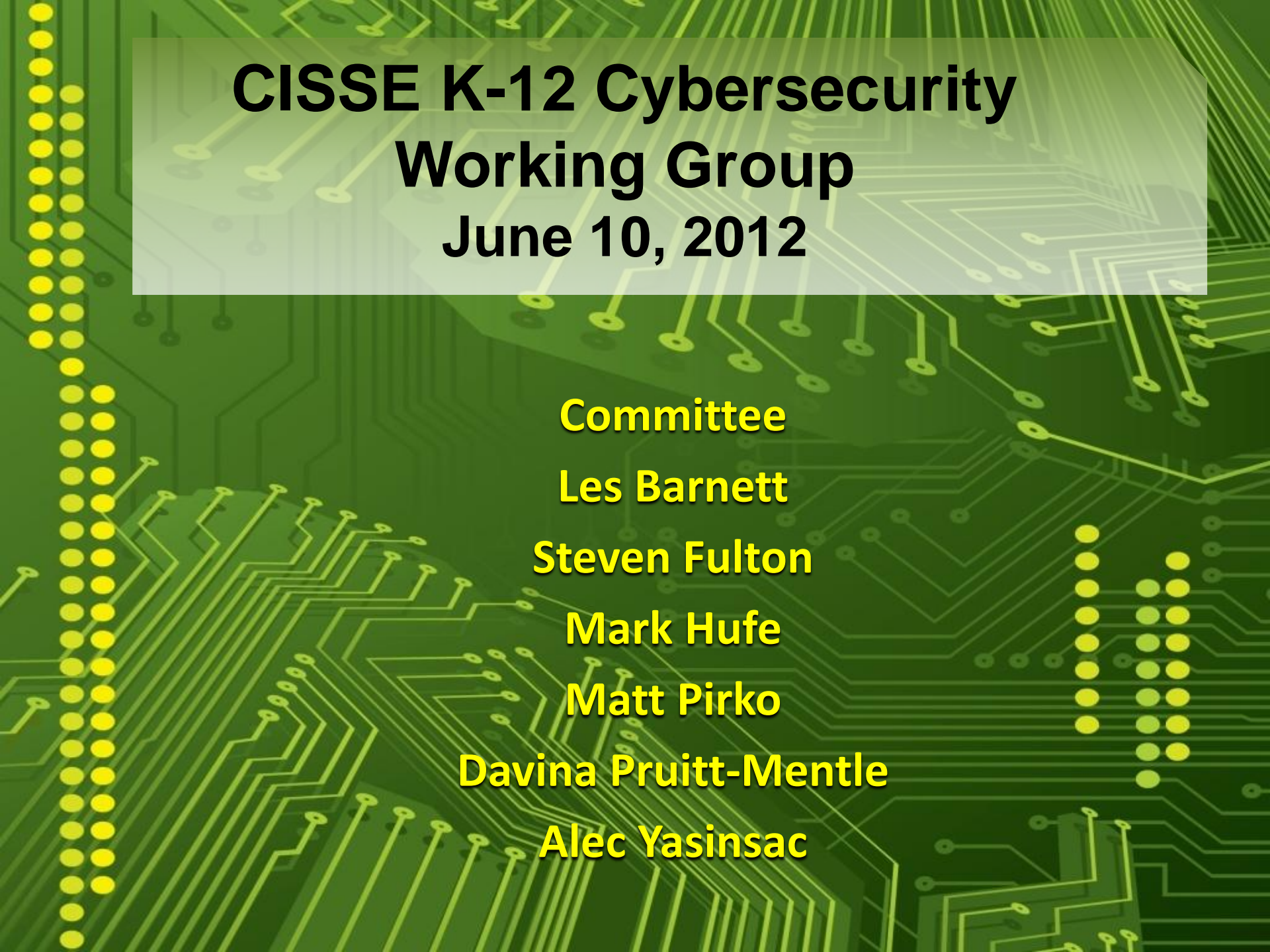


# CISSE K12 Cybersecurity Education Summit





# **CISSE K-12 Cybersecurity Working Group June 10, 2012**

**Committee**

**Les Barnett**

**Steven Fulton**

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**Alec Yasinsac**

# Update Briefs

- **Earlier Final Reports**
- **Standards Overview**
- **Role of CTE Tracks**
- **Role of Competitions**
- **NICE Strategic Plan**
- **SFS Efforts**



