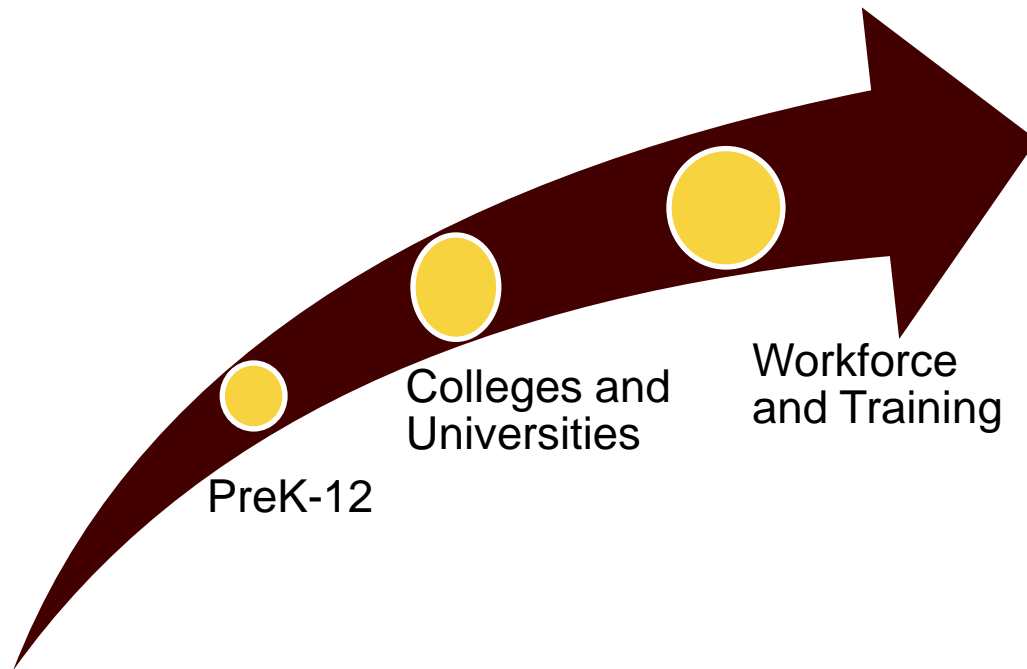# Aligning P-20W Cybersecurity Education in Maryland

Pat Mikos, Program Manager

Division of Career and College Readiness

September 19, 2013

Cybersecurity Education
P-20W Collaboration

Workforce
and Training

Colleges and
Universities

PreK-12

Increasing Student Awareness and Understanding of Cyber Security

Awareness
- Community and family outreach
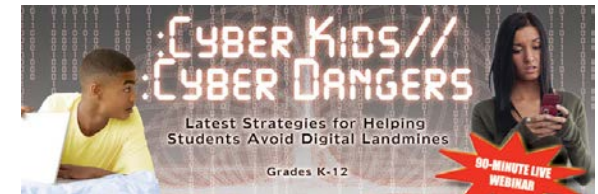- Emphasis is on safety

Ft. Meade Alliance

Exploration
- Learn about cyber security field
- Exploring careers and challenges
- Summer camps

Career Development
- CTE Programs of Study
- Cyber competitions
- College courses
- Industry certifications

www.MDCTEPROGRAMS.org

- Arts, Media, & Communication

- Business, Management & Finance

- Construction & Development

- Consumer Services, Hospitality, & Tourism

- Environmental, Agricultural, & Natural Resources Systems

- Health & Biosciences
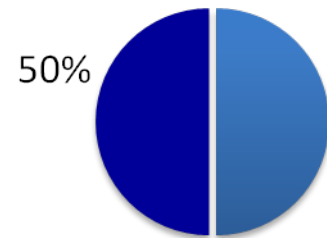
- Human Resource Services

- Information Technology

- Manufacturing, Engineering & Technology

- Transportation Technologies

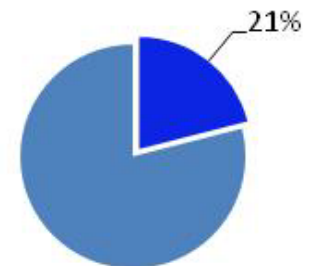Maryland High School Career and Technology Education Programs of Study

