

# A GLOBAL CALL TO ARMS: THE WORLDWIDE CYBERSECURITY SKILLS SHORTAGE

*The ISACA 2015-16 Chapter Roadshow*

# My BIO

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**Senior Mgr., Cybersecurity Practices & Cyber Evangelist**

***Globally Recognized Cyber Expert***

### **Background:**

- **Former commander Cyber Red Team—USAF**
- **Architect cyber training & exercise integration—USAF**
- **Chief, Cybersecurity Education & Awareness—DHS**
  - **Architect of National Cybersecurity Workforce Framework**
  - **Developed & Launched the NICCS Portal**
- **Senior Advisor/Lead, National Initiative for Cybersecurity Education (NICE)—White House**
- **Presenter, Author, Blogger—Cybersecurity SME**
- **Nation’s only Certified Workforce Development Professional—Specializing in Cybersecurity**





# Cybersecurity Skills Crisis

## Too Many Threats

 **62%**  
INCREASE  
IN BREACHES  
IN 2013<sup>1</sup>

**1 IN 5**   
ORGANIZATIONS  
HAVE **EXPERIENCED**  
**AN APT ATTACK**<sup>4</sup>

**US \$3**  
**TRILLION**  
TOTAL GLOBAL  
IMPACT OF  
**CYBERCRIME**<sup>3</sup>

 **7 1/2 MONTHS**  
IS THE AVERAGE TIME  
**AN ADVANCED THREAT**  
**GOES UNNOTICED** ON  
VICTIM'S NETWORK<sup>2</sup>

**2.5**  
**BILLION**   
**EXPOSED RECORDS** AS  
A RESULT OF A DATA BREACH  
IN THE PAST 5 YEARS<sup>5</sup>

## Too Few Professionals

 **62%**  
OF ORGANIZATIONS  
**HAVE NOT INCREASED**  
**SECURITY TRAINING**  
IN 2014<sup>6</sup>

 **1 OUT OF 3**  
SECURITY PROS ARE  
**NOT FAMILIAR WITH**  
**ADVANCED PERSISTENT**  
**THREATS**<sup>7</sup>

 **<2.4%**  
GRADUATING STUDENTS  
**HOLD COMPUTER**  
**SCIENCE DEGREES**<sup>8</sup>

  
**1 MILLION**  
UNFILLED SECURITY  
JOBS WORLDWIDE<sup>9</sup>

**83%**   
**OF ENTERPRISES** CURRENTLY  
LACK THE RIGHT SKILLS AND  
HUMAN RESOURCES TO PROTECT  
THEIR IT ASSETS<sup>10</sup>

