Cool Careers for Girls in Cybersecurity Summit 2011

October 18, 2011

10 a.m. to 1:30 p.m.

Kossiakoff Center at the Johns Hopkins University Applied Physics Laboratory

CW 12 CyberWatch

Educational Technology Policy
Linking Research to Practice
Research and Outreach

NSF

APL

The Cool Careers for Girls in CyberSecurity Summit would not be possible without women professionals volunteering their time. Educational Technology Policy, Research and Outreach, the K12 lead of CyberWatch, would like to thank the women from the following organizations who volunteered their time to help middle school girls understand how their innate gifts and interests can help them have a successful career in any STEM field.

- Boeing
- Cisco
- FBI
- Harford County Public School System
- Invertix
- Johns Hopkins Applied Physics Lab
- Northrop Grumman
- NSA
- University of Maryland
- UPS

We would also like to thank the Johns Hopkins Applied Physics Lab for the donation of the Kossiakoff Center.

Speaker Guide

Educational Technology Policy, Research and Outreach, the K12 lead of CyberWatch, thanks you for volunteering to present at the 6th Annual 2011 Cool Careers for Girls in CyberSecurity Summit. We could not do this without your willingness to share your experiences with our middle school girls.

This speaker guide will help you prepare for the day and assist you in answering student questions. It contains:

- Scenario
- Agenda
- Annotated Agenda with additional ideas on ways you can help the event go smoothly
- Activities and clues (in case you are curious about the crime)
- Questions Kid have asked about CyberSecurity and Women STEM Professionals in the past
- Directions

Scenario

Middle school girls become Cyber Super-Investigators (CSI) for a day to solve a cyber-crime.

During this interactive crime solving event, girls learn from women in diverse companies and agencies about what it takes to navigate the professional pipeline in the vast fields of Cybersecurity and Information Assurance, as well as other science, technology, engineering, and mathematics (STEM) fields.

The middle school girls complete hands-on activities with cybersecurity and STEM professionals and get clues to the crime. The cybercrime scenario involves the theft of sophisticated technology; a model of a new, advanced radar system has been stolen. A beauty pageant has been halted because it is suspected that one of the contestants plans to sell the model during the pageant. There is cyber- and physical evidence that suggests that the model of the radar system may have been smuggled into the pageant as part of one of the contestants costumes. Only the lead investigators, the cyber professionals who are speaking at Cool Careers for Girls in CyberSecurity know all the details. Their clues will help the middle school girls solve the crime! The middle school girls will soon find out that it is Miss Alaska who smuggled the model of the radar in as the hat to her costume. She was able to hide it in an oversized golf ball in Miss Florida's costume but, the middle school CSI investigators will not be fooled!

Agenda

Arrival –10:00 a.m.