# CAE Data

	State and Institution Name	dept	dept link	college	program	program 1 content	program 2	program 2 content	security connection	Criterion 1: Outreach/Collaboration related to K12
1	Alabama	Computer Science	<a href="http://www.eng.auburn.edu">http://www.eng.auburn.edu</a>	college of eng	COMPUTER SCIENCE	<a href="http://www.eng.auburn.edu">http://www.eng.auburn.edu</a>	Software Engineering	<a href="http://www.eng.auburn.edu">http://www.eng.auburn.edu</a>	<a href="http://ia.auburn.edu">http://ia.auburn.edu</a>	none noted
2	Auburn University	Department of Computer Science	<a href="http://eng.auburn.edu">http://eng.auburn.edu</a>	College of Engineering						
3	Jacksonville State University	Mathematical, Computer Science	<a href="http://www.jsu.edu/mcs">http://www.jsu.edu/mcs</a>	College of Arts and Sciences	B.S. - COMPUTER SCIENCE	<a href="http://www.jsu.edu/mcs">http://www.jsu.edu/mcs</a>	B.S. - COMPUTER SCIENCE	<a href="http://www.jsu.edu/mcs">http://www.jsu.edu/mcs</a>	<a href="http://mcs.jsu.edu/cis">http://mcs.jsu.edu/cis</a>	
4	University of Alabama Huntsville	Graduate	<a href="http://www.uah.edu/gra">http://www.uah.edu/gra</a>	Business Administration	M.S. in Information Systems	<a href="http://www.uah.edu/in">http://www.uah.edu/in</a>	Ph.D. in Computer Engineering	<a href="http://www.ece.uah.edu">http://www.ece.uah.edu</a>		
5	University of South Alabama	Information Technology	<a href="http://www.cis.usouthal.edu">http://www.cis.usouthal.edu</a>	School of Computer Science	BACHELOR OF SCIENCE IN INFORMATION SYSTEMS	<a href="http://www.cis.usouthal.edu">http://www.cis.usouthal.edu</a>	MINOR IN INFORMATION SYSTEMS	<a href="http://www.cis.usouthal.edu">http://www.cis.usouthal.edu</a>		
6	Alaska									
7	University of Alaska Fairbanks	Computer Science	<a href="http://www.cs.uaf.edu/">http://www.cs.uaf.edu/</a>	College of Engineering	B.S. Degree	<a href="http://www.uaf.edu/ca">http://www.uaf.edu/ca</a>	B.S./M.S. Degree	<a href="http://www.uaf.edu/ca">http://www.uaf.edu/ca</a>		
8	Arizona									
9	Arizona State University	School of Computer Science	<a href="http://engineering.asu.edu">http://engineering.asu.edu</a>	School of Engineering	Bachelor of Science in Computer Science	<a href="http://cidse.engineering.asu.edu">http://cidse.engineering.asu.edu</a>	Bachelor of Science in Computer Science	<a href="http://cidse.engineering.asu.edu">http://cidse.engineering.asu.edu</a>		
10	University of Advancing Technology	Network Security		School of Science	BACHELOR OF SCIENCE IN NETWORK SECURITY	<a href="http://majors.uat.edu/">http://majors.uat.edu/</a>	ADVANCING COMPUTING	<a href="http://majors.uat.edu/">http://majors.uat.edu/</a>		
11	University of Arizona, Tucson	Information Assurance	<a href="http://iasec.eller.arizona.edu">http://iasec.eller.arizona.edu</a>	College of Management	Management Information Systems	<a href="http://mis.eller.arizona.edu">http://mis.eller.arizona.edu</a>	Operations Management	<a href="http://mis.eller.arizona.edu">http://mis.eller.arizona.edu</a>	<a href="http://iasec.eller.arizona.edu">http://iasec.eller.arizona.edu</a>	
12	Arkansas									
13	University of Arkansas at Little Rock	Department of Computer Science	<a href="http://ualr.edu/computer">http://ualr.edu/computer</a>	College of Engineering	Bachelor of Science in Computer Science	<a href="http://ualr.edu/computer">http://ualr.edu/computer</a>	Master of Science in Computer Science	<a href="http://ualr.edu/computer">http://ualr.edu/computer</a>		
14	California									