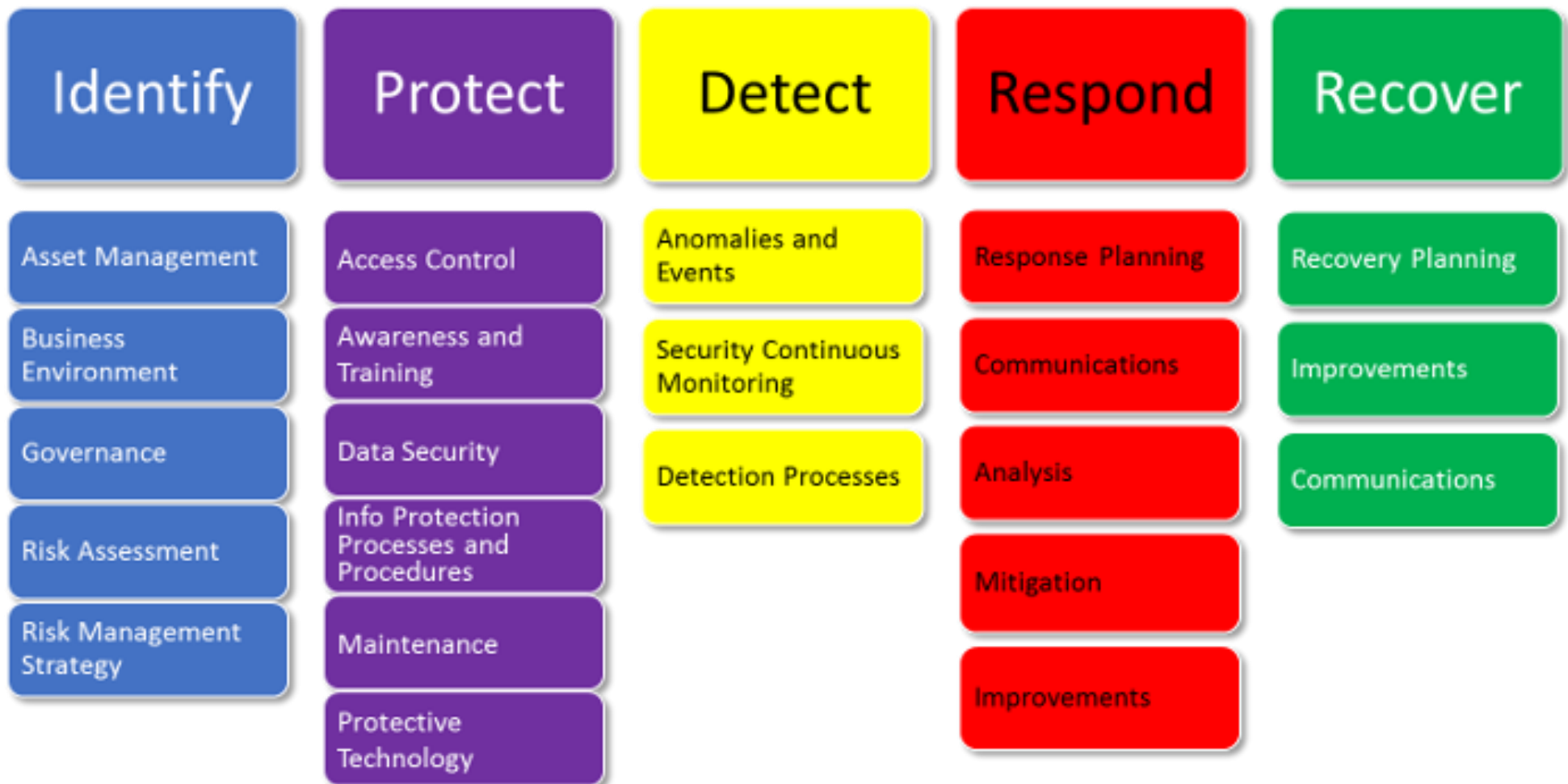
Enterprises are under siege from  
**a rising volume of cyberattacks.**

At the same time, the global demand for skilled professionals sharply outpaces supply. Unless this gap is closed, organizations will continue to face major risk. Comprehensive educational and networking resources are required to meet the needs of everyone from entry-level practitioners to seasoned professionals.

**SOURCES:** 1. 2014 Internet Security Threat Report, Volume 19, Symantec, April 2014; 2. M-Trends 2014: Attack the Security Gap, Mandiant, April 2014; 3. Increased Cyber Security Can Save Global Economy Trillions, McKinsey/World Economic Forum, January 2014; 4. ISACA's 2014 APT Study, ISACA, April 2014; 5. An Executive's Guide to 2013 Data Breach Trends, Risk Based Security/Open Security Foundation, February 2014; 6. ISACA's 2014 APT Study, ISACA, April 2014; 7. ISACA's 2014 APT Study, ISACA, April 2014; 8. Code.org, February 2014; 9. 2014 Cisco Annual Security Report, Cisco, January 2014; 10. Cybersecurity Skills Haves and Have Nots, ESG, March 2014



# NIST CYBERSECURITY FRAMEWORK



# A IMPERATIVE—NATIONAL INITIATIVE FOR CYBERSECURITY EDUCATION (NICE)

## The National Cybersecurity Workforce Framework

- ▶ 7 Categories and 32 Specialty Areas
- ▶ Baselines knowledge, skills, and abilