CyberWatch Overview

Sponsored by the National Science Foundation

CyberWatch Mission and Goals

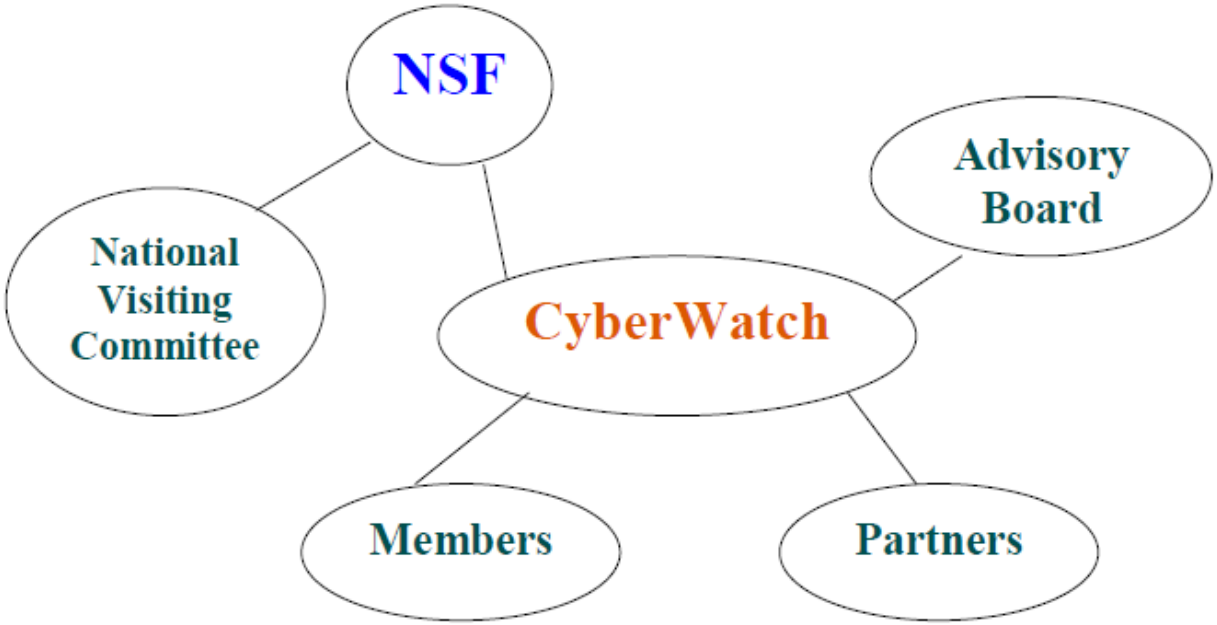
CyberWatch is an Advanced Technological Education Center funded by the National Science Foundation and located at Prince George's Community College

Mission: To improve the quality and quantity of the information assurance (IA) workforce

