**NICE Working Group**

**Meeting Minutes**

**Date: 9/27/2017 Time: 3:30 PM EST**

**SharePoint Page:** <https://nistgov.sharepoint.com/sites/NICEProgram/NICEWG>

# Introduction and Ground Rules

* Danielle Santos, NICE Program Manager, welcomed members to the meeting. The NICE Working Group is setup to provide a mechanism for collaboration between academia, government and industry and to discuss strategies and actions to aid in workforce development.
* During this meeting the Adobe Connect chat box feature should be utilized to provide feedback and ask questions.
* Danielle noted that participation in the NICE Working Group (NICEWG) is not intended for advertising and promotional purposes and to keep this in mind when participating and using the chat feature.

# NICE Program Office Updates

* Rodney Peterson, Director of the National Initiative of Cybersecurity Education, welcomed members to the meeting. Rodney noted he has been very busy over the summer months. Last month he was in Arizona at a Congressional Cybersecurity event where he could see increased interest in NICE’s work from both government and industry. NICE’s messages are carrying across the country.
* The NICE team recently held a webinar, ‘Efforts to Align Training and Certifications to the NICE Framework. The webinar introduced efforts to identify some of the standards being used by organizations to identify and map certifications for their cybersecurity workforce and the challenges in developing a mapping of certifications. There will continue to be a lot of outreach about the framework. For more information about the webinar and to listen to a recording please visit the following link: <https://www.nist.gov/news-events/events/2017/09/nice-webinar-efforts-align-training-and-certifications-nice-framework>
* Another activity that kept the NICE program office busy over the summer was the Executive Order on Cybersecurity Workforce. A half day workshop was held and the Request for Information (RFI) responses were uploaded onto the [website](https://www.nist.gov/itl/applied-cybersecurity/nice/cybersecurity-workforce-development-provisions-executive-order). When the report is available it will be uploaded to the website as well.
* Rodney wished everyone an early National Cybersecurity Awareness month which takes place throughout October.

# Opening Remarks

* Industry Co-Chair, Andre Thornton, welcomed members to the call. Andre shared some thoughts on recent research about millennials. Millennials are looking for meaningful and impactful work. Andre sees this as a great opportunity within cybersecurity as cybersecurity provides protection and enables the mission of any organization. Andre offers this as a framework to think through while continuing the conversation.

# Standing Items

## **Fun Facts** – Will Markow presented on CyberSeek.

1. Will shared some of the work going on to build [Cyberseek.org](http://cyberseek.org/). It is an interactive online portal that provides detailed information on the cybersecurity job market and career pathways across the U.S.
2. Cyberseek seeks to build a culture of quantifiable facts relating to the skills gap in cybersecurity. To provide more evidence, there are two key visualizations: first is a heat map for cybersecurity job supply and demand. The second is the cybersecurity pathway. It maps roles into entry, mid-range, and senior position levels and shows what skills and credentials are needed to prepare for those roles. The data comes from online job listings.
3. There is a database of 5 to 6 million listings from thousands of job boards, along with information on the skills required for those jobs. All these things combined provide a picture of the market. Data maps back to the NICE framework with the use of consistent nomenclature.
4. Cybersecurity job gaps exist across the entire country. The data shows what types of roles are in demand and where the most critical gaps are. Operations and maintenance seem to be the largest category of jobs.
5. This kind of information can help target locations where the most workers need to be trained.
6. With greater detail, we can look at the kinds of roles and how much job demand there is. This information is useful when preparing workers, or recruiting workers for jobs. Locations where there are greater shortages can be targeted.
7. The data can help answer other kinds of questions. The tool can help employers and educators with information about roles and help students get informed about what roles are available.
8. Taken together, all the data can assist with building the pipeline of workers.
9. We are in the process of updating Cyberseek with new data and functions to be rolled out during the November NICE conference.
10. See the attached presentation for more information and find out more here: <http://cyberseek.org/>

## **Report Roundup**

1. Brad Martin spoke about the National Academies Report on Foundational Cybersecurity Research.
2. Brad is with the NSA Research Directorate and leads a research group. He also serves on a White House cybersecurity subcommittee.
3. The task for the study was to focus on future goals in cybersecurity. The study contained classified and unclassified portions. The public non-classified report is being discussed today.
4. The report covers four areas:
   1. Support, develop and improve security science;
   2. Integrate social and behavioral sciences into security science and address human dimensions of systems;
   3. Integration of engineering and operations to understand life cycle systems and importance of research;
   4. The need to sustain long term cybersecurity research.
5. The research work at NSA started a few administrations ago. There are five research areas. The study started in 2012. There are 140 institutions in the NSA network, including a group of universities.
6. In the area of competitions, there is an annual paper competition and science fair with awards for papers and projects.
7. Measurements and results are key parts of the activity. There is a need to have stronger multi-disciplinary models relating to human behavior. It is strongly about seeking evidence and challenging assumptions.
8. See the attached presentation for more information and find out more here: <https://www.nap.edu/catalog/24676/foundational-cybersecurity-research-improving-science-engineering-and-institutions>

