# NICE Working Group

## Meeting Minutes

**Date: November 30, 2016   Time: 3:15 PM EST**

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

**Strategic Plan for NICE:** http://csrc.nist.gov/nice/about/strategicplan.html

## I.      Roll Call and Ground Rules

- Danielle Santos, NICE Program Manager, welcomed members to the meeting. As a reminder, this will be the last meeting for 2016.

- 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.

## II.     NICE Program Office Updates

- Rodney Petersen, Director of NICE, provided a recap on the highlights executed during this past year.

- The NICE Program Office is fully staffed. As a reminder, the following members are working hard serving the community in their various roles:

    o   Bill Newhouse, Deputy Director

    o   Danielle Santos, Program Manager

    o   Davina Pruitt-Mentle, Academia Lead

    o   Clarence Williams, Government Lead

    o   Marian Merritt, Industry Lead

- The Program Office is pleased about the developed processes for enhanced communications such as monthly webinars, quarterly eNewsletter and email communication.

- Growth in the K-12 area continues including the 2nd annual conference with an increase in technical programs of study. GenCyber camps benefit students and train middle school teachers.

- The Regional Alliances and Multistakeholder Partnerships to Stimulate (RAMPS) Cybersecurity Education and Workforce Development awardees are provided funding opportunities to build multistakeholder workforce partnerships of employers, schools and institutions of higher education, and other community organizations.

- The NICE Cybersecurity Workforce Framework has been updated along with aligning the knowledge units. The jobs Heat Map, CyberSeek, has been launched.

- Looking ahead NICE will also focus on a renewed emphasis on skills. Many employees convey this is needed and can be achieved through training and certifications. There will also be a renewed focus on the acknowledgement and importance of ongoing training. We are collectively working to unite on this challenge with other agencies. The NICEWG and subgroups assist in this challenge by bringing academia, industry and government together building a strong foundation.

III. **Opening Remarks**

a. Industry Co-Chair Andre Thornton shared thoughts on the new administration. Regarding education, there will be an increased opportunity for public and private partnership. This work is important and will receive more synergy. Gear up!

IV. **Standing Items**

a. **Fun Facts** –Annemarie B. Reed, Accenture Corporate Marketing, spoke about "Cracking the Gender Code".

- Accenture is a leading global professional services consulting, digital, technology, and operations company. Annemarie works on corporate citizenship, human resources, and talent among other things. Training for junior and high school girls through summer immersion programs as well as providing funding and research to help expand the program across the nation are supported.

- Girls Who Code is a U.S. non-profit organization working to close the gender gap in technology. There is a shortage of women in the computer science pipeline.

- Based on research, Accenture was unsatisfied with the availability in the workforce and why interest for women is decreasing. In college there are more men graduating in computer science since the 1980's. Women's share of the workforce has declined 24%.

- Computer skills are one of the most sought after and the rate of job creation is 3 times the U.S. national average. Below is what was found:
  - By implementing a strategy focus based on three stages we could more than triple the number of women to increase the female share of the workforce from 24 – 39%.
  - These strategies could boost cumulative earnings.

- The sooner actions are taken the sooner we can see some uplift. One primary way is with junior high school, high school and then college girls.

    o Showing that computing can be cool, fun, and not just for boys in junior high. Change perceptions that it's geeky and for boys only. Support parents and teachers to understand the role of computing.
    o During high school provide the needed resources and classes.
    o Inspire teachers and provide positive role models in college.

- The information provided is a quick overview on our research and findings. We're always looking to collaborate on solutions to increase the women in the pipeline.

- Find out more here: https://www.accenture.com/us-en/cracking-the-gender-code

b. **Report Roundup** –Yejin Cooke from NASCIO presented on the topic of the "State CIO Top Ten Priorities for 2017" and what this means.

- Beginning in 2006, NASCIO began surveying state CIO members to garner their focus, direction settings, and what they will be working on. Also solicited were the top 10 technologies, apps and tools which assist CIO's.

