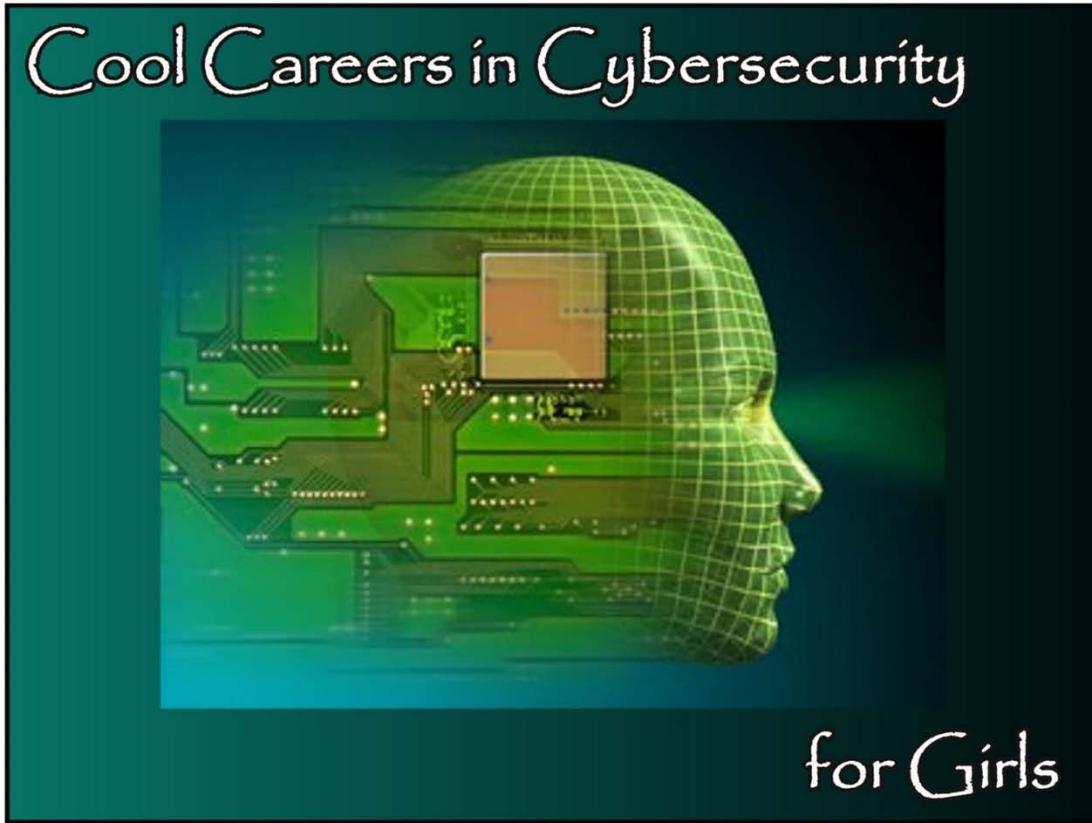


MARYLAND OF OPPORTUNITY.®

Department of Business & Economic Development

Info Security Crime Investigator • Malware Analyst • Incident Responder • Forensic Analyst

Security Architect • Penetration Tester • Network Security Engineer



Vulnerability Researcher • Exploit Developer • Security Auditor

Computer Crime Investigator • Security Operations Center Analyst • Intrusion Analyst



## Cool Careers in Cybersecurity for Girls Workshop

May 29, 2014

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

Careers Program Building at

Hagerstown Community College - Hagerstown, MD



Educational Technology Policy, Research and Outreach, the K12 lead of the National CyberWatch Center, is excited to partner with Hagerstown Community College and Maryland Department of Business and Economic Development to offer an outstanding opportunity to explore the field of cybersecurity. The Cool Careers in Cyber Security for Girls Workshop would not be possible without women professionals volunteering their time. We 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.

- DISA (Defense Information Systems Agency)
- General Dynamics (GDIT)
- George Washington University
- Hagerstown Community College
- Montgomery College
- National Security Agency (NSA)
- Northrop Grumman Corporation
- Norwich University
- University of Maryland University College (UMUC)

*Please take the time to thank our wonderful professionals—please brief the girls to do the same*

Thank you once again for your time and commitment to this event.