Meet CyberCareer Speakers

10:00-10:15

Welcome, Introductions and Video: Setting the stage for scenario and activities

10:20 - 10:40: Activity 1
10:45 - 11:05: Activity 2
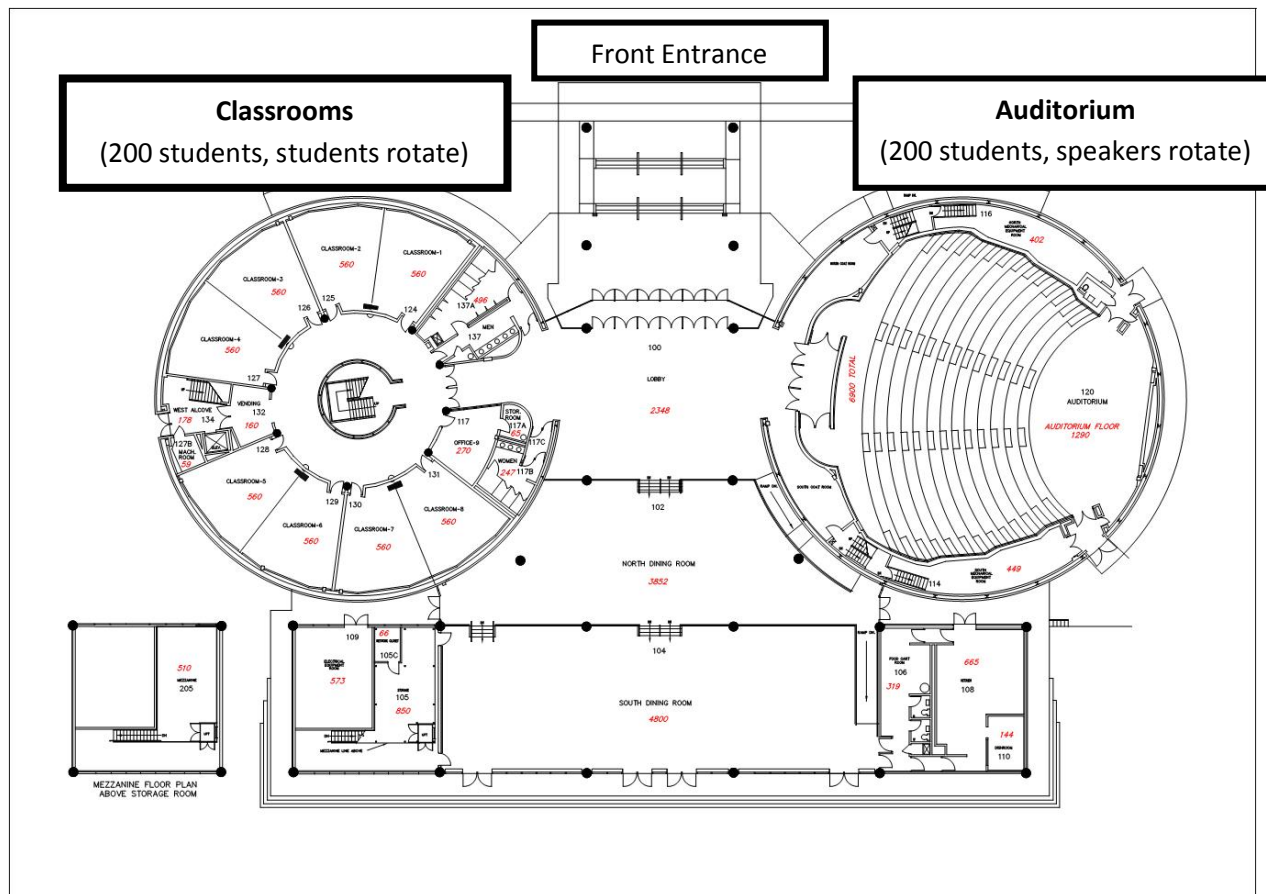11:10 - 11:35: Activity 3
11:40 - 12:00: Activity 4

12:10-12:30: Lunch Speaker

12:30-12:45: Solve the CyberCrime, Thank You's

12:45-1:15: Activity 5 in Auditorium (for Howard and Prince Georges County Students)
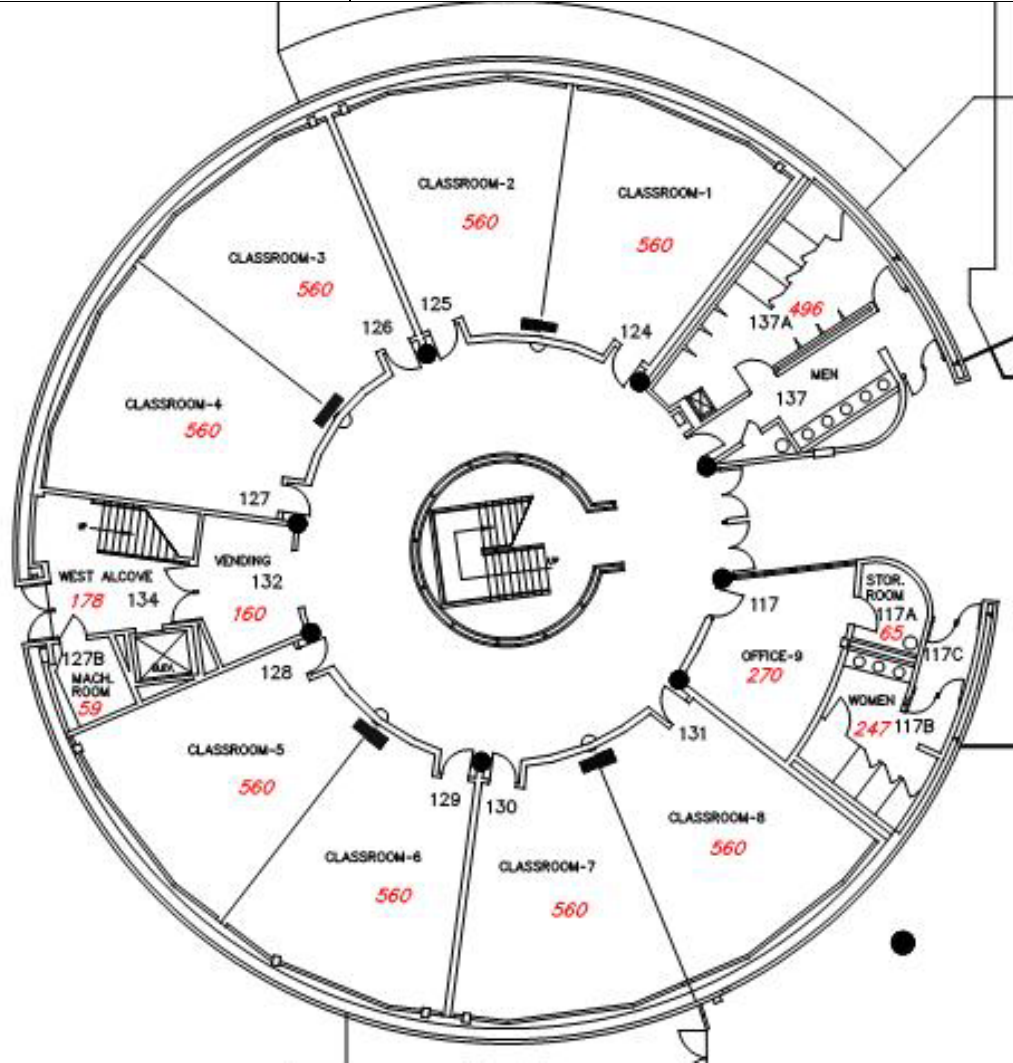
Agenda with Notes

If you should find a lost student this agenda will help you direct her.

Arrival – 10:00 a.m.	Meet CyberCareer Speakers	Busses are scheduled to arrive between 9:40 and 10 a.m. **It would be great if speakers could make themselves available to talk to students who arrive before 9:50.** Quotes about why our speakers say their careers are cool have been fastened to the curved walls around the classrooms. Speakers cans stand in this area to answer student questions. Students should take advantage of this time to introduce themselves to the speakers and ask a few questions.
		The Ladies' Room is also in this area.
		Speakers can help usher students toward the auditorium. Students must be in their seats in the auditorium by 9:55 so that we can begin on time. Students who will be staying in the auditorium during the activities should sit in the center so that they will not slow down the transition of students who need to move to classrooms after the introduction.

10:00-10:15	Welcome, Introductions and Video Setting the stage for scenario and activities	Students will be welcomed and the organizations which have supported us with speakers will be introduced. An introductory video will be shown to set the stage for the cybercrime students will be asked to solve.

| 10:20 - 10:40 | Activity 1 | Schools have been pre-assigned to their first activity. Half of the students will remain in the auditorium and the 4 speakers will rotate; so that students will participate in 4 activities while remaining in the auditorium. The other half of the students will move clockwise around the circle of classrooms to participate in 4 activities.

During the last activity please thank students for being so polite and cooperative up to this point and remind them that there is still more to come. The lunchtime speaker is going to begin promptly at 12:05 so the students need to be in their seats, quiet and ready to pay attention. Setting the expectation after this last session will help us stay on schedule. |
| --- | --- | --- |
| 10:45 - 11:05 | Activity 2 | |
| 11:10 - 11:35 | Activity 3 | |
| 11:40 – 11:55 | Activity 4 | |

This table lists the starting position for each school group.

Room	Activity	Group
Classroom 1	Radar	Oakland Mills 1
Classroom 2	Software Engineering	Lake Elkhorn 1
Classroom 3	Linear Programming	Golden Ring 1
Classroom 4	Networking	Windsor Mill 1
Classroom 5	Law Enforcement	Magnolia 1
Classroom 6	GIS	Magnolia 2
Classroom 7	Cryptography	St. Louis1
Classroom 8	Penetration Testing	St Louis 2
Auditorium	Systems Engineering How to be successful in Cyber Logic Cryptography	Oakland Mills 2 Lake Elkhorn 2 Isaac Gourdine 1 & 2 James Madison 1 & 2 Golden Ring 2 Windsor Mill 2

