20Presentations%205_20_20.pptx&action=edit&mobileredirect=true) and find the report [here](https://threatconnect.com/resource/sans-women-in-cybersecurity-survey-spanning-the-career-life-cycle/?utm_campaign=Content%20Syndication%20-%20SOAR%20-%202020&utm_source=hs_email&utm_medium=email&utm_content=86288683&_hsenc=p2ANqtz--JWNd3CDgkZVXV5XZZiHBWsTokAt0akE6mJDQX97otPt6n29IOo-Fts1P4zSwqmu8MrT2td_JJ6U29HGMgzWHutkdw-Q&_hsmi=86288683).

1. **Strategy Stories – New Developments that Align to NICE Strategy**

Presenters: Justin De Luna, SOC Analyst, Sebastian Johnson, Student at Delta College, 2d Lt. Neel Kotak, Undergraduate Cyber Training (UCT) Student, United States Air Force, spoke about their academic and career commitments. This topic aligns with the [NICE Strategic Plan](https://www.nist.gov/itl/applied-cybersecurity/nice/about/strategic-plan) Goal #1 Accelerate Learning and Skills Development, Goal #3 Guide Career Development and Workforce Planning, and Objective 2.3: Inspire cybersecurity career awareness with students in elementary school, stimulate cybersecurity career exploration in middle school, and enable cybersecurity career preparedness in high school.

* Justin De Luna is 26 years old and just started as a SOC analyst. He has less than 2 years general IT experience that includes help desk and desktop support. He has an associate degree in computer science and a bachelor’s degree in cybersecurity and counter terrorism. He also has several certifications.
* Justin spent lot of time learning cybersecurity concepts on his own. He began learning about penetration testing and typical cybersecurity methods on operating systems.
* Justin believes that to be successful in the field, one must recognize ever-changing and new threats, learn new abilities, and understand that things won’t stay the same. Being self-motivated and willing to learn new things is important. It’s also good to learn different things but focus on your interest in the field.
* What worked for Justin to enter the field includes networking on social media, especially Twitter, where he’s met some great people. It’s a great source to learn new things. Staying up-to-date with new threats and getting familiar with terms and methods via blogs, websites, LinkedIn, etc. are also important. Also, getting as much hands-on experience as possible. Many hiring managers say certifications will only help so much – one must be able to demonstrate and get beyond the book part. At-home labs and on-site methods are some options. Creating a blog is a great way to stand out and promote yourself. Even if no one reads it!
* Obstacles include getting past HR (they are looking for keywords), the need to update your resume for each position you apply for, and knowing your end goal (cybersecurity is a broad industry).
* Takeaways include staying motivated, enjoying change, keeping up to date, having a good base knowledge of IT, and making yourself stand out.
* Sebastian Johnson is a freshman at Delta College going for an associate’s degree in cybersecurity. His plan is to then transfer to Capitol Technology University in D.C. Two out of his four years in high school were spent at the Bay-Arenac ISD Cybersecurity Program. He was involved in Business Professionals of America and CyberPatriot.
* Future plans include completing his degrees, acquiring certifications, and getting hands-on experience.
* His opinion on how to improve the environment moving forward includes expanding programs similar to the Bay-Arenac ISD and providing internships for minors. The hardest part about getting a job is getting your foot in the door.
* Neel Kotak graduated from the University of Hawai`i at Manoa in 2019 with a BA in Informational Computer Science Cyber Security Focus. He joined the Air Force ROTC which offered him a scholarship. After graduation, he did an internship with the Air Force focused on leadership and technical skills. He liked the varied problem challenges and preparing presentations. He plans to continue undergrad classes and will seek an internship. He noted that it is eye-opening to work with people in industry and to get the hands-on experience.
* See [presentation](https://nistgov.sharepoint.com/:p:/r/sites/NICEProgram/NICEWG/_layouts/15/Doc.aspx?sourcedoc=%7B45E3D31C-2490-4681-94E4-41AEF35DA3DF%7D&file=NICE%20Working%20Group%20Presentations%205_20_20.pptx&action=edit&mobileredirect=true) for more.

1. **Metric Moment – What Gets Measured Gets Done**

Ed Mondragon, CTE Coordinator - IT/STEM, Granite School District, presented on “Going from Letter Grades to Pass/Fail Ratings.”