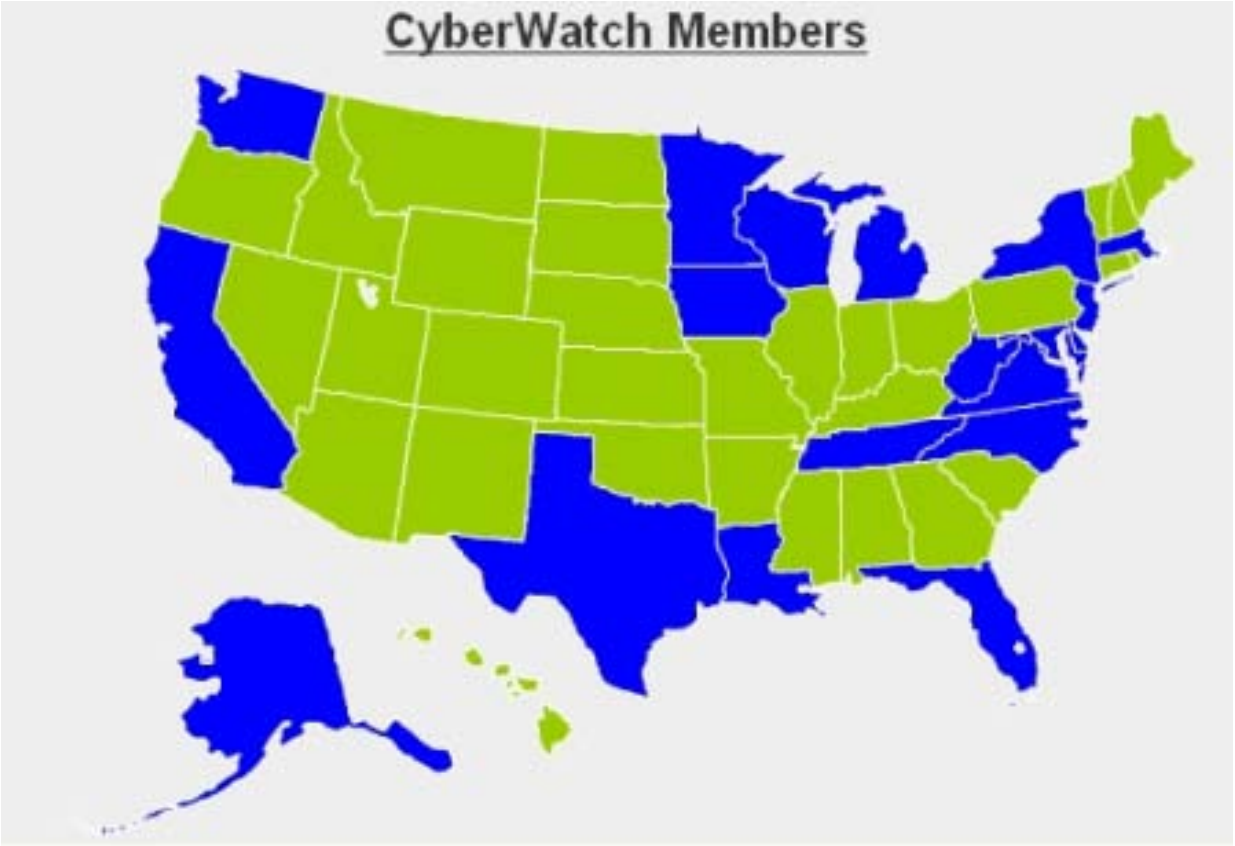
Goals:

- Curriculum Development (College Level)
- Faculty Development
- Student Development
- K-12 Pipeline
- Dissemination and Outreach