## Teacher Guide

Educational Technology Policy, Research and Outreach, the K12 lead of the National CyberWatch Center, in partnership with Hagerstown Community College and Maryland Department of Business and Economic Development, thanks you for volunteering to present at the Western Maryland Cool Careers in Cybersecurity for Girls Workshop. 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 students have asked Women STEM Professionals about Cyber Security in the past
  - Directions and parking information
-

## 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 guidance from cybersecurity and STEM professionals in order to gather clues to help solve the crime. This year's cybercrime scenario focuses on industrial espionage.

The FBI estimates that every year billions of U.S. dollars are lost to foreign and domestic competitors who deliberately target economic intelligence in flourishing U.S. industries and technologies. In the case of our scenario, the Cool Careers Cyber Crime: *Perfection Hair Styler Vs Flirty Hair Tools*, Steve Davey pled guilty to federal charges that he stole and disclosed trade secrets concerning a new hair straightener and styling tool developed by *Perfection Hair Styler*. Davis was employed by *Left Industries*, a subcontractor of *Perfection Hair Styler* that had been hired to assist in the development of the new hair styling system.

### Related Content

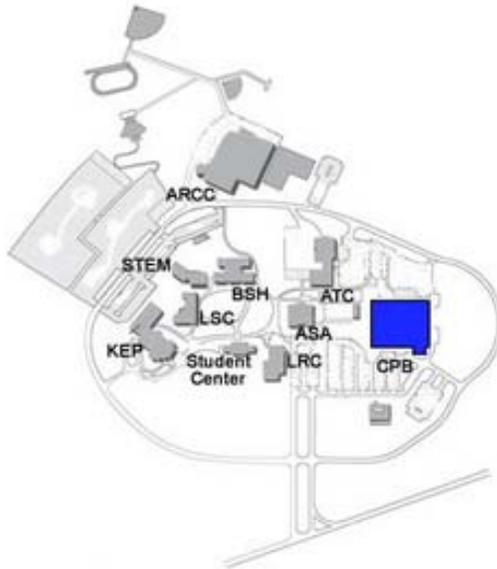
Davey had made disclosures of technical drawings to new hair straighter and styler tool overseas competitors *Flirty Hair Tools, Inc.*, *HAI Elite!* and *ION, LLC*. The disclosures were passed along electronically, sometimes as files hidden within pictures. Davey was arrested and indicted on counts of wire fraud and theft of trade secrets. Davey was sentenced to two years and three months in federal prison.

The all girls' middle school Cyber Super-Investigators (CSI) has been hired to investigate in greater detail how the trade secrets were stolen and make recommendations to *Perfection Hair Styler* to ensure this does not happen again. The girls will collect and explore a variety of digital and physical evidence to learn more about stolen trade secret instance. Clues provided by the lead investigators, the cyber professionals speaking at the Cool Careers in Cybersecurity for Girls Workshop, will help the middle school girls solve the crime!

# AGENDA

9:30 am	Arrival Meet the Cyber Career Speakers
10:00-10:15 am	Welcome and Introductions Dr. Davina Pruitt-Mentle Theresa Shank Anthony Hanners
10:15-10:25 am	Setting the stage for scenario and activities/Video
10:25 - 10:45 am	Activity 1/ Rotation 1
10:50 - 11:10 am	Activity 2/ Rotation 2
11:15 - 11:35 am	Activity 3/ Rotation 3
11:40 am - Noon	Activity 4/ Rotation 4
Noon - 12:20 pm	Organize at Lunch Tables
12:20-12:50 pm	Activity 5 Lunch Keynote Speaker/Panel
12:50-1:15 pm	Activity 6 Solve the Cyber Crime, Thank You's and Evaluations

