

# NICE Working Group

## Meeting Minutes

Date: April 27, 2016 Time: 3:30 PM EST

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

### I. Roll Call and Ground Rules

- Danielle Santos, NICE Program Manager, welcomed members to the meeting and mentioned that the Adobe Connect chat box feature should be utilized to announce attendance, provide feedback and ask questions.
- Danielle also noted that participation in the NICE Working Group is not intended for advertising and promotional purposes and to keep this in mind when using the chat feature.
- Danielle apologized to any members unable to join the Adobe Connect due to the limited capacity. The program office is working to alleviate this issue for future meetings.

### II. NICE Program Office Updates

- Rodney Petersen, NICE Program Director, talked about an excerpt from President Obama's previous State of the Union address on the subject of reforming America's training programs. NICE works towards the same activities and themes stated in this speech. To better focus on required skills, on the under and unemployed, provide better career paths, and investigate job driven and diversity in training. These themes align with the NICE program.
- Federal initiatives include the Trade Adjustment Assistance Community College and Career Training (TAACCT) program which provides grants to train individuals for higher paying jobs, as well as, the Apprenticeship USA program which provides rapid technical training.
- The Obama Administration created the Ready to Work job driven checklist to encourage employers to engage with employees to 'earn and learn', to make smart choices and to measure initiative outcomes.
- NIST is in the process of establishing Regional Alliances and Multi-stakeholder Partnerships to Stimulate (RAMPS) Cybersecurity Education and Workforce Development. The focus is on local and regional economies. Be on the lookout for an announcement sometime next week followed by a webinar discussing grants and organizations that may apply. Information will be distributed to the NICEWG and will also be included on the NIST/NICE website.
- For more information about the aforementioned programs and other Federal initiatives, please refer to the attached presentation and the website links below:
  - Ready to Work <https://www.whitehouse.gov/ready-to-work>
  - Ready to Work Fact Sheet <https://www.whitehouse.gov/the-press-office/2014/07/22/fact-sheet-ready-work-glance-job-driven-training-and-american-opportunit>
  - Trade Adjustment Assistance Community College and Career Training (TAACCT) Grant Program <https://doleta.gov/taacct/>
  - Upskill Fact Sheet <https://www.whitehouse.gov/the-press-office/2015/04/24/fact-sheet-administration-announces-new-commitments-support-president-ob>
  - Apprenticeship USA <http://www.dol.gov/featured/apprenticeship>
  - TechHire Initiative <https://www.whitehouse.gov/issues/technology/techhire>

### III. Opening Remarks

- a. President Kathi Hiyane-Brown, NICEWG Academic Co-Chair, welcomed members to the meeting and mentioned her recent attendance at the American Association of Community Colleges (AACC) Annual Convention in Chicago. Kathi emphasized that although in our circle we talk a lot about cybersecurity and training opportunities, etc., others not linked to our network are not aware of available resources. There were many community college presidents that did not know about the NSF grant Whatcom Community College was awarded to enhance cybersecurity education nationwide. The scope of our work is just beginning. We need to continue to talk about the urgent need and ask for support. President Kathi thanked everyone for their efforts in promoting these critical issues.
- b. Andre Thornton, NICEWG Industry Co-Chair, followed up commenting on the need to prepare the future workforce. There are groups and organizations within companies that are focused on finding the right talent. There is also a lot of effort coming out of the government.

### IV. Standing Items

#### a. Fun Facts – creating a culture of evidence

- Rodney presented facts on minorities in cybersecurity. He conceded that these facts are not fun or encouraging as the data available is not very current or reliable. This uncertainty in the data aligns with NICE goals, specifically, to nurture a diverse learning community.
- The preliminary data is discouraging for minorities; however, it may be outdated. One study indicates that minorities make up just 29% of the science and engineering focused workforce. NICE will try to investigate more recent data and work towards having minorities better represented in cybersecurity as one of our initiatives. If you know of any newer data sources, please contact us.
- Please refer to the attached presentation and the website links for the referenced data:
  - African Americans Underrepresented in the Cybersecurity Field (April 7, 2016) <http://www.forbes.com/sites/stevemorgan/2016/04/07/african-americans-underrepresented-in-the-cybersecurity-field/#141b4f1d323f>
  - You Think the Lack of Diversity in Tech is Bad; It's Worse in Cybersecurity (March 23, 2016) <http://dcinno.streetwise.co/2016/03/23/lack-of-diversity-minorities-in-cybersecurity-industry-hiring/>
  - International Consortium of Minority Cybersecurity Professionals <https://icmcp.org/>
  - International Colloquium for Minorities in Cyber Security <http://icmics.com/default.asp>

#### b. Report Roundup – learning from good ideas

- Davina Pruitt-Mentle, NICE Academic Lead, presented on Barriers and Opportunities for 2-Year and 4-Year STEM Degrees: Systemic Change to Support Students' Diverse Pathways.
  - The report highlights some of what this working group is engaged in. In summary, the report looks at the importance of STEM. The report recognizes degree holders equate to a higher salary, lower unemployment and a lower gender gap in the STEM field.

