RSA® Conference 2019

BETTER.

Peer2Peer

Best Practices for Youth Outreach and Education in Cybersecurity

P2P3-R11: Best Practices for Youth Outreach and Education in Cybersecurity

Heather Ricciuto, Academic Outreach Leader - IBM Security

Best Practices for Youth Outreach and Education in Cybersecurity

2.93 Million! According to a [report](#) published by (ISC)2[1] in December 2018, that is the number of open cybersecurity positions around the globe. If we are to address such a vast gap, inspiring our youth to join the cybersecurity workforce of the future is essential. I have been personally engaged in youth outreach in cybersecurity for the past 3 years, leading a volunteer program at IBM known as [IBMCyberDay4Girls](#). Our program aims to educate girls aged 11 to 14 how to protect themselves online, introduces them to cybersecurity terminology and helps them understand that cybersecurity isn't just for boys! Of course, outreach to youth of all ages and genders is critical to pipeline development, and many organizations, like IBM, are taking action to address the problem. I have written about both the skills gap and the gender gap many times over that past few years, and while I would be happy to share my views once again, I decided to take a slightly different approach and get input from fellow industry professionals, parents and academia.

On March 7, I invited a small group of RSAC 2019 attendees to join me in a Peer 2 Peer discussion on the importance of youth outreach. To kick of the discussion, I asked my guests why they believe youth outreach is critical in addressing the skills & gender gaps. Here's what they told me:

- There is a general [lack of awareness amongst our youth](#), because parents don't understand cybersecurity, and because teachers don't really know what cybersecurity is. Therefore, neither parents nor educators are fully equipped to discuss cybersecurity career opportunities with their children/students.
- Youth are our primary vehicle for filling the talent pipeline.
- Diversity leads to greater innovation/generation of new ideas.
- We must teach our youth what they can do to drive innovation in cybersecurity and help make the world a safer place.
- Cybersecurity affects all lines of work; therefore, everyone needs a fundamental understanding for cybersecurity regardless of their ultimate career choice.
- We need to demystify what cybersecurity is by putting role models in front of our youth. Just as they see doctors and lawyers as role models, they need to see and understand what cybersecurity professionals play a critical role in society at large.

It is one thing to build awareness and demystify the profession, but how do we get youth excited about cybersecurity? Here's what my peers told suggested:
- Pair with their skills/interests e.g. [gaming](#);
- Create hands-on challenges/activities e.g. puzzle/escape rooms, tabletop exercises;
- Provide high school internships;

- Help them understand that cyber jobs pay higher salaries on average than other professions;
- Focus on at-risk youth and give them a purpose.

Many organizations, like IBM, are engaging in education and outreach programs around the globe.   I encourage you to do your own research and find the program that's right for you, your students or your own children. Following are just a few examples:

- Girl Scouts of USA now offers cybersecurity badges at all band levels
- The GenCyber program provides summer cybersecurity camp experiences for students and teachers at the K-12 level. .
- CyberPatriot inspires K-12 students toward careers in cybersecurity through education, camps and competitions. Originating in the USA, CyberPatriot has expanded to Australia, Canada, Saudi Arabia and the UK.
- National Cyber League provides virtual training for participants to develop, practice and validate their cybersecurity knowledge and skills using simulation environments.
- Girls Who Code is on a mission to close the gender gap and change the image of what a programmer looks like and does!
- Girls Go CyberStart empowers high school girls to be our next leaders and to protect the web through a series of fun and interactive digital challenges.
- Hacker Highschool (HHS) is an ever-growing collection of lessons written to the teen audience and covering specific subjects that are timely, interesting, and important for teens.
- Bits N' Bytes Cybersecurity Education is a non-profit dedicated to educating and equipping citizens with the cybersecurity skills needed to help prevent future cyber-attacks in an age of real-time connectivity and con-artistry.
- The Center for Cyber Safety and Education (Center), formerly (ISC)² Foundation, is a non-profit charitable trust committed to making the cyber world a safer place for everyone. They work to ensure that people across the globe have a positive and safe experience online through our educational programs, scholarships, and research.
- WiCyS is a non-profit membership organization dedicated to bringing together women in cybersecurity from academia, research and industry to share knowledge, experience, networking and mentoring. WiCyS student chapters undertake activities to promote recruitment, retention and advancement of women students in cybersecurity, and each year hundreds of students are awarded student scholarships to attend the annual WiCyS conference.
- Year Up enables young adults to move from minimum wage jobs to meaningful careers in just one year

Know of another great organization dedicated to (youth) outreach in cybersecurity that hasn't been mentioned here? Tell me about it by commenting on this blog.

Other Resources
- Start Engineering
- Iamcybersafe.org
- NICE