12:05-12:30	Lunch Speaker	**Speakers can help students to move quickly from their last activity to the tables so that the lunchtime speaker has the full time allotted to her.** Speakers can join the students at their tables. In order to facilitate instructions from your chaperones, have your students fill entire tables and try to stay close together. Harford County must leave at 12:30 so tables have been reserved on the top tier nearest the exit to facilitate a smooth exit for these students.
12:30-12:40	Solve the CyberCrime, Thank You's	At 12:30 Harford County chaperones should quietly lead their students to the exit. The remaining students will solve the cyber crime together.
12:40-12:45	Dismissal or Transition to Activity 5	Baltimore County and St Louis schools will exit and load busses. Prince Georges and Howard County Schools will move to the final activity of the day.
12:45-1:15	Activity 5 (for Howard and Prince Georges County Students)	This last activity will take place in the auditorium to keep students together and facilitate dismissal.

Activities and Clues

Just in case you are curious about the clues to the crime

Activity	Clue	Location
Systems Engineering	An observation indicates that there are three costumes that could disguise the radar system: Miss Alaska's, Miss Florida's and Miss New York	Auditorium
Radar	Picture of the radar which is a white ball	Classroom 8
Law Enforcement	A model of a new advanced radar designed to be installed on ships was found in Miss Florida's Costume trunk	Classroom 4
GIS	The Ship with the new radar was fitted in a Port in Alaska.	Classroom 3
What is a cybersecurity career? What are employers are looking for?	A security key that opens all the dressing rooms was created using the pageants master computer. This computer is password protected and only the head of the pageant has the password.	Auditorium
Cryptography 1	There is an encrypted message that says "They are searching the costume trunks alphabetically."	Auditorium
Logic	The intelligence report says that a model of radar was stolen. This model was potentially smuggled in on the costume of one of the contestants. There are three contestants who have decorations resembling radar – Alaska, Florida, and New York.	Auditorium
Penetration Testing	There is evidence that the lock on Miss Florida's Trunk has evidence of tampering	Classroom 1
Software Engineering	Two package that weigh almost the same as the model of the radar was shipped from Alaska and New York to the beauty pageant	Classroom 7
Cryptography 2	There is an encrypted message that says "Get rid of the model fast."	Classroom 2
Networking	A packet sniffer was found on the computer connected to the router.	Classroom 5
Linear Programming	The intelligence report says that a model of radar was stolen. This model was potentially smuggled in on the costume of one of the contestants. There are three contestants who have decorations resembling radar – Alaska, Florida, and New York.	Classroom 6

Questions Kid have asked about CyberSecurity and

Women STEM Professionals in the past

Kids have asked these questions in the past. You may want to think about how you would answer these questions if asked.

Cybersecurity careers

- How is cybersecurity used in today's jobs? How does cybersecurity affect other jobs?
- What types of jobs are cybersecurity jobs?
- What are the job responsibilities in each of the cybersecurity fields?
- How many hours a day do cybersecurity employees work?
- How much do cybersecurity workers get paid?
- What kind of people do cybersecurity professionals work with?
- What courses should I take if I am interested in this field?

Connection of information assurance to other careers

- How people create cybersecurity?
- How does cybersecurity protects us?
- How will knowing about cybersecurity help me with my career?
- How can I become more familiar with how computers work?

Hackers

- How do you become a hacker? What do you need to know?
- What do Hackers know? And what do they do? What do they want from me?

Security of personal data and computers

- How are we protected on the internet?
- How do you keep information safe on the internet?
- How do the various computer programs work to protect my information?
- How do I protect my computer and information?
- How safe is my computer now?
- How do I get rid of viruses?

Women STEM Professionals

- What do you wear to work?
- Do you have a family? Is it hard to work and have a family
- What benefits does your company offer?
- Do you travel?
- What hours do you work?
- How many women do you work with?

Directions

The Kossiakoff Center is on the
Johns Hopkins University Applied Physics Laboratory Campus
11100 Johns Hopkins Road
Laurel, MD 20723-6099
Directions and links to a Google Map can be found on their website at
http://ep.jhu.edu/locations/apl/directions

Parking is free and available on campus. When coming from Route 29 turn right on Pond Road, just past the service station. Follow the signs to the Kossiakoff Center parking on the lower lot. From the parking lot, climb the stairs and cross the street. The Kossiakoff Center is just across the street. Enter through the glass front doors.