- Security is the #1 priority for the 5th consecutive year. Cybersecurity is a huge issue for states, and local and federal government. It should be noted there is a big gap between the #1 and #2 priorities and all others fall in line after that.

- Because resources are constrained, budget and cost control are listed and have appeared since 2009. Legacy modernization tries to balance cost savings.

- The bottom half of the top ten list become more important as we retire older technology. Data management and analytics, enterprise vision and roadmap for IT, and agile and incremental software delivery, relate to the balance between legacy and modernization.

- Agile appeared a year ago yet hasn't increased in importance. Finally, broadband reflects continued interest in closing digital divide.

- Issues that do not appear in the top ten are several items that tie for #11 such as HR, the talent crisis, procurement, innovation, and business process improvement.

- See attached presentation and find out more here: http://www.nascio.org/Portals/0/Publications/Documents/2017/NASCIO-TopTen-2017.pdf

c. **Event Engagement** – Members of the NICE Program Committee provided a recap of the 2016 NICE Conference and Expo.

- The NICE conference was both well attended and a success. For the first time ever there were pre-conference seminars on the topics of the NICE framework and building a cyber-ready workforce.

- There were approximately 500 persons registered for the conference. A survey sent to attendees garnered 114 responses. Below are some of the results:

    o There was a satisfaction rate of 98%.

    o 99% felt there was good program content.

    o 99% felt the conference was better than those held before.

    o A highlight was Byron Auguste, a keynote speaker, who spoke on rewiring the labor market to drive innovation in cybersecurity.

    o There was high praise for the new version of the NICE framework and the quality of speakers.

    o The conference was well constructed and provided good networking capabilities.

- Most presentations can be found on the conference website here: https://www.fbcinc.com/e/nice/ncec/presentations.aspx

- The next NICE conference is scheduled for November 7-8, 2017 in Dayton Ohio. During spring, 2017, a call for proposals and presentations will be issued. The program committee will be working on a theme.

- Simone Petrella, Program Committee Industry Co-Chair, seeks to increase industry participation and solve the workforce and training gaps. This year there was a lot of representation from training providers and academia but more participation from employers is needed. If you are interested in getting involved or plan to attend let us know!

d. **Strategy Stories** – Bill Newhouse spoke on the draft NIST Special Publication 800-181, NICE Cybersecurity Workforce Framework. This body of work relates directly to the NICE Strategic Plan, Objective 3.2: "Publish and raise awareness of the National Cybersecurity Workforce Framework and encourage adoption".

- The benefit of the NICE Cybersecurity Workforce Framework is having a common lexicon.

- The document contains seven (7) high level work categories developed from years of study and analysis within the career field. Within each work category are specialty areas, of which there are 34. Drilling further down are defined work roles and detailed descriptions of activities performed in cybersecurity. Most people carry out several work roles for which there are many tasks.

- The audience for the document are employers that can utilize the material to create training plans and to see other work roles to work towards. Certification providers have been mapping categories and we hope they continue to do so. Education providers who apply the framework can say this is what we teach towards and cite the outcome of these skills and abilities.

- NICEWG members can assist by sending the link for comments out to other folks and ask for feedback and updates. Look at the tasks and see if there are covered in a way that makes sense.

- See attached presentation and find out more here: http://csrc.nist.gov/publications/PubsDrafts.html#SP-800-181

e. **Metric moment** – Kevin Nolton from the Cyber Innovation Center spoke about "NICREC Measures for Success and Progress".

- Through a DHS grant, NICERC has been tasked to solve K-12 cybersecurity issues. The goal is to have a trained workforce that includes having both soft and hard skills.

- The developed course work provides resources to educators at no cost. Through training and teacher access, we can grow the amount of students impacted. Last year the impact reached over 375,000 students across the country by simply introducing them to cyber concepts.