* The grading structure moving to pass/fail has caused challenges. Ed’s district is moving to a proficiency-based model. Parents that have students going to college believe this doesn’t fit with universities since they have not converted. He’s run into many challenges with Proficiency Based Grading since it is based upon demonstratable understanding of learning objectives. During the fourth quarter they will transition back to the letter grade with caveats.
* The learning management system in Utah does not provide the metrics we’re looking for. Much of the feedback comes from speaking with teachers. They’ve found that socioeconomics plays a part. Some students do not have the needed tools and some students have to go to work. Assignment completion is anywhere between 0 -100%. Participation is 20-90% give or take. This causes challenges we’re scrambling to solve. Some teachers are offering ‘office hours’ while some say they are ‘available’ at all times. Hands-on labs have helped provide support but have been an issue. There are many opportunities but scrambling at the last minute has brought challenges.
* See [presentation](https://nistgov.sharepoint.com/:p:/r/sites/NICEProgram/NICEWG/_layouts/15/Doc.aspx?sourcedoc=%7B45E3D31C-2490-4681-94E4-41AEF35DA3DF%7D&file=NICE%20Working%20Group%20Presentations%205_20_20.pptx&action=edit&mobileredirect=true) for more.

1. **Subgroup Updates**
2. **Apprenticeship**

Co-chair Tony Bryan, Executive Director, CyberUp, provided the update:

* As new co-chairs, Tony and Jennifer Oddo spent the last month homing in on priorities and considering what the next 6-18 months are going to look like. A survey provided some insight into what everyone in the subgroup wants to do. At the last meeting, they talked about areas of interest, and they will start to break down into subcommittees and tackle the three projects they have landed on.
* The next Apprenticeship Subgroup meeting is scheduled for June 26 at 11:00 a.m. ET.
* Visit the Apprenticeship Subgroup website [here](https://www.nist.gov/itl/applied-cybersecurity/nice/about/working-group/apprenticeship-sub-working-group).

1. **Collegiate**

### Co-chair Denise Ferebee, LeMoyne-Owen College, provided the update:

### At the last meeting, Denise presented a project that will produce curriculum in reference to NICE Framework work roles. They are in the process of polishing it up and then they will see who is interested in participating.

* The next Collegiate Subgroup meeting is scheduled for June 9 at 2:00 p.m. ET.
* Visit the Collegiate Subgroup website [here](https://www.nist.gov/itl/applied-cybersecurity/nice/about/working-group/collegiate-sub-working-group).

1. **Competitions**

Co-chair Brad Wolfenden, EmberSec, provided the update:

* The May meeting featured a presentation by Dwayne Williams of CIAS at UTSA, who talked about what went into running the CyberPatriot National Finals in a virtual environment as a result of the pandemic. Dwayne also announced that the NCCDC will host a live YouTube channel this year, and the opening ceremonies will be available online.
* The subgroup also reviewed the two projects they are working on to create competition guides. The first, *How to Build and Run a Competition*, led by Wendy Ford, outlines 10 steps for planning and holding a competition. The second, *Guide to Cyber Competitions for Competitors*, led by Marcelle Lee, offers insights on types of competitions and their applicability to the real world as well as ideas on how to get involved in competitions and how to prepare. Both guides are close to the finish line.
* The next Competitions Subgroup meeting is scheduled for June 16 at 3:00 p.m. ET.
* Visit the Competitions Subgroup website [here](https://www.nist.gov/itl/applied-cybersecurity/nice/about/working-group/competitions-sub-working-group).

1. **K12**

Co-chair Laurin Buchanan, Secure Decisions, provided the update:

* The last meeting featured two presentations. The first offered a look at the work of ESC20 and Experience America to generate interest in cybersecurity among K12 students. Together they are hosting a 1-week virtual externship in July. They are looking for people in industry and academia who are interested in getting involved. If you’re interested, check it out: <https://www.experienceamerica.com/>
* The second presentation, by Zach Latta, offered an overview of [Hack Club](mailto:https://hackclub.com/), a donor-supported, non-profit network of high school hacker clubs. The network, founded by Latta, uses the Slack platform to create a community where students talk about hacking and everything else. Laurin pointed out that the current Stay at Home environment has likely increased participation on the platform and helped students get through what could be a really tough time for them. The great thing about the clubs is that they are run completely by the students. It provides a fascinating bit of insight into what happens when you get students interested and caring – they pick up the ball and run with it.
* The subgroup is compiling a repository of K12 resources, which the members are reviewing for potential inclusion in a federal STEM-related initiative.
* The next K12 Subgroup meeting is scheduled for June 10 at 3:30 p.m. ET.
* Visit the K12 Subgroup website [here](https://www.nist.gov/itl/applied-cybersecurity/nice/about/working-group/k12-sub-working-group).