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



All events  
take place  
here

Building: Career Programs Building  
Room: cpb210



Restrooms are located here

## Agenda with Notes

<p>Arrival – 9:30 a.m.</p>	<p>Meet CyberCareer Speakers</p>	<p>Buses are scheduled to arrive between 9:30 and 9:45 a.m. <b>It would be great if speakers could make themselves available to talk to students who arrive before 9:45.</b> Quotes about why our speakers say their careers are cool will be shown throughout the room. Speakers can walk around the room or stay close to their assigned table. We will encourage students to take advantage of this time to introduce themselves to the speakers and ask a few questions.</p> <p>We will have coffee and refreshments for presenters in the AM</p> <p>The restrooms are indicated in the above map.</p> <p><b>Speakers can help usher students toward the appropriate tables.</b> Students must be in their seats by 9:55 so that we can begin on time. Students are asked to stay at their assigned tables and rotate as a group as detailed in the schedule.</p>
<p>10:00 - 10:15 a.m.</p>	<p>Welcome and Introductions</p>	<p>Students will be welcomed and the organizations which have supported us with speakers will be introduced.</p> <p>Welcome and Introductions: Dr. Davina Pruitt-Mentle, ETPRO/National CyberWatch Center K-12 Division Theresa Shank, Dean, Continuing Education and Community Services Anthony Hanners, Cybersecurity Recruiter, Hagerstown Community College</p>
<p>10:15 - 10:25 a.m.</p>	<p>Setting the stage for scenario and activities/video</p>	<p>Logistics will be covered about how the day will proceed. An introductory video will be shown to set the stage for the cybercrime students will be asked to solve.</p>

10:25 - 10:45.	Activity 1	Students will be pre-assigned starting tables and will rotate as a group as detailed in the schedule.
10:50 - 11:10	Activity 2	<p><b>We have allowed 5 minutes between rotations; however, you are welcome to begin as soon as all ladies are seated and ready to begin.</b></p> <p><b>During the Activity 4 please thank students for being so polite and cooperative up to this point and remind them that there is still more to come.</b></p>
11:15 - 11:35	Activity 3	
11:40- 12:00	Activity 4	
12:00- 12:20	Organize at Lunch Tables	<p>Groups will stay at the Activity 4 table for the luncheon speaker and lunch. Teachers and volunteers will be bringing the box lunches to the tables. Along with parents, chaperones and teachers we ask speakers to remind students to “unwrap” their lunches as soon as possible so that noise is limited during the keynote speakers presentation.</p> <p>The lunchtime speaker is going to begin promptly at 12:20 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. No one will be allowed to enter or leave the room during the keynote speaker session.</p>
12:20- 12:50	Activity 5	Dr. Davina Pruitt-Mentle: Introduction Lunch Keynote Speaker/Panel
12:50- 1:15	Activity 6	Dr. Davina Pruitt-Mentle, Closure Solve the Cyber Crime, Thank You's and Evaluations
1:15	Depart	Load Buses

**This table lists the Table each presenter is assigned and the groups that each will interact with for each rotation.**

<b>Table</b>	<b>Presenter, Organization, Topic, Activity</b>	<b>START &amp; Rotation 1</b>	<b>Rotation 2</b>	<b>Rotation 3</b>	<b>Rotation4</b>
1	Carrie, General Dynamics Crypto, Breaking message Steg, which picture has the file	Springfield 1	Springfield 4	Springfield 3	Springfield 2
2	Katya, Norwich University Dig For, Find the USB drives	Springfield 2	Springfield 1	Springfield 4	Springfield 3
3	Katharine, DISA Stephen, Hagerstown CC Physical Security, Lock Picking	Springfield 3	Springfield 2	Springfield 1	Springfield 4
4	Jeanann, Montgomery College CompSc 1, Find the missing part Comp Sc 2, Makey Makey	Springfield 4	Springfield 3	Springfield 2	Springfield 1
5	Emma, UMUC CompSc 1, Find the missing part Comp Sc 2, Makey Makey	Springfield 5	Northern 3	Northern 2	Northern 1
6	Renee, NGC Crypto, Breaking message Steg, which picture has the file	Northern 1	Springfield 5	Northern 3	Northern 2
7	Silvia, Montgomery College Dig For, Find the USB drives	Northern 2	Northern 1	Springfield 5	Northern 3
8	Julie, GWU Physical Security, Lock Picking	Northern 3	Northern 2	Northern 1	Springfield 5