15	California State Polytechnic University, Pomona	Computer Information Systems	<a href="http://cba.csupomona.edu">http://cba.csupomona.edu</a>	College of Business Administration	CIS Undergraduate	<a href="http://cba.csupomona.edu">http://cba.csupomona.edu</a>				
16	California State University, Sacramento	Computer Science	<a href="http://www.ecs.csus.edu">http://www.ecs.csus.edu</a>	College of Engineering	Undergraduate Certificate in Computer Science	<a href="http://www.ecs.csus.edu">http://www.ecs.csus.edu</a>	Bachelor of Science in Computer Science	<a href="http://www.ecs.csus.edu">http://www.ecs.csus.edu</a>		
17	California State University, San Bernardino	Department of Information Systems	<a href="http://ids.csusb.edu/">http://ids.csusb.edu/</a>	College of Business Administration	Bachelor of Science in Information Systems	<a href="http://asm.csusb.edu/">http://asm.csusb.edu/</a>				
18	Naval Postgraduate School	Center for Information Systems Research	<a href="http://www.cisr.usf.edu">http://www.cisr.usf.edu</a>	<a href="http://nps.edu/">http://nps.edu/</a>	Information Assurance	<a href="http://cisr.nps.edu/cor">http://cisr.nps.edu/cor</a>	MS concentration in Information Assurance	<a href="http://cisr.nps.edu/iac">http://cisr.nps.edu/iac</a>		
19	University of California at Davis	Department of Computer Science	<a href="http://www.cs.ucdavis.edu">http://www.cs.ucdavis.edu</a>	College of Engineering	Computer Science	<a href="http://www.cs.ucdavis.edu">http://www.cs.ucdavis.edu</a>				
20	University of California, Irvine	Research Department of Information Systems	<a href="http://www.ics.uci.edu/">http://www.ics.uci.edu/</a>	School of Information Systems	Algorithms and Complexity	<a href="http://www.ics.uci.edu/">http://www.ics.uci.edu/</a>	Security, Privacy and Trust	<a href="http://www.ics.uci.edu/">http://www.ics.uci.edu/</a>		
21	University of Southern California	Department of Computer Science	<a href="http://www.cs.usc.edu/">http://www.cs.usc.edu/</a>	School of Engineering	CyberSecurity	<a href="http://ftp.usc.edu/spe">http://ftp.usc.edu/spe</a>	BS in Computer Engineering	<a href="http://www.cs.usc.edu/">http://www.cs.usc.edu/</a>		
22	Colorado									
23	Colorado Technical University	School of Computer Science	<a href="http://www.coloradotech.edu">http://www.coloradotech.edu</a>	College of Engineering	Bachelor of Science in Computer Science	<a href="http://www.coloradotech.edu">http://www.coloradotech.edu</a>	Bachelor of Science in Computer Science	<a href="http://www.coloradotech.edu">http://www.coloradotech.edu</a>		
24	Regis University	School of Computer Science	<a href="http://regis.edu/regis.as">http://regis.edu/regis.as</a>	College for Professional Studies	Bachelor of Science in Computer Science	<a href="http://regis.edu/regis">http://regis.edu/regis</a>	Bachelor of Science in Computer Science	<a href="http://regis.edu/regis">http://regis.edu/regis</a>		
25	United States Air Force Academy	USAF Research	<a href="http://www.usafa.edu/dl">http://www.usafa.edu/dl</a>	Dean of Faculty						
26	University of Denver	Department of Computer Science	<a href="http://www.du.edu/secs">http://www.du.edu/secs</a>	School of Engineering						
27	Connecticut									
28	University of Connecticut	Department of Computer Science	<a href="http://www.cs.uconn.edu">http://www.cs.uconn.edu</a>	The School of Engineering	Computer Science & Information Systems	<a href="http://www.cs.uconn.edu">http://www.cs.uconn.edu</a>	Computer Science & Information Systems	<a href="http://www.cs.uconn.edu">http://www.cs.uconn.edu</a>	<a href="http://cispes.engr.uconn.edu">http://cispes.engr.uconn.edu</a>	