1. **Training and Certifications**

Co-chair Jim Boardman, Academy Training Engineer, Cybersecurity Academy, Palo Alto Networks, provided the update:

* The guest speaker at the last meeting was James Stanger, Chief Technology Evangelist at CompTIA, who discussed online certification testing. Because of the pandemic, most of the testing centers are closed. However, even before the pandemic struck, there was a push to conduct certification testing online. Moving certification to a virtual environment has prompted a lot of questions about the integrity of exams and the potential for cheating. Providers have tried to mitigate these concerns by using online proctors, video cameras operating during exams, and highly sophisticated methodologies for detecting cheating after the fact. CompTIA, for its part, is not afraid to go back and query an exam taker to ensure the integrity of an exam.
* The subgroup discussed a project that Co-chair John McCumber will be leading to map the NICE Cybersecurity Workforce Framework to certification exams.
* They also heard updates to other ongoing projects, including a Cyber Range project led by Dr. Joshua Snavely. A white paper has been drafted and will soon be presented to the Working Group. Dr. Renita Murimi provided an update on the Training Best Practices & Innovation project, which looks at ways to address the shortage in the cybersecurity workforce by training people faster.
* The June T&C Subgroup meeting is scheduled for June 3 at 2:30 p.m. ET.
* Visit the T&C Subgroup website [here](https://www.nist.gov/itl/applied-cybersecurity/nice/about/working-group/training-and-certifications-sub-working-group).

1. **Workforce Management**

Co-chair Karen Jensen, Saaby Consulting, provided the update:

* The subgroup has been working on a guide to help HR managers in recruiting cybersecurity professionals. The guide will include ideas for writing a job description so that experience requirements map up with the actual job.
* Karen applauded the three young people who shared their own experiences earlier in today’s Working Group meeting. As Justin said, certifications aren’t enough to land a job – how do education requirements map up with certifications, and how do experience requirements map up with the rest? All the talk about the shortage in the cybersecurity workforce doesn’t really correlate to candidates’ experiences looking for work. The process should be a lot more candidate centric. Part of the issue is the lack of standardization in the language of cybersecurity jobs. Titles are not standardized. The aim of the project is to give HR a meaningful document they can use.
* The subgroup also wants to help address bias and lack of diversity in the cybersecurity workforce, and there are strategies and techniques for doing so, including building transparency into the interview process, letting candidates know questions in advance, and using gender-neutral job descriptions. They are working to ensure that the guide has real teeth in it while remaining vendor neutral.
* The June Workforce Management Subgroup meeting is scheduled for June 18 at 1:00 p.m. ET.
* Visit the Workforce Management Subgroup website [here](https://www.nist.gov/itl/applied-cybersecurity/nice/about/working-group/workforce-management-sub-working-group).

1. **Project Progress Reports**
2. **Annual NICE Conference and Expo -** November 16-18, 2020

Randy Pestana, Florida International University, presented an update:

* The 11th annual NICE Conference and Expo is scheduled for November 16-18, 2020, at the Hilton Atlanta Downtown, Atlanta, Georgia.
* Planning remains on track for the conference to take place in Atlanta, but the question remains whether it will be available virtually or in a hybrid format.
* A block of rooms at the Hilton Atlanta Downtown has been made available for online reservations, and cancellation is permitted up to one day before the conference begins.
* The [call for proposals](https://niceconference.org/proposals) will remain open through May 31. The theme is “New Decade, New Solutions: Meaningful Actions for a Cybersecurity Workforce.”
* There will be pre-conference workshops on apprenticeships and on industry uses of the NICE Framework.

Find out more [here](https://niceconference.org/).

1. **NICE K12 Cybersecurity Education Conference**

**Felicia Rateliff, Senior Program Manager, iKeepSafe, presented an update:**

* The annual NICE K12 Cybersecurity Education Conference is scheduled for December 7-8, 2020 at the Marriot St. Louis Grand, St. Louis, Missouri
* Plans are moving forward for an in-person conference, but they are working on back-up plans and back-up plans for the back-up plans. They will keep in close communication about what will happen, and they expect to have some decisions made and updated information before registration goes live August 1.
* A block of rooms at the Marriot St. Louis Grand has been set aside at a government rate, and reservations can be made online.
* The call for proposals is open through June 12, and you may submit online. The focus is on proposals from K12 educators, so if you know someone, have them send in a proposal. The conference theme is “Expanding the Gateway to the Workforce of the Future.”
* They have established a group in Missouri, the Missouri Cyber Consortium, to promote the conference. They are also working on a pre-conference hackathon for attendees to talk about big issues in cybersecurity education. They are reaching out in nearby states and throughout the country as well and are recruiting exhibitors and event sponsors. Contact Felicia directly if you are interested: [felicia@ikeepsafe.org](mailto:felicia@ikeepsafe.org)
* Two keynote speakers have been confirmed: Sylvia Acevedo, CEO, Girl Scouts, and Roy Zur, CEO, Cybint
* The pre-conference workshop will be hosted by the Collegiate School of Medicine and Bioscience, a magnet high school not far from the conference venue.