## **Event Engagement** – Alina Aragon shared upcoming job fair information.

1. The Federal Tech/Cyber Hiring Recruitment Event is being held November 5-6 in Silver Spring, MD at the Silver Spring Civic Building at Veterans Plaza.
2. CyberCorps is holding a Scholarship for Service Career Fair – NSF, DHS, and OPM participate in this program. A virtual career fair is scheduled for October 19th, and an in-person career fair will be held in January, 2018.
3. Centers of Excellence is holding a cybersecurity virtual career fair on October 13th, 2017. Registration is open for this event.
4. See the attached presentation for more information and find out more here: [https://www.cio.gov/hiringevent/ and https://www.caecommunity.org/calendar/cae-virtual-career-fair](https://www.cio.gov/hiringevent/%20%20and%20https:/www.caecommunity.org/calendar/cae-virtual-career-fair)

## **Strategy Stories**

1. Hina Baloch presented on the topic General Motors (GM) Intensifies Push to Train Young People for Jobs of Future. This topic aligns to the NICE strategic plan 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.
2. Ms. Baloch leads the global STEM education initiative for GM. They research where GM wants to contribute to STEM education.
3. GM is looking at STEM opportunities that align with its business and are looking for other organizations to partner with. They are also interested in what GM can uniquely contribute. Most of those who want to participate in working with students or others are technical staff.
4. GM has spent a lot of time analyzing the state of STEM. As cars become more connected, they want to understand the implications for the students and teachers they work with. The organization would like to increase the number of students who earn degrees in STEM and increase the supply of teachers in STEM.
5. In technology, they are involved with the areas of computational thinking, coding, and digitization of education. They are also looking at immersive learning by using gaming as an educational tool.
6. The final area they are looking at is artificial intelligence (AI). How can AI be used to support teachers and staff?
7. They have been examining the challenges, and what partnerships can assist with those challenges. They also work with the society of automotive engineers and hope to have a presentation at a future meeting.
8. See the attached presentation for more information and find out more here: <http://www.4-traders.com/GENERAL-MOTORS-CORPORATIO-6873535/news/General-Motors-GM-Intensifies-Push-to-Train-Young-People-for-Jobs-of-Future-24672566/>

## **Metric Moment** –Baker Franke presented metrics from Code.org.

1. Code.org is a non-profit organization with the goal of having computer science taught in every school in the U.S. Computer Science has been on a decline in school curriculums, but is starting to recover.
2. There are two AP computer science exams.
3. Increasing minority participation in computer science is a major focus.
4. Code.org invented an app to demonstrate the use of keys using a modulo math process.
5. The number of women taking an AP computer science course has more than doubled in the last year.
6. The Code.org curriculum was widely used by those taking the exam.
7. Mr. Franke presented statistics by demographic group of test takers, and showed great growth in the number of people taking computer science AP tests.
8. There is still a long way to go. AP math test takers still outstrip those taking AP computer science test takers.
9. See the attached presentation for more information and find out more here: <https://medium.com/@codeorg/girls-set-ap-computer-science-record-skyrocketing-growth-outpaces-boys-41b7c01373a5>