- The study finds that most degree holders do not end up working in the STEM field. Many students lose interest before degree completion and transition to other studies. Patterns show an array of pathways (not pipelines) and transfers during the second year with some transferring more than once. There is also an increase in the number of students enrolled in multiple institutions. Many do not finish in 4 years. There is an increase in the number of students that have gap years; taking time off. The report also states that minorities make up about half of those enrolled online in 'for profit' degree programs.
- The important takeaways include gatekeeper classes and a rising cost for STEM from institutions raising tuition for these types of programs. Recommendations include adjusting the data collection process to better understand findings. This type of data is difficult to collect. Also, better career research looking at enrollment and analyzing patterns. The report can be found by visiting: <http://www.nap.edu/catalog/21739/barriers-and-opportunities-for-2-year-and-4-year-stem-degrees>

#### c. **Event Engagement – highlights from recent events and upcoming events**

- Frank Cicio, co-chair of the NICE Workforce Framework Project, presented on the following events:
  - **Aspen Institute and Lumina Foundation (past event)** – Frank traveled to Washington DC last week to attend an UpSkill America event where industry and education came together to discuss programs and sustainability of the programs that help train the workforce. The focus was on the employment talent business case.
  - **Epic Challenge (upcoming event)** – The Epic Challenge will be held on May 18<sup>th</sup> and brings students from all around the world to participate in a 'viral hackathon'. The Challenge is defined by DHS and DOD. There are about 125 teams that will work on the final leg which is about 3 days. The Epic Challenge is always looking for mentors in the industry. Learn more information at: [https://youtu.be/29\\_DcoCWqZs](https://youtu.be/29_DcoCWqZs)
  - **Cybersecurity Awareness Week(CSAW) (upcoming event)** – CSAW is a student run cybersecurity event sponsored by NYU featuring competitions, an industry conference, workshops and a career fair. Find out more at: <https://csaw.engineering.nyu.edu/>
  - Please refer to the attached presentation for additional information about these events.

#### d. **Strategy Stories – new developments that align to NICE Strategy**

- Ambareen Siraj, founder and chair of Women in Cybersecurity (WiCyS) Initiative presented information on the WiCyS Conference. The conference aligns with NICE objective 2.4: Grow creative and effective efforts to increase the number of women, minorities, veterans, persons with disabilities, and other underrepresented populations in the cybersecurity workforce.
  - WiCyS is unique because students make up almost half of the attendance. Otherwise attendees are current and prospective cybersecurity professionals. Under the National Science Foundation (NSF) and beginning in 2013, recruitment and retention has grown to 800 participants in 3 years. Students attend at almost no cost.

- Outside of the student population, there is equal distribution amongst educators and industry. Participants include 57% students, 20% educators and 20% professionals.
- The conference welcomes men who support women in cybersecurity. 13% of participants were men. Feedback from men is that the conference is an eye opening experience which changed their perspectives on how it feels to be a woman and minority in the industry.
- The conference hosts several workshops with 50 participating organizations. Time will tell if the conference is effective. They are collecting and analyzing data and feedback to determine the impact, especially for young women.
- Participation can be in the form of attendance, conducting sessions, committee participation, etc. Please refer to the attached presentation and the URL below for additional information: <https://www.csc.tntech.edu/wicys/>

e. **Metric Moment – what gets measured gets done**

- Casey O’Brien, co-chair of the NICE Collegiate Subgroup, presented some results from the cybersecurity in the top U.S. undergraduate Computer Science programs study.
  - The study from Cloud Passage evaluated top ranked technical universities (from US news and world report/business insiders top 50/2015 QS world rankings).
  - The study researched what the universities have to offer regarding cybersecurity courses and the requirements to graduate. The results are dismal and not surprising.
  - Some of the metrics in the report included only 3 out of top 50 schools require a cybersecurity course for graduation. The findings revealed that out of the top 10 schools, not a single program requires a cybersecurity course to graduate. Grades were assigned to each university and there are no A’s assigned, only 3 B’s and 8 earned F’s. What stands out is how much Information Security is embedded in programs as opposed to pure dedicated cyber courses. With cybersecurity programs they see security the way ABET (accreditation board) defines it.
  - We don’t know if the lessons learned being integrated in the top schools.
  - For more metrics and information visit: <https://www.cloudpassage.com/company/press-releases/cloudpassage-study-finds-u-s-universities-failing-cybersecurity-education/>