See [presentation](https://nistgov.sharepoint.com/:p:/r/sites/NICEProgram/NICEWG/_layouts/15/Doc.aspx?sourcedoc=%7B45E3D31C-2490-4681-94E4-41AEF35DA3DF%7D&file=NICE%20Working%20Group%20Presentations%205_20_20.pptx&action=edit&mobileredirect=true) and find out more [here](https://www.k12cybersecurityconference.org/).

1. **Featured Topic – Presidential Cybersecurity Education Award**

**Albert Palacios, Department of Education**

* Albert gave an overview of the award, which was initiated via executive order to recognize one high school and one elementary school teacher. (All grades that aren’t part of high school were considered to be elementary school for the purposes of the award.)
* The Department of Education, which organized and hosted the award, received 43 nominations from 23 states. The nominations were reviewed by internal staff members who had a background in and understanding of cybersecurity. They were looking for teachers who not only meet the basic eligibility criteria but also help build strong foundations for the development of skill sets for the cybersecurity workers of the future. They also kept an eye to what efforts were made to improve diversity and inclusion. They really wanted to see nominees who were going above and beyond.
* Moving forward, they want to make sure that this program helps them highlight the need for cybersecurity educators and increase the technological rigor of cybersecurity programs. They want to build connections between secondary and post-secondary programs, align with the NICE Framework and CAEs, and enhance federal agency collaboration and recruitment. The award comes with an opportunity for professional development activities and a tour of some federal agencies in D.C. (in non-pandemic times).
* Nominations for the 2021 awards will open in October 2020 and close in January 2021. Awardees will be announced in May 2021.

**Kara Four Bear, Awardee, New Town Middle School, North Dakota**

* Kara said it was an honor to be recognized for the work done at her school. She works with grades 6 and 7, and over the past few years the school has been establishing a more robust, global and relevant cyber program. The school is located on the Fort Berthold Reservation in the city of New Town, and the student population is 90% Native American.
* Kara and her colleagues wanted to meet the kids where the kids were at. They devised a multi-phased plan for a STEM-focuses curriculum, including: an exploratory and planning year; a year to develop structure, build partnerships for staff training, resources and extended learning opportunities; and a year to strengthen their framework, partnerships, and resources. Their aim is to build a foundation of skill set for students as they work toward high school. They fast-tracked as much of the work as they could.
* A culture shift has been a huge key to their success, for students and staff alike. They decided to throw away the box, ask “what if?” and play to the passions of the students and staff. There has been a measured increase in student engagement and involvement in afterschool activities as well as a measured increased in math and reading scores.

**Donna Woods, Awardee, Canyon Springs High School, California**

* Donna said it was a privilege to be with everyone on the call, and she complimented the many who have been a vital link for her students and their career pathways. The school district has 34,000 students, and 96.3% are in the free and reduced lunch program while 11% are homeless.
* The Cyber K-20 Pathway Focus program at her high school began 5 years ago as an afterschool club, and it was then expanded to the middle school through STEM and computer science courses. The NICE Framework is critical to the program as course are aligned to it. Students encounter the Framework in classes including Cybersecurity I and II as well as in the Dual-Enrollment program, where they have the opportunity to earn six college credits or 20 high school elective credits.
* Students also work on industry certifications, and the goal is for them to have skin in the game. They have them put $20 into the certifications, and the money is returned along with a bonus when they pass. Many of them also participate in CyberPatriot competitions.
* The program uses the NICE Framework in lessons, beginning in middle school. It is used extensively in presentations to students and in community outreach. The school uses many of the statistics in the NICE one pagers, which is helpful in guiding parents to a better understanding of what a future career looks like with the cyber pathways. A number of former students have become mentors.
* The NICE Framework is also used in training coaches and teachers so that they understand what the goal is nationally and how it can be tied to the curriculum.
* It is a synergetic effort, with everyone bringing their knowledge and skills sets and driving a passion in the students. Donna said that she and her students are co-collaborators. The collaborative efforts of the NICE Working Group has done amazing things for her students, providing live-changing opportunities.

See [presentation](https://nistgov.sharepoint.com/:p:/r/sites/NICEProgram/NICEWG/_layouts/15/Doc.aspx?sourcedoc=%7B45E3D31C-2490-4681-94E4-41AEF35DA3DF%7D&file=NICE%20Working%20Group%20Presentations%205_20_20.pptx&action=edit&mobileredirect=true) and find out more [here](https://www.ed.gov/news/press-releases/us-secretary-education-betsy-devos-honors-two-educators-inaugural-presidential-cybersecurity-education-award).

1. **Next Meeting Reminder**

The Next NICE Working Group meeting is scheduled for Wednesday, June 24, 2020