CyberWatch Overview

Sponsored by the National Science Foundation
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
58 Members in 21 States + DC
# Curriculum Development: IA Model AAS Degree

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>Semester 1</th>
<th>Semester 2</th>
<th>Semester 3</th>
<th>Semester 4</th>
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<tbody>
<tr>
<td><strong>FIRST YEAR</strong></td>
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<tr>
<td><strong>Technical Courses</strong></td>
<td>49 credits</td>
<td><strong>CW 110 - Ethics and the Information Age</strong></td>
<td>3 credits</td>
<td><strong>CW 260 - Networking 3</strong></td>
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<tr>
<td><strong>English</strong></td>
<td>6 credits</td>
<td><strong>CW 120 - Introduction to Computers</strong></td>
<td>3 credits</td>
<td><strong>CW 151 - Networking 2</strong></td>
</tr>
<tr>
<td><strong>Mathematics</strong></td>
<td>3-4 credits</td>
<td><strong>CW 130 - Microcomputer Operating Systems</strong></td>
<td>3 credits</td>
<td><strong>CW 160 - Security</strong></td>
</tr>
<tr>
<td><strong>Arts and Humanities</strong></td>
<td>3 credits</td>
<td><strong>English: Composition 1</strong></td>
<td>3 credits</td>
<td><strong>English: Composition 2</strong></td>
</tr>
<tr>
<td><strong>Health/Fitness/Wellness</strong></td>
<td>3 credits</td>
<td><strong>Mathematics</strong></td>
<td>3 credits</td>
<td><strong>CW 230 - Microsoft Windows Server 2003</strong></td>
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<tr>
<td><strong>Social/Behavioral Sciences</strong></td>
<td>3 credits</td>
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<tr>
<td><strong>Biological/Physical Sciences</strong></td>
<td>3 credits</td>
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<th></th>
<th>64-66 credits</th>
<th>16-16 credits</th>
<th>17 credits</th>
<th>17 credits</th>
<th>15-16 credits</th>
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</thead>
</table>

- **Total Credits:** 124
- **Semester 1:** 64-66 credits
- **Semester 2:** 16-16 credits
- **Semester 3:** 17 credits
- **Semester 4:** 17 credits

*Internet:*
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
Listed below are case studies. Each comes with its own explanation, a link to the image file, and an MD5 sum associated with it. The image files have been analyzed and are presented with the supporting information. Some are presented as interesting images which have not yet been explained.

**AGRIPPA**

For background on Agrippa, please see this link. (From that page:) “Agrippa (a book of the dead) appeared in 1992 as a collaboration between Dennis Ashbaugh, author William Gibson, and publisher Kevin Begos, Jr.” It was both literary and performance art, designed to be run on a computer, after which it would encrypt itself never to run again.

This past summer, Matt Kirschenbaum at the Maryland Institute for Technology in the Humanities (MITH) approached the DFL for help in examining an obsolete floppy disk format (Apple’s 800k floppy). With the help of some very old laptops and Linux, we were able to image the floppy and examine the image that this copy had been run and was therefore encrypted. There are still some interesting tidbits in the image disk track.

**Agrippa image file**

```
MD5 = ab678db83124b2dc2d756ab2f51b1a6f6
```
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
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
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
Digital Forensics Challenge

Updates to 2010 Challenge Rules v1.4
8-31-2010

With the increasing number of individual challenge submissions by teams, we have updated the rules for the 2010 Challenge. This now allows teams to upload either individual challenge submissions over time or to continue submitting all of their challenges as one submission packet like previous years. After September 15th, any uploads will be considered final and no revisions allowed.