# Subgroup Updates

* + **K-12** – Virginia Lehmkuhl -Dakhew, co-chair, provided the K-12 update.
    1. The group is gearing up for both the NICE K-12 conference as well as the National Cybersecurity Career Awareness Week. Both topics will be addressed later in this meeting.
    2. The group is looking to add CTE education programs to their existing template on a K-12 project directory. The K-12 group will be discussing that in more detail during the October K-12 subgroup meeting.
    3. The group is also moving forward with Cybersecurity Curriculum guidelines. A project team is coming together to work on this in more detail.
  + **Collegiate** –Rodney Petersen and Stephen Miller, co-chair, provided the Collegiate update.
    1. The Collegiate sub-group has two main project teams.
    2. The first project team is looking at different academic pathways for cybersecurity careers. The group has been at a standstill but now has a new project lead. The Collegiate co-chairs will be working with the new lead to get that project caught up.
    3. The second team is looking at different tools and technologies to demonstrate student’s skill sets. They are collecting information on tools and technologies that are already available. The group has been working closely with the National Cyber Student Association on this work. They are also developing a framework for student portfolios. The group is planning to create a white paper as well as present at the NICE Conference in November.
  + **Competitions** –Laurin Buchanan, co-chair, provided the Competitions update.
    1. The subgroup has restructured their meetings to now include a speaker. When they met last Friday they heard a presentation form the Cyber Resilience Institute on crowdsourcing cybersecurity work at the university level.
    2. Additionally, they are looking at ways to get more people involved in Competitions. A [survey](https://www.surveymonkey.com/r/YPXPX8V) has been created to gauge level of interest.
    3. A number of projects are taking place including the creation of podcasts series as well as paper on how to start your own competition.
  + **Training and Certifications** – Clarence Williams, NICE Lead for Government Engagement, provided the Training and Certifications update.
    1. The group is continuing to work on the value of certifications one pager. The hope is to have a completed draft soon.
    2. The Framework and Certifications project team will likely convene at the NCCoE to discuss in person their recent efforts.
    3. The next subgroup meeting is October 4th.
  + **Workforce Management**- Maurice Uenuma, co-chair, provided the Workforce Management update.
    1. The subgroup is continuing to make progress in building the workforce management guidebook. The goal of the guidebook is to provide guidance and actual steps to take for an organization to secure its cybersecurity.
    2. The document is currently in rough draft form. It is brief by design so that it is consumable for non–technical and non-interested people.
    3. The core element of the document is around each business function or functional areas.
    4. Each page includes a brief description about the business function and why it’s important within an organization. The idea is to quickly link to their business functional areas to cybersecurity.
    5. A brief section is included with a note to leaders providing something for them to focus on.
    6. The seven sections is followed by an overview of cultural/human behavior. They will also compile a list common to all functions.
    7. The hope is to have a first draft ready by October. The group welcomes additional participation.
    8. Contact the co-chairs here: [muenuma@tripwire.com](mailto:muenuma@tripwire.com), [kristin@staysafeonline.org](mailto:kristin@staysafeonline.org)

# Project Progress Reports

* + **NICE K-12 Cybersecurity Education Conference** 
    1. The conference will be held December 4-5 in Nashville, TN at the Omni Hotel.
    2. The conference is shaping up to be very robust. There will be five tracks with over fifty speakers including the panelists. There will be a student panel to include all grade areas as well as a counselor panel with representation from several states.
    3. There will be a pre-conference workshop at no cost for 7th-9th grade girls sponsored by IBM. They already have 30 – 50 girls participating.
    4. There are four keynote speakers lined up: Heather Ricciuto of IBM, Diane Miller of Northrop Grumman, Paul Vann – an 11th grader who is the CEO of his own company, Vantech Cyber, and Sheila Boyington from Learning Blade.
    5. Marketing information is available to include samples of social media graphics. They are heavily promoting the conference via social media channels and continuously updating their partner and presenter toolkits which is a google doc.
    6. Find out more here: <https://www.k12cybersecurityconference.org/>
  + **NICE Annual Conference - Danielle Santos**
    1. Registration is still open for the conference scheduled for November 7-8, 2017 in Dayton OH.
    2. There are three pre-conference seminars that anyone can attach to their registration. The seminars include:
       1. Critical Success Factors for a Cybersecurity Apprenticeship Program.
       2. How to Build Robust Internship Programs Between Employers and Academic Institutions.
       3. Application and Uses of the NICE Cybersecurity Workforce Framework.
    3. The agenda is posted online which now includes all of the speakers and the keynotes. They have also added a CISSO panel.
    4. Find out more here: <https://www.fbcinc.com/e/nice/default.aspx>

# New Business - Davina Pruitt-Mentle spoke about National Cybersecurity Career Awareness week.

1. The National Cybersecurity Awareness week is scheduled to take place November 13 – 18, 2017. Note that November is also the National Career Development Month.
2. The idea was to couch this week in the Career Development month in order to emphasis the demand and opportunities as well as highlight the numerous pathways and showcase ongoing efforts.
3. See the attached presentation for more information and find out more here: [nist.gov/nice/nccaw](https://www.nist.gov/itl/applied-cybersecurity/nice/national-cybersecurity-career-awareness-week)
4. More resources will be added along the way.

# Summary of Action Items

# Minutes and presentation materials will be sent to all members.

* + Please feel free to share out the Competitions Survey link: <https://www.surveymonkey.com/r/YPXPX8V>
  + Visit the National Career Awareness Week site: [nist.gov/nice/nccaw](https://www.nist.gov/itl/applied-cybersecurity/nice/national-cybersecurity-career-awareness-week)

# Next Meeting Reminder - The next NICEWG meeting is scheduled for October 25, 2017.