- The curriculum reaches across the fifty states plus two territories. We continue to seek partners to reach out and find ways to work with your state and district to implement cyber and STEM. Working with 11 state departments and working state wide with curriculum. It is projected that the curriculum will be approved to half the states in the country.

- To assist in the transformation of education into the 21$^{st}$ century environment contact Kevin Nolten: Kevin.Nolten@cyberinnovationcenter.org.

- Educators are provided access to the Canvas Learning Management System which allows the team the constant interaction and traffic of downloads, inquiries and sharing feedback from the classrooms. These are the main way's we are garnering impact. The curriculum is

designed to be modular. Various projects and lessons can be implemented.

- See presentation attached and find out more here: http://nicerc.org/

## V. Subgroup Updates

a. **K-12** - Carlos Garcia, co-chair, reported that the K-12 co-chairs are splitting work in leading the monthly meetings. The project teams under the subgroup could not meet the November deadline and have pushed the deadline back. The K-12 subgroup is growing. With new members come new ideas to focus on in the future.

- There is a Cybersecurity for Computer Science Webinar next Wednesday, December 7th at 2:00pm. Register through the following link: http://csrc.nist.gov/nice/webinars/index.html

b. **Collegiate** – Heather Monthie, Collegiate co-chair, is the subgroups new co-chair replacing Barbara Endicott-Poposky as Barbara has fulfilled her term.

- The Collegiate subgroup did not meet their imposed deadline for deliverables. In April and May 2016, the focus was narrowed but because so many people were unavailable during the summer the summer meetings were canceled.

- When the subgroup reconvened in the fall, the group began discussing its mission and what to accomplish moving forward. About fifteen ideas were recorded which have been solidified down to ten. The group was surveyed on those ten topics and which ones were of most interest. Some of the ideas include: job fairs, student associations, how to get more women and veterans involved in cybersecurity, cybersecurity teachers, pathways, and a program/training repository. Heather has been collecting the responses and the group will discuss how to move forward on some of the ideas during the next meeting.

c. **Competitions** – Dan Manson, co-chair, reported that the competitions white paper was released during the NICE Conference last month. The white paper is available for download from this site: http://lp.katzcy.com/cybersecuritygames.

- There were over twenty-five persons interviewed for contribution to the white paper. This paper discusses the benefits of competitions.

- Since completion, subgroup members have been discussing how to elevate the competitions white paper. The white paper will be presented during a NICE Webinar on January 18th, 2017. The hope is

that the paper gets wide distribution and the subgroup is looking forward to the feedback.

- The timing of the white paper is particularly interesting due to the increased growth in cyber competitions. This year, CSAW is partnering with NYU Abu Dhabi and Indian Institute of Technology Kanpur to expand its reach as an international competition with worldwide impact.

d. **Training and Certifications** – Linda Montgomery, co-chair, discussed a matrix that was developed by the training and performance based certifications project team.

- The group took the framework prior to the 800-181 Special Publication and mapped vendor credentials based on the Army, the Navy and the National Guard and overlaid information from the C3 group. The updated framework will increase and expand the KSA's. Training gaps will be a byproduct of output of the matrix were building. The draft of the credential matrix is located on the Training and Certifications SharePoint site here: [Copy of NICE Working Group Presentation 11 1 2016 W C3 Comparison 2](Copy of NICE Working Group Presentation 11 1 2016 W C3 Comparison 2)

- The cyber range one pager is complete. Cyber range programs will be evaluated by entities such as Ixia and the MI range.

- The next subgroup meeting is scheduled for December 9th at 2:30 ET.

e. **Workforce Management** – reference "New Business" below.