**This table lists the starting position and rotations for each of the schools**

WHO	Abbreviation/Group # Number of students/chaperones	START & Activity 1	Activity 2	Activity3	Activity 4 & Stay for lunch
		TABLE	TABLE	TABLE	TABLE
Springfield 1	Springfield 1 9 students/ 1 chap	1	2	3	4
Springfield 2	Springfield 1 9 students	2	3	4	1
Springfield 3	Springfield 1 9 students/ 1 chap	3	4	1	2
Springfield 4	Springfield 1 9 students	4	1	2	3
Springfield 5	Springfield 1 9 students	5	6	7	8
Northern 1	Northern 1 8 students/ 1 chap	6	7	8	5
Northern 2	Northern 2 9 students	7	8	5	6
Northern 3	Northern 3 8 students/ 1 chap	8	5	6	7

SCHOOL	District	School Teacher Chaperones
Springfield Middle	Washington	Jennifer Joyce Liz Rohrer
Northern Middle	Washington	Shelly Telemeco Heather Williams

**Activities and Clues: Just in case you are curious about possible clues to the crime**

Topic	Clue	Activity
Physical Security	Physical security is important! Copies of the trade secrets are kept under lock and key. But how safe is the lock? What recommendations does the team have for physical security access?	Lock Picking
Cryptography	The trade secrets were embedded within digital photos, but which ones and using what settings? An encrypted message was used to send instructions. Can you break the code? What recommendations does the team have for more secure codes?	Frequency Chart and Cipher
Steganography	Several pictures are presented. Which picture contains the stolen trade secret files? How can you tell? Could you have detected the hidden message without the cryptographic instructions? How could you protect against this type of threat?	Which picture has the files?
Digital Forensics 1	What are potential ways for thieves to steal or copy important information? Today many companies do not allow electronic or storage devices to be taken into work. Several organizations/companies actually inspect coats, bags, and briefcases to make sure the policy is followed. Hidden USB drives can be planted in women's jewelry bag and/or brief cases. Can you find all the hidden storage devices? What recommendations would you suggest to protect against the threat of removable media such as thumb drives?	Find the USB drives
Computer Science 1	Evidence was found on the thief's work computers. However, they have been disassembled. Further investigation reveals parts are missing. What parts were missing? A key part of being a cyber investigator is not only seeing what is there, but also noticing what is missing.	Find the missing parts
Computer Science 2	Evidence was found on the thief's home computer. However, the keyboard is missing. Is there another way to use the computer without a keyboard?	Makey Makey

## **Questions Students have asked about CyberSecurity and Women STEM Professionals in the past**

Students 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 cybersecurity to other careers**

- What other areas help support cybersecurity? Who needs cybersecurity?
- How does cybersecurity protect 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 Career Programs Building (CPB) at Hagerstown Community College  
<http://www.hagerstowncc.edu/about-hcc/our-locations/hcc-main-campus/map>

11400 Robinwood Drive, Hagerstown, Maryland 21742-6514

### **Career Programs Building**

The newly renovated Career Programs Building was dedicated in 2009. It is now home to **The Merle S. Elliott Continuing Education and Conference Center**, with five conference rooms and an expanded Valley Eatery, a tiered lecture hall that seats 66 students, science labs, a comfortable atrium, an outdoor fountain, and outdoor seating area at the Valley Eatery. It is also home to state-of-the-art facilities for nursing, radiography and other health sciences programs, as well as the industrial technology program and HCC's Reprographic Services, IT department, and campus mail room.

The event will be take place in rooms 210-212-214 (will be opened up to make one large room). Please direct the bus driver to drop the students off at the Lot C entrance (water fountain) and then park in Parking lot F. Please place the parking permit in dashboard of your vehicle.

My cell phone number is 301 503 8070.