V. **Subgroup Updates**

- a. **K-12** – Virginia Lehmkuhl-Dakhwe, co-chair, spoke about the subgroup’s Tiger Teams including the national computer science initiative which is compiling information on computer science and how cybersecurity is represented in computer science education. Another Tiger Team is reviewing the Computer Science K-12 framework. The convening group would like to catalog after school programs that exist. The next K-12 subgroup meeting is May 11<sup>th</sup> and will feature updates and goal identification from the Tiger Teams.
- b. **Collegiate** – Casey O’Brien, co-chair, shared with members that the Collegiate subgroup has been meeting since June 2015. They have completed working through the NICE Strategic Plan and have identified 3 priority goals. Moving forward, the group will divide into 3 groups, Group 1 will focus on Goal 1.1, stimulate the development of approaches and techniques that can more rapidly increase the supply of qualified cybersecurity workers. The team lead is Dr. Heather Monthie, Grand Canyon University. Groups will define objectives and deliverables in time for the NICE conference. Group 2 will focus on goal 3: 3.4, promote tools that assist human resource professionals and hiring managers with

- recruitment, hiring, development, and retention of cybersecurity professionals. Dr. Barbara Endicott-Popovsky (co-chair) will lead for now. Finally, group 3 will have some cross pollination with FCC reliability and interoperability group defining value propositions for the NICE framework. In working to bring industry into this fold, there is a need to do a better job of making the business case and develop value propositions as it specifically relates to the framework. Mark Petersen will spearhead this effort.
- c. **Competitions** - Dan Manson, co-chair, mentioned the CyberPatriot final winners and the competition becoming a national sport. The cyber defense competition had a member from the University of Central Florida on all 3 teams. Dan also mentioned that the National Cyber League will be held May 2 – June 30. Dan and Jessica Gulick, the subgroup-co-chair, will participate on a panel at CISSE on June 15<sup>th</sup> to discuss how competitions are being embedded in schools. Dan also stated that the subgroup is in the process of developing a white paper on standardizing competitions.
  - d. **Career Development and Workforce Planning** – Leo Van Duyn, co-chair, spoke about the team’s focus on 12 job role profiles. The goal is for the subgroup members to review and provide feedback on the 12 job roles by next month. All will benefit by having a baseline to develop internal programs. Additionally, the subgroup plans to review a diagnostic tool with Montana Williams (Training and Certifications subgroup co-chair) and examine the Heat Map project which provides existing role profiles and KSAs that the private industry needs. Frank, co-chair, spoke about sustainability and tangible vs. intangible assets and posed the question ‘Are resources a risk or an asset’? The NICE initiative is trying to standardize a framework. There is always the question of funding. The goal is for companies to justify the ROI on investing in coursework. If companies invest dollars and retain employees over time, employees have longevity. Frank also spoke about project based learning which can accelerate the workforce, particularly for high school and higher education and scale college workforce.

## VI. Project Progress Reports

- a. **NICE Annual Conference** – Danielle Santos, NICE Program Manager, revealed the call for proposals are open through May 31<sup>st</sup>. The NICE Conference and Expo is being held in Kansas City, MO from November 1-2, 2016. They are looking for proposals that align to the theme (“Innovations to Shape the Future Cybersecurity Workforce”). The conference will showcase prospective collaboration and innovative methods that align with NICE’s goals. The selected presentations will be a part of track sessions. Proposals will be reviewed by the program committee in June. Selections will be made in early July and then announced along with key note speakers. For more information and other key dates click the following link:  
[www.fbcinc.com/nice](http://www.fbcinc.com/nice)

## VII. New Business

Diana Burley spoke about the ACM-IEEE Joint Task Force on Cybersecurity Education

- a. Diana, co-chair of the Task Force, stated that the ACM-IEEE Task force began in September 2015 developing curriculum for cybersecurity education. The intent is to provide curriculum guidance for ALL institutions with a focus on cybersecurity being a computer based discipline. Cybersecurity involves people and other technologies such as law, policy, and human factors. ACM is a computing based society. They are actively engaged in talks on the definition. Please reach out if you want the group to consider recommendations.

- b. Growing to over 100,000 members since 1968, ACM publishes computer curricular standards. This effort launched in September and in the fall, developed the parameters. We first reviewed previous work and then started activity engaging with large and small groups.
- c. If you would like the full briefing, reach out to Diana. Leading to June, ACM will hold an International Security Workshop along with the CISSE colloquium in Philadelphia. If you'd like to participate contact Diana. ACM will develop a draft to present to ACM education council. Documents will be posted on the website. <http://www.csec2017.org/>
- d. Rodney asked Diana if the standards for computer science are a precursor for curriculum. Need a baseline in part because the field is so diverse. Diana answered by saying that considering engineering schools, business schools, etc., developing guidelines that allow flexibility is key. This is a foundation for that effort.
- e. Please refer to the attached presentation for additional information.

VIII. **Summary of Action Items**

- Danielle Santos reminded the members to lookout for the RAMP federal funding and where to apply.
- The slide presentation and meeting minutes, including links, will be sent to members the week of May 2<sup>nd</sup>.

IX. **Next Meeting Reminder** - May 25, 2016 at 3:30PM Eastern Time