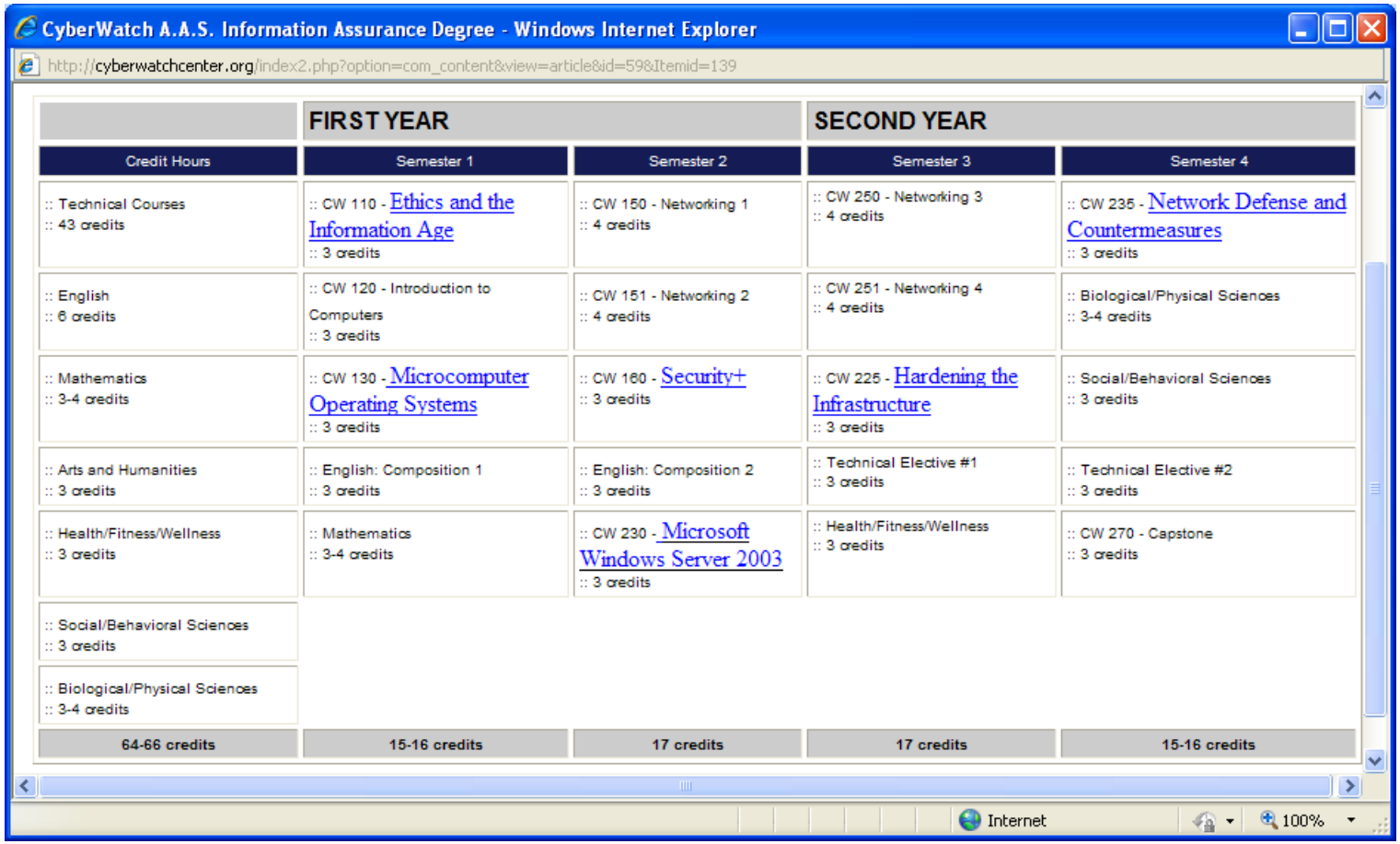
Organizational Structure



58 Members in 21States + DC



Curriculum Development: IA Model AAS Degree



	FIRST YEAR		SECOND YEAR	
Credit Hours	Semester 1	Semester 2	Semester 3	Semester 4
:: Technical Courses :: 43 credits	:: CW 110 - Ethics and the Information Age :: 3 credits	:: CW 150 - Networking 1 :: 4 credits	:: CW 250 - Networking 3 :: 4 credits	:: CW 235 - Network Defense and Countermeasures :: 3 credits
:: English :: 6 credits	:: CW 120 - Introduction to Computers :: 3 credits	:: CW 151 - Networking 2 :: 4 credits	:: CW 251 - Networking 4 :: 4 credits	:: Biological/Physical Sciences :: 3-4 credits
:: Mathematics :: 3-4 credits	:: CW 130 - Microcomputer Operating Systems :: 3 credits	:: CW 160 - Security+ :: 3 credits	:: CW 225 - Hardening the Infrastructure :: 3 credits	:: Social/Behavioral Sciences :: 3 credits
:: Arts and Humanities :: 3 credits	:: English: Composition 1 :: 3 credits	:: English: Composition 2 :: 3 credits	:: Technical Elective #1 :: 3 credits	:: Technical Elective #2 :: 3 credits
:: Health/Fitness/Wellness :: 3 credits	:: Mathematics :: 3-4 credits	:: CW 230 - Microsoft Windows Server 2003 :: 3 credits	:: Health/Fitness/Wellness :: 3 credits	:: CW 270 - Capstone :: 3 credits
:: Social/Behavioral Sciences :: 3 credits				
:: Biological/Physical Sciences :: 3-4 credits				
64-66 credits	15-16 credits	17 credits	17 credits	15-16 credits

Curriculum Development (cont.)