# K-12 Cybersecurity Education Project

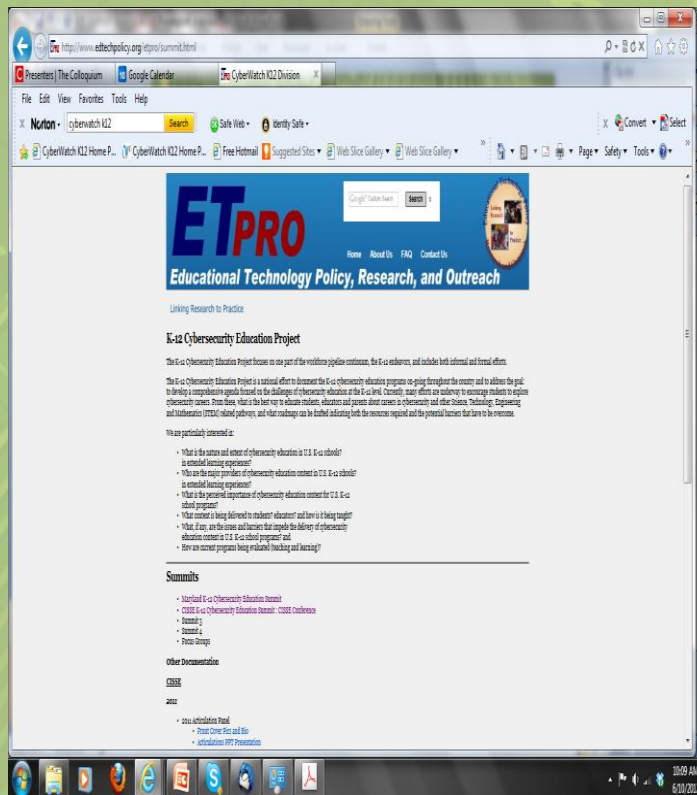
## ❖ Guiding Questions:

- What is the **nature and extent** of cybersecurity education in U.S. K-12 schools?  
in **extended learning** experiences?
- Who are the **major providers** of cybersecurity education content in U.S. K-12 schools?  
in extended learning experiences?
- What is the **perceived importance** of cybersecurity education content for U.S. K-12 school programs?
- What **content** is being delivered to students? educators? and how is it being taught?
- What, if any, are the **issues and barriers** that impede the delivery of cybersecurity education content in U.S. K-12 school programs? and
- How are current programs being **evaluated** (teaching and learning)?

# Reports

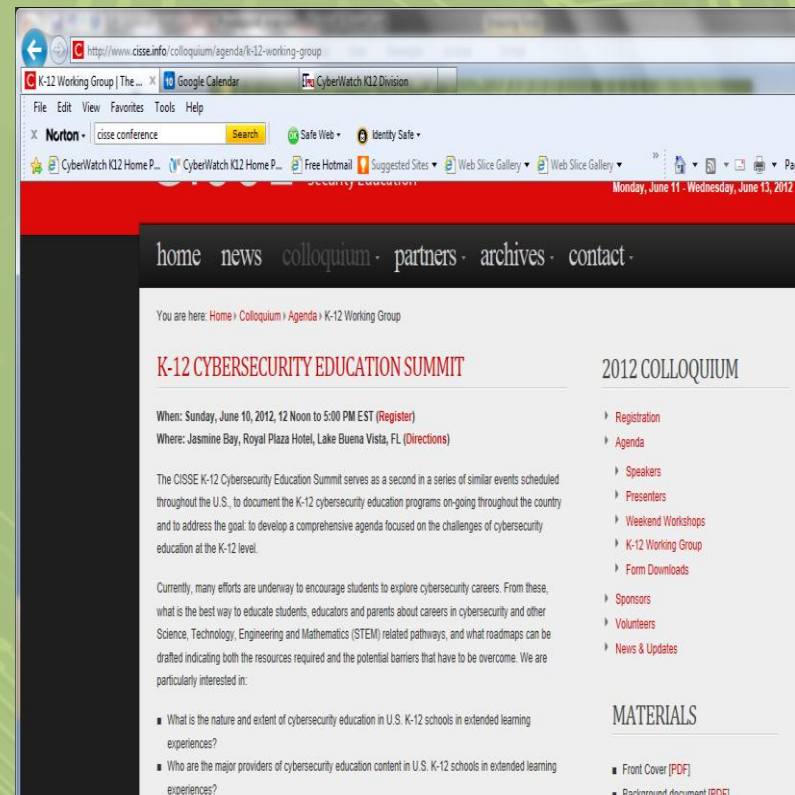
## Project

<http://www.edtechpolicy.org/etpro/summit.html>



## CISSE Working Group

<http://www.cisse.info/colloquium/agenda/k-12-working-group>



# K-12 Standards (tech related)

- Maryland Teacher Technology Standard [[PDF](#)]
- Maryland Teacher Professional Development Standards [[PDF](#)]
- Maryland VSC Technology Education State Curriculum [[PDF](#)]
- Technological Literacy vs. Technology Literacy Comparison Chart [[PDF](#)]
- ITEA STL [[PDF](#)]
- Common Core State Standards and CCTC Standard Guidelines [[PDF](#)]
- Common Core Technical Core Initiative [[PDF](#)]
- [MSDE Voluntary State Curriculum](#)
- National Common Core State Standards Initiative (Common Core)
  - [Common Core/CCTC](#)
- [MSDE Common Core](#)
- [MTTS](#)
- [Tech Ed vs Ed Tech Standards](#)
- [MD Tech Ed Standards](#)
- [MD Educational Technology Standards](#)
- [A one-page summary of the ITEA Standards for Technological Literacy](#)
- [Information Literacy Standards](#)
- The complete STL document is available at this [link](#)
- [Computer Literacy](#)
- [ITEA STL](#)
- [CCTC](#)
- [MD Professional Development Standards](#)
- [MD Tech Standards](#)
- [The International Society for Technology in Education \(ISTE\) National Educational Technology Standards for Teachers ISTE NETS\\*<sup>T</sup>](#)
- [National Council for Accreditation of Teacher Education \(NCATE\)](#)
- [Maryland Technology Standards for School Administrators \(TSSA\)](#)
- [ISTE NETS](#)
- [MD Technology Leadership Toolkit Online Professional Development for School Administrators](#)
- [Maryland Professional Development Standards](#)
- [STEM Standards of Practice \(SOP\)](#)

# Common Core

**COMMON CORE STATE STANDARDS INITIATIVE**  
PREPARING AMERICA'S STUDENTS FOR COLLEGE & CAREERS

Home About the Standards Voices of Support News Resources FAQ The Standards

CCSSO  
Council of Chief State School Officers

NATIONAL GOVERNORS  
ASSOCIATION

## Common Standards

Building on the excellent foundation of standards states have laid, the Common Core State Standards are the first step in providing our young people with a high-quality education. It should be clear to every student, parent, and teacher what the standards of success are in every school.

[Learn more »](#)

Common Standards

State Adoption

Voices of Support

### Mission Statement

The Common Core State Standards provide a consistent, clear understanding of what students are expected to learn, so teachers and parents know what they need to do to help them. The standards are designed to be robust and relevant to the real world, reflecting the knowledge and skills that our young people need for success in college and careers. With American students fully prepared for the future, our communities will be best positioned to compete successfully in the global economy.

### Official Identifiers & Metadata Project

{ [Click here to learn more!](#) }

## Download the Common Core State Standards

English Language Arts Standards Mathematics Standards

# K12 Efforts

The screenshot shows the homepage of STEMconnector™. At the top, the logo is followed by the tagline "The One Stop Shop for STEM Education". A navigation bar includes links for "STEM Directory", "State By State", "Town Hall", "100 Women", "STEM Daily", "Blog", and "About". A search bar is prominently displayed with the text "Search STEM Directory" and a "View all Directory Profiles" button. Below the search bar, a breadcrumb trail reads "Home » STEM Directory — How to Use This Site". The main heading is "STEM Directory — How to Use This Site". The introductory text explains that the site has profiled over 3,700 national, state, local, and federal STEM organizations, with profiles being added continuously. It lists various search criteria like subject matter, scope, and diversity. A "Select a Category" link is visible at the bottom of the main content area.

This screenshot displays the "Higher Education Institutions" page. It features a header with a banner image and the text "Higher Education Institutions". Below the header, there is a section titled "Other Cybersecurity Related Competitions" with a sub-header "2011-2012 Compiled list [PDF]". A list of competitions is provided, categorized by level: High School Level, Middle School Level, and Elementary. A sidebar on the right, titled "In This Section", contains a list of links for various resources like "Overview", "CyberSecurity Need", "Programs", and "Annual Careers in CyberSecurity for Girls Summit". At the bottom right, there is a Venn diagram with three overlapping circles labeled "Cyberethics", "Cybersafety", and "C3 Awareness".

## Higher Education Institutions

### Other Cybersecurity Related Competitions

2011-2012 Compiled list [PDF]

There are many competitions designed to excite your students about careers in cybersecurity and related fields. Visit the ever expanding list of competitions for students. Let us know if you hear of a new one

Contact Us

- **High School Level**
  - HS Network Security Competition
  - North American Computational Linguistics Olympiad (NACLO)
  - FIRST Robotics Competition (FRC)
  - First Tech Challenge (FTC)
  - STOP THINK CONNECT PSA
  - American Computer Science League (ACSL)
  - Society for Science and the Public (SSP)
  - (MS-ISAAC) Kids Safe Online Poster Contest
  - Maryland Society for Educational Technology Grants and Digital Media Contests
  - USA Imagine Cup by Microsoft
  - Cyber Patriot Challenge
  - Cyber Challenge Foundations and Quest
  - US Cyber Challenge DC3 Digital Forensics Challenge
  - International Linguistics Olympiad
  - Intel Talent Search
  - eCYBERMISSION
  - HoneyNet Project Forensic Challenge
  - SANS Digital Forensics and Incident Response Challenge
  - FBI (Computer Graphics, Programming and Cybersecurity)
  - Business Professionals of America
- **Middle School Level**
  - FIRST Lego League (FLL)
  - eCYBERMISSION
  - STOP THINK CONNECT PSA
  - American Computer Science League (ACSL) Jr. Division
  - Society for Science and the Public (SSP)
  - (MS-ISAAC) Kids Safe Online Poster Contest
  - Maryland Society for Educational Technology Grants and Digital Media Contests
  - North American Computational Linguistics Olympiad
- **ELEMENTARY**
  - JR. First Lego League (Jr. FLL)
  - (MS-ISAAC) Kids Safe Online Poster Contest
  - Maryland Society for Educational Technology Grants and Digital Media Contests