CAREER AND TECHNOLOGY EDUCATION

EDUCATING TOMORROW'S WORKFORCE TODAY

MARYLAND STATE DEPARTMENT OF EDUCATION

MARYLAND STATE DEPARTMENT OF EDUCATION
Preparing World-Class Students
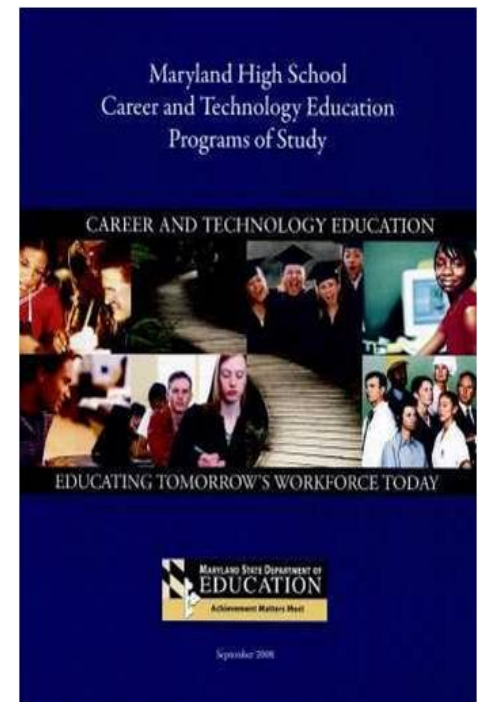
Quick Facts About Maryland CTE

Percent of High School CTE Enrollment (10-12)

- Nearly half (50%) of all grade 10-12 high school students enroll in a CTE course (112,114)

50%

- 21% of the class of 2012 completed a *CTE Program of Study* (12,527)

% CTE Graduates

21%

- 54% of the CTE Graduates are "Dual Completers" – both *College & Career Ready*

MARYLAND STATE DEPARTMENT OF **EDUCATION**
Preparing World-Class Students

IT Cluster Enrollment

Total Enrollment = 6,894

Pie chart data:
- AMC, 4,484, 4%
- TT, 2,345, 2%
- MET, 12,384, 11%
- IT, 6,894, 6%
- HRS, 22,718, 20%
- H&B, 6,086, 5%
- EANR, 4,750, 4%
- CSHT, 10,546, 9%
- CRD, 8,285, 7%
- C&D, 4,726, 4%
- BMF, 32,926, 28%
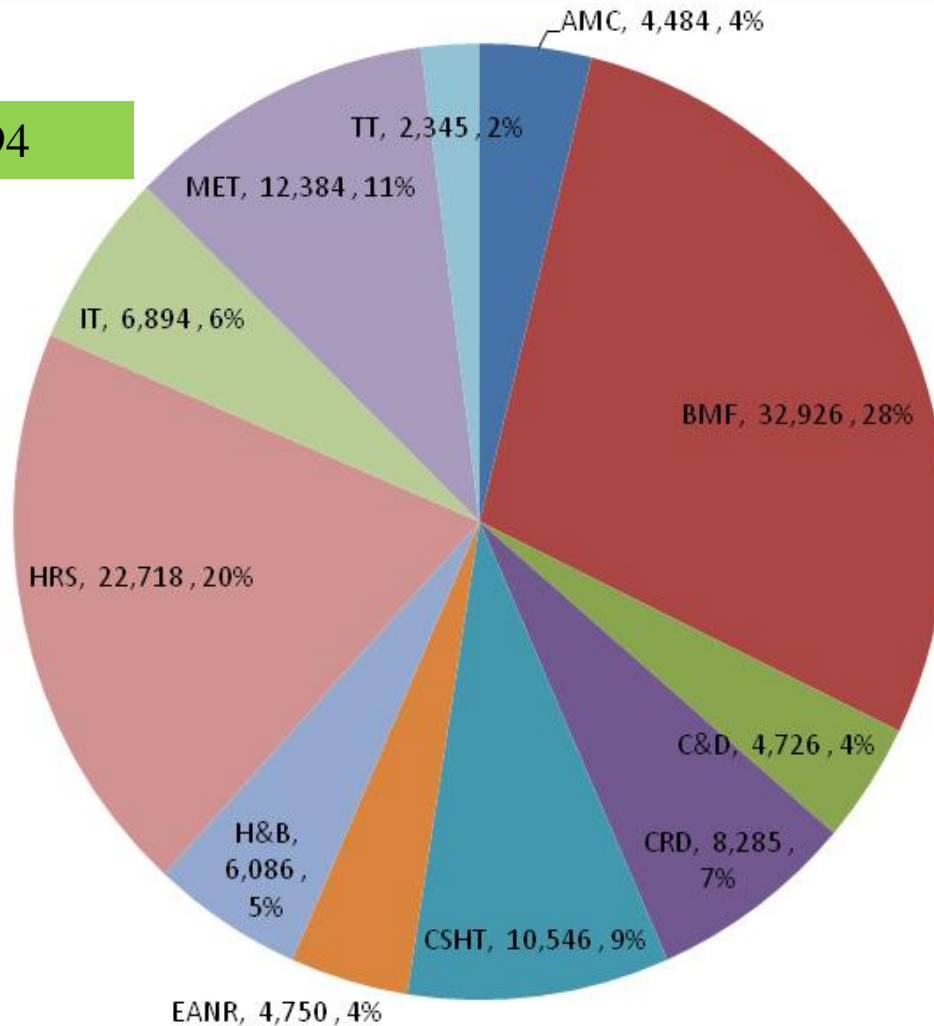
Career Technology Education (CTE)
IT Programs of Study