- Model Degree and Certificate Programs
- Model courses and course modules
- Articulations
- Mapping to CNSS standards
- Support for the new CAE2Y Program
- Online courses; QM rubric
- Virtual Lab 2.0

Virtual Labs

- Virtual Lab – Montgomery College
- Digital Forensics Lab – University of Maryland
- CyberWatch Underground – Bowie State University

Digital Media Forensics Lab

Faculty Development

- Workshops/Institutes /Conferences, e.g.:
  - Certified Ethical Hacking
  - Secure Programming
  - CISSP Training
- Second Life Island for faculty training
- Faculty Graduate Program

CyberWatch Second Life Island

Student Development

- Internships, Scholarships, Career Placements

- Student Competitions:
  - Mid-Atlantic Regional Collegiate Cyber Defense Competition (CCDC)
  - Digital Forensics Challenge
  - Security Awareness Poster/Video Contest
  - New competition for CCs
  - US CyberChallenge

HOME
EVENT
ABOUT
SPONSORS
STUDENTS
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6TH CYBERWATCH MID-ATLANTIC COLLEGIATE CYBER DEFENSE COMPETITION
COLLEGIATE CYBER DEFENSE COMPETITION
CYBERWATCH MID-ATLANTIC REGIONAL CCDC
March 10 - 12 - 2011
Smart Grid Technologies
CyberWatch
Recent News
Sep.7
Cyber Competition Pits Hackers Against Computer Networks at Hopkins APL/CyberWatch Competition
Jun.23
Wanted: Young Cyberexperts to Defend Internet
Jun.3
CCDC and the Tale of the Insider Threat
TEAM REGISTRATION
The CyberWatch Mid-Atlantic CCDC is open to all two- and four-year undergraduate and graduate students in Delaware, Maryland, North Carolina, Pennsylvania, Virginia, and Washington, D.C. Team registrations start October 10, 2010 and are due by December 10, 2010 (by 5 PM EST).
AGENDA
The Mid-Atlantic CCDC runs for three full days. Check out the activities here.
Past Organizers, Sponsors and Contributors

CCDC

Digital Forensics Challenge

Security Awareness Contest

Security Awareness Contest

Towards the National Cybersecurity Center

- CAE2Y program support, mentoring
- CyberWatch membership expansion
- CSSIA transition
- NIST-NICE role
- New ATE Centers and Projects: CyberWatch West, SECURE IT, CCX, new project proposals in New York, Louisiana, & Texas

http://cyberwatchcenter.org

CyberWatch K-12 Division

Davina Pruitt-Mentle, PhD

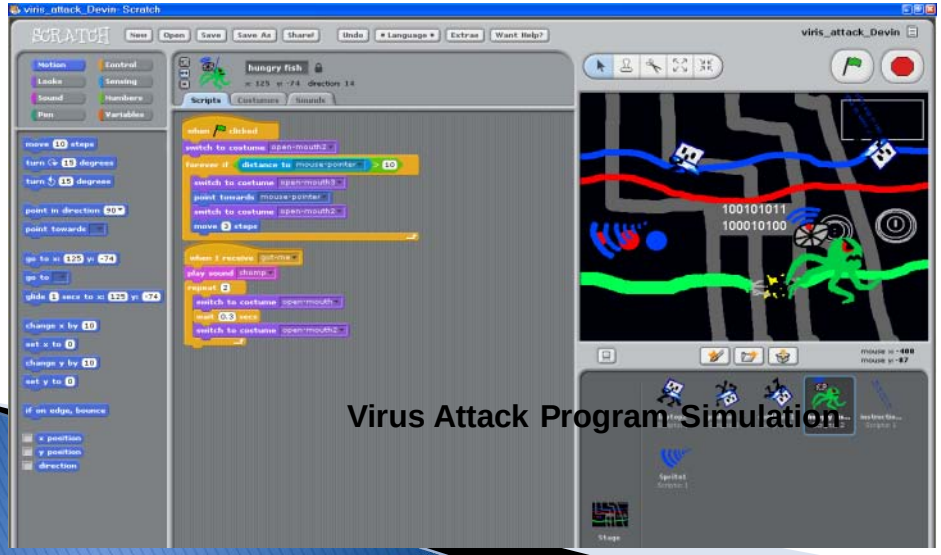
Sponsored by the National Science Foundation