In This Section

- Overview
- CyberSecurity Need
- Programs
- Annual Cool Careers in CyberSecurity for Girls Summit
- Annual Careers in CyberSecurity for Guidance Counselors
- Resources
- Professional Development
- Speakers
- Mid Atlantic CCDC High School Competition and Career FairExpo
- CSIA's High School Network Security Competition
- DC3 Digital Forensics Challenge
- US Cyber Challenges
- CyberPatriot

Cyberethics, Cybersafety, C3 Awareness

# Efforts

revised in these standards):

Based on information before you read the compiled program list

Circle one

How aware are you about the following programs and standards...	Not at all aware			Very well aware
Information Technology Career Technical Education (CTE) Cluster	1	2	3	4
IT Networking Academy	1	2	3	4
Computer Science Academy/ Computer Programming Academy	1	2	3	4
Database Academy (Oracle)	1	2	3	4
Academy of Information Technology (National Academy Foundation) (NAF)	1	2	3	4
Cybersecurity CTE Path	1	2	3	4
Project Lead the Way	1	2	3	4
Engineering is Elementary®	1	2	3	4
CyberSTEM™	1	2	3	4
National Common Core State Standards	1	2	3	4
Tech Ed Standards	1	2	3	4
Technology Literacy (Educational Technology) Standards	1	2	3	4
Computer Skills Companion Standards	1	2	3	4
Information Literacy Standards	1	2	3	4
ISTE NETS™ Teacher Technology Standards	1	2	3	4
Information Literacy Standards	1	2	3	4
ISTE NETS™ Student Technology Standards	1	2	3	4
SECURE IT Program	1	2	3	4
National Professional Development Standards	1	2	3	4
STEM Standards of Practice (SOP)	1	2	3	4
FBIA, Future Business Leaders of America—Cybersecurity Competition	1	2	3	4
SkillsUSA Cybersecurity related competitions	1	2	3	4
Robotics First, First Tech, First Leagues, Jr First League	1	2	3	4
High School Network Security Competition	1	2	3	4
North American Computational Linguistics Olympiad (NACLO)	1	2	3	4
American Computer Science League (ACSL)	1	2	3	4
Society for Science and the Public (SSP)	1	2	3	4
USA Imagine Cup by Microsoft	1	2	3	4
Business Professionals of America (BPA) Cybersecurity related competitions	1	2	3	4
Destination Imagination	1	2	3	4
Cyber Patriot Challenge	1	2	3	4
Cyber Challenge Foundations and Quest	1	2	3	4
International Linguistics Olympiad (IOL)	1	2	3	4
eCYBERMISSION	1	2	3	4
CAE/CAE2Y Outreach	1	2	3	4
CryptKids	1	2	3	4
STARTALK	1	2	3	4

## PANEL:

### *K12 Cybersecurity Education Options*

- Paul Wahnish, Career Technical Education Foundation, Inc.
- Skip Lawver – EMU/ Lenawee schools cyber security opportunities
- Joseph Cuenco - Science Center of Pinellas County; Cyber Security Education
- CyberWatch, (Cybersecurity CTE Path/ Career Academies)
- Sheryl Hale, (CTE Path/ Career Academies)
- Alec Yasinsac and Les Barnett – AL Computer Science as a Pathway

# K-12 Working Group

- The mission of the CISSE K-12 Working Group (WG-K12) is to be a ***leading resource for K-12 cybersecurity education. The special interest group serves its members and represents the interests of Cybersecurity education by fostering high quality discussion, dialogue, sharing and promoting professional growth through:***
  - 1. Advancement of education and practice,
  - 2. Facilitation of quality research,
  - 3. Professional development of its members, and
  - 4. Encouraging an interaction between the Cybersecurity professional, higher education faculty and K-12 communities
- *Vision Statement DRAFT*
- The CISSE K-12 Working Group (WG-K12) is a leading authority in K-12 cybersecurity education. WG-K12 leads through discussion, professional development and dissemination of current information/trends, current practice, research initiatives and outreach programs with Cybersecurity professional, higher education faculty and K-12 communities.

# CISSE K12 Cybersecurity Education Summit