More Info ->

U.S. Cyber Challenge Multimedia
- 2010 DoD Cyber Crime Conference Opening Video (DC3.mjl)
- Network Thieves: hackers compete (CNN.com)
- Armed with Science - Farsode #47: DC3 Digital Investigator Challenge
  (PentagonChannel.mjl)
- Governments Battle to Stay Ahead of Threats on Internet: The Great Levee
  (PBS)

Important Dates
- 2009-12-15: Registration Opens
- 2010-11-01: Registration Closes
- 2010-11-02: Solutions Due
- 2010-12-01: Winners Announced

The DC3 Digital Forensics Challenge is a proud sponsor of the U.S. Cyber Challenge, Cyber Security Challenge UK, and Challenge.gov
Security Awareness Contest

Information Security Awareness Poster & Video Contest 2011

Deadline for submission: March 11, 2011.

Please help us promote this contest to your institution's faculty and students. Select the "Help Us Promote" tab below for web banner ads, flyers, how-to documents, and other materials.

Questions or comments? Contact us.

Win cash, gain experience, and earn recognition with a poster or one short video!

The EDUCAUSE & Internet2 Higher Education Information Security Council (HEISC) is conducting its fourth contest in search of posters and short information security awareness videos developed by college students, for college students. The contest is sponsored by CyberWatch, the National Cyber Security Alliance (NCSA), and Chapman University. Winners will receive cash prizes. The posters and videos will be featured on the EDUCAUSE website and may be used in campus security awareness campaigns. Winners will be notified in late April 2011.

Contest sponsored by:

Entry Requirements

Posters and videos must explain information security problems and specific actions college and university students can take to safeguard their computers, mobile devices, or personal information. Two categories of videos are being sought: videos of two minutes or less for use in training or instruction, and 30-second public service announcements (PSAs). Posters should be submitted separately.

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Security Awareness Contest

Are you safe?

They're watching!
Protect yourself from online predators

By D'Andre Burroughs
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. Cyberwarrior Program (6–8)
- Summer Cyberwarrior high school programs

Formal Lesson Plans
High School Clubs
4H
Girl Scouts
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

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
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

<table>
<thead>
<tr>
<th>Elementary MINDTOOLS</th>
<th>Formal: Individual Classroom Activities</th>
<th>J.R. FIRST Lego League</th>
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<td>Formal: Extension Units</td>
<td>FIRST Lego League (FLL)</td>
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<td>Informal: After School Program</td>
<td>eCYBERMISSION</td>
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<td>Middle JR CYBERWARRIORS</td>
<td>Formal: Individual Classroom Activities</td>
<td>FIRST Lego League (FLL)</td>
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<tr>
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<td>Formal: Extension Units</td>
<td>eCYBERMISSION</td>
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<td>Informal: After School Program</td>
<td>Am Comp Sc League</td>
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<tr>
<td>High CYBERWARRIOR</td>
<td>Informal: After School Cyber Clubs &amp; Summer Program</td>
<td>FIRST Tech Challenge</td>
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<td>CTE: IA Track</td>
<td>FIRST Robotics</td>
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<td>Am Comp Sc League</td>
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<td>Image Cup</td>
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<td>High School CCC</td>
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<td>Patriots</td>
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<td>US CyberChallenge</td>
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**Other Activities**
- Cool Careers in CyberSecurity for Girls Event
- C3: CyberEthics, Safety & Security Conference
- Careers in IS/IA and Digital Forensics for Guidance Counselors Workshop

**Parent Awareness**
- Community Awareness
- Teacher Training
- K12 C3 Awareness Contest
- Cybersecurity Olympiad
- C3 Awareness grants
Summer High School CyberWarrior Courses in Full Swing

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 cybersecurity. The various workshops and conferences aim to make ethical decision-making more accessible and easier to navigate for all ages.

WORKFORCE AWARENESS
C3 conference
Annual GC Workshop
Professional Development Speaker Sessions/Topics

C3 AWARENESS
C3 conference Professional Development Speaker Sessions/Topics

K12 IT SYSTEMS
Workshops are conducted at partner institutions on a variety of topics determined by our annual needs assessment survey.
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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