K-12 Programs

- K-12 Division Goals include increasing:
  - The IA workforce pipeline
  - Community awareness of IA workforce
  - Community awareness of C3-Cyberethics, Safety and Security, and
  - Security of K-12 IT systems

K-12 Program

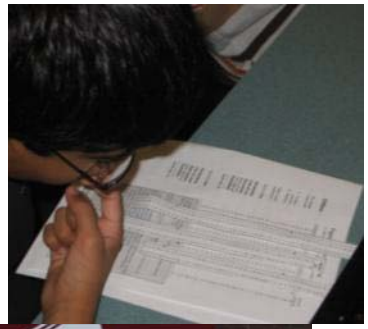
- Informal after school programs
  - Mindtools (4-5)
  - JR. CyberwarriorProgram (6-8)
- Summer Cyberwarrior high school programs



Virus Attack Program Simulation

Formal Lesson Plans
High School Clubs
4H
Girl Scouts

CW K12 Modules



5 Content Modules

- *Computational Logic/Programming—Scripting*
- *Cryptography*
- *Digital Ethics, Safety and Security*
- *System Vulnerabilities*
- *Digital Forensics*

- Grade bands 4-5, 6-8 and 9-12
- Tied to national and state standards and partnering school system math, science & technology curriculum, students engage in hands-on STEM activities and improve digital literacy skills while learning and applying concepts through gaming, modeling and simulation development.
- Speakers and field trips
- The central focus is the field of IA, but supported by the too often neglected topics of citizen awareness of Cyberethics, safety and security.

K-12 Program

Annual *Careers in IA/IS Guidance Counselors Workshop*

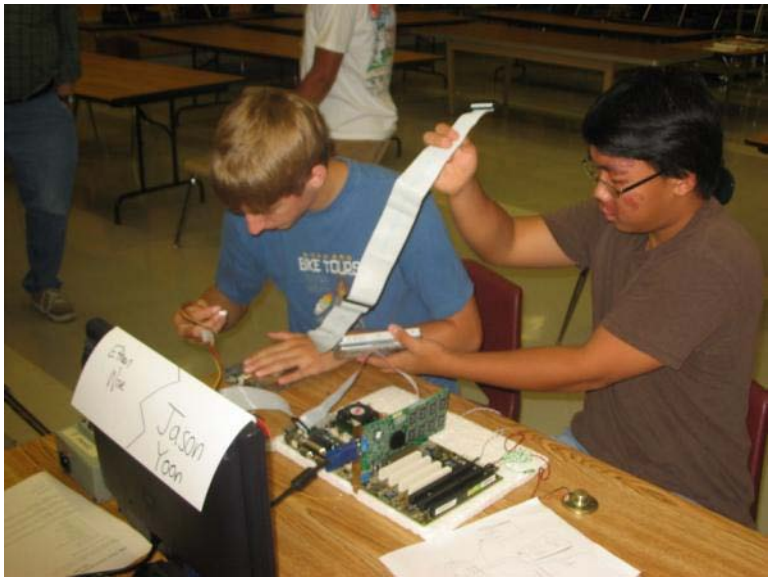
Cool Careers in Cybersecurity for Girls

Annual C3 Conference

PD Opportunities and Speaking Topics

K-12 Pipeline

- Cyberethics, Cybersafety and Cybersecurity (C3) Conference
- Cool Careers in Cybersecurity for Girls Conference
- Careers in IS/IA and Digital Forensics for Guidance Counselors Workshop
- After School Elementary and Middle School
- High School Summer Programs
- CW K12 Content
- Clubs