VI.    **Project Progress Reports**

a. **National K-12 Cybersecurity Education Conference** – Amber Lindsay, Ikeepsafe, provided a planning update. Great feedback on the 2016 conference was received from participants through surveys. Based on the feedback, there is consideration to schedule the conference on December 4-5, 2017 to piggy back on the ACTE conference. Once a venue is locked in, a save the date notice will be sent. The committee is also working on theme and welcome suggestions. Feel free to reach out directly to Amber Lindsay at amber@ikeepsafe.org.

b. **NICE Challenge Project** – James Ashley, Project Manager, let members know that ten education units have been added with over 85 entities using the NICE challenges, most being universities. The largest in content has just been released. The challenges have undergone a complete remapping so that they map to the new framework including the new work roles. Find out more here: [https://www.nice-challenge.com](https://www.nice-challenge.com)

c. **CyberSeek** – Randi Parker, CompTIA, spoke about the CyberSeek launch at the NICE conference.

- Last year, funding for CompTIA, in partnership with Burning Glass, was granted for the development of a cybersecurity jobs heat map showing demand and supply.

- This idea came out of discussion over the many years of shortcomings in the cybersecurity workforce. New variables such as the Internet of Things, addressed weak links and human errors. CyberSeek looks to connect employers with employees. CyberSeek is powered by certified bodies of data and discussion to include more. This tool also assists displaced workers.

- There is not a cycle for the data set so that it can be flexible and to keep the data in real time as possible. The data is leveraged from DOL. Will Markow, Burning Glass, has additional information.

- There is an email address for comments located on the website. Find out more here: http://cyberseek.org/

VII. **New Business -** Kristin Judge, Workforce Management co-chair, kicked off the discussion on their Human Factors Mapping Project (HFMP).

- The vision for this idea is that individuals in an organization can fulfill their cybersecurity responsibilities and mitigate risk. The deliverable is to integrate the NIST and NICE frameworks with the business and functional roles of an organization.

- Most executives assume their IT or cyber divisions take care of risks. This project information aims to help non-technical persons understand problems and start addressing them. Many have no awareness of the NICE or NIST framework. By developing a bridge between cyber functions and the rest of the organization, a construct can be developed, as an entry point, to mitigate cybersecurity risk.

- All workforce will be considered and an understanding of how all positions at all levels affect cyber risk.

- Steve Woskov provided an overview of the framework which looks from a horizontal and vertical cyber lense. There were seven business functions that can be found in any organization. Three are different position levels and categories such as executive leadership, middle management and individual contributor. What is the risk to an organization if a role is not fulfilled the importance of position and function and once identified, what are the mitigations and how do they tie back to the frameworks?

- Rachael provided an example of how the information applies to business functions. The example drills down the different positions to

show how the end user can process information. Shown are what cyber risks in these positions may need to consider. For example, working with a 3$^{rd}$ party introduces information risk. A mitigation strategy is to have the proper planning and to make sure all employees understand how to keep the information secure.

- The source of the business functions derive from the project team and their experiences.

- This subgroup also has a literature review team that will ask these questions to reinforce what we're doing.

- With the new release of the NICE framework we'll need to relook and map against this new construct. The hope is this tool will introduce persons to the NICE Cybersecurity Framework. The best intersection will be in area of describing why we don't have job titles in framework.

- This project team is defining mitigation strategies and roles across the various business functions. The hope is that this working group meeting generates additional interest. Members look across other subgroups to pull information on other tasks. For example, training could be more intense with security or there could be different types. The critical mass can flesh out the twenty-one permeations of training at different levels.

- The subgroup asks for feedback on this model. To review, go to SharePoint (https://nistgov.sharepoint.com/sites/NICEProgram/NICEWG/WorkforceManagement/) and add commentary or reach out to Pilar, Steve, and Rachael etc. We also welcome volunteers. If this project interests you and you wish to help drill down the seven functional areas, let us know.

- For more information see attached presentation and go here: Cybersecurity Human Factors Mapping Project

**VIII. Summary of Action Items**

- Comments on the NICE Cybersecurity Framework are due by January 6$^{th}$.

- Feedback on both the model and construct of the HFMP is welcomed as well as additional volunteers.

IX. **Next Meeting Reminder** –The next NICEWG meeting is scheduled for January 25$^{th}$, 2017. Reminder that there will be no meeting in December.