- ☐ Academy of Information Technology (NAF)

- ☐ Database Academy (Oracle)

- ☐ IT Networking Academy (Cisco)
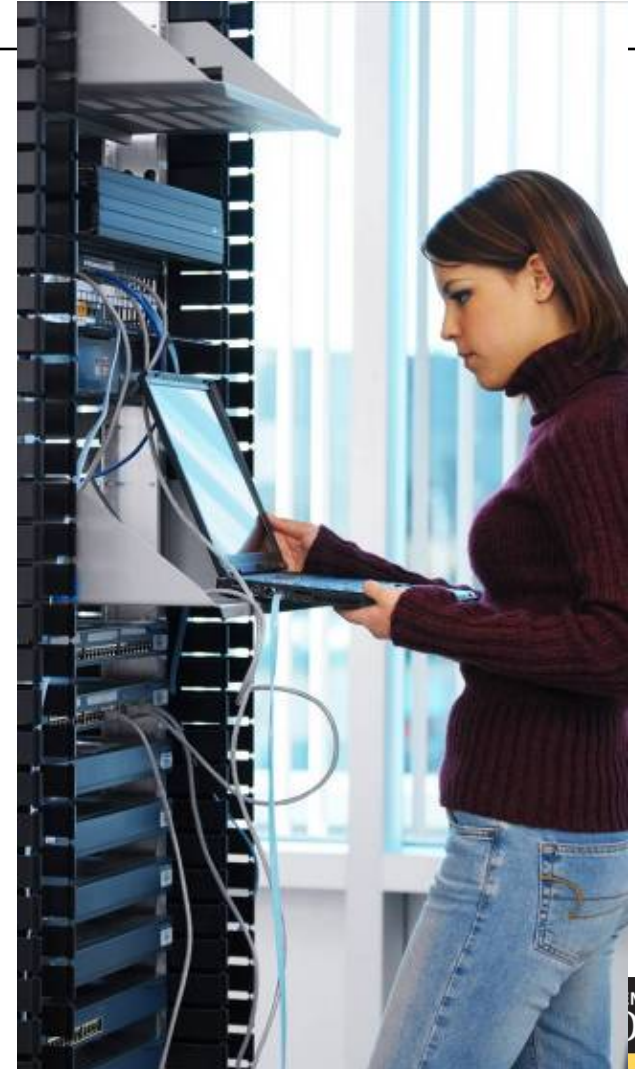
- ☐ Computer Science (ACM/CSTA)

IT Networking (Cisco)

- CCNA Discovery I: Networking for Home and Small Business

- CCNA Discovery II: Networking Small-to-Medium Business or ISP

CCENT Certification Exam
640-822 ICND1

- CCNA Discovery III: Routing and Switching in the Enterprise

- Capstone Course: CCNA Discovery IV:

Designing and Supporting Computer Networks

CCNA Certification Exam
640-802 ICND2

IT Networking

CISCO

	1st Year	
• CyberWatch: *Ethics and the Information Age*		• IT Essentials (Part 1): PC Hardware and Software
•CCNA Discovery I: Networking for Home and Small Business		• CyberWatch: *Ethics and the Information Age*
CompTIA A+ Certification		**CompTIA A+ Certification**
	2nd Year	
• CCNA Discovery II: Networking Small-to-Medium Business or ISP		• IT Essentials (Part 2): Advanced PC Hardware and Software
• CyberWatch: *Security+*	**CyberWatch**	• CyberWatch: *Security+* or *Tactical Perimeter Defense*
CCENT Certification		

IT Computer Science & Cyber Security

- ***Foundations of Computer Science (Exploring Computer Science)***

- ***Computer Science Principles (new AP)***

- ***Computer Science: Advance Placement***

  College Board AP Exam

- **CyberWatch:** *Ethics and Information Age*

  OR

- **CW**: *Microcomputer Operating* Systems
  OR

- **College**: Dual Enrollment in CS/IT

UMBC

AN HONORS UNIVERSITY IN MARYLAND

csta | Computer Science Teachers Association

CW CyberWatch

MARYLAND STATE DEPARTMENT OF
EDUCATION
Preparing World-Class Students

Support for Cybersecurity Education

☐ District/School Advisory Groups for CTE Programs

☐ Workshops for Teachers and Guidance Counselors

☐ Competitions

☐ Summer Camps

☐ Sponsoring a GT Summer Center

☐ Internships and Mentoring