Educational Technology Policy Research and Outreach
Linking Research to Practice

What's Missing

High School → 2 Year → 4 Year

High School
Information Assurance Track

- CW 110 Computer Ethics (can also make use of Simulation Case studies via NSF grant)

- CW 130 Understanding Operating Systems
- **CW 160 Computer Security, Security+**
- CW 150/151 Networking—w/ some existing track course (Cisco 1 & 2)

- Other ideas
- CW 230 Windows
- **CW 235 Network Defense and Countermeasures**

Foundation needed for:

CompTIA's Security + Cisco CCNA Preparation certificate

Apply credits IA A.A.S. degree CISSP Prep Exam

WIRESHARK Certified network Analyst

CCENT Cert

SECURE IT:

Strategies to Encourage Careers in Cybersecurity and IT

Elementary MINDTOOLS	Formal: Individual Classroom Activities Formal: Extension Units Informal: After School Program	*JR. FIRST Lego League* *FIRST Lego League (FLL)* *eCYBERMISSION*
Middle JR CYBERWARRIORS	Formal: Individual Classroom Activities Formal: Extension Units Informal: After School Program	*FIRST Lego League (FLL)* *eCYBERMISSION* *Am Comp Sc League*
High CYBERWARRIOR	Informal: After School Cyber Clubs & Summer Program CTE : IA Track	*FIRST Tech Challenge* *FIRST Robotics* *Am Comp Sc League* *Image Cup* *High School CCC* *Patriots* *US CyberChallenge* *Forensics Cup* *DHS PSA* *NACLO* *ILO* *STS* *ISEF*

2 Year Program

4 Year Program +

Other Activities	*Parent Awareness* *Community Awareness* *Teacher Training* *K12 C3 Awareness Contest* *Cybersecurity Olympiad* *C3 Awareness grants*
Cool Careers in CyberSecurity for Girls Event	
C3: CyberEthics, Safety & Security Conference	
Careers in IS/IA and Digital Forensics for Guidance Counselors Workshop	

LOGIN SEARCH

CyberWatch K12

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Expanding Knowledge in Cyber awareness and Careers in Cybersecurity

OUR PROGRAMS

Summer High School CyberWarrior Courses in Full Swing

WHAT'S NEW

- **9th Annual C3** : Cyberethics, Cybersafety and Cybersecurity Conference. October 7-8th , 2010
- **CW launches Phase II of SECURE IT Program**
- **Cybersecurity workshop for Girls Summit - National Electronics Museum**
- **Careers in IA/IS Digital Investigation for Guidance Counselors** - September 30th

1 2 3

PROGRAMS

We have a wide range of programs, content and activities for formal and informal settings. The central focus is IA content, but it is supported by the too often neglected topics of citizen awareness of ethics, safety and

WORKFORCE AWARENESS

C3 conference Annual GC Workshop Professional Development Speaker Sessions/Topics More

C3 AWARENESS

C3 conference Professional Development Speaker Sessions/Topics More

K12 IT SYSTEMS

Workshops are conducted at partner institutions on a variety of topics determined by our annual needs assessment survey. More

New Efforts in 2011

- HS Networking Security Competition
- Mid-Atlantic CCDC High School Activities: March 10-12, 2011
  - High school shadowing and activities for HS students
- MD US Cyber Challenge:
  MD July 11-15 and July 18-22
  - MD HS students AND teachers
  - 4 full days of instruction followed by capture the flag exercise
- 2011 Summer Cybersecurity Pathways PD
  - For teachers teaching CTE track
  - VMware & CCNA
- C3 Schools Initiative (Cyber Schools)
- CyberMaryland
- C3 Student/Educator Newsletter
- Journal of Cyberethics, Safety and Security Education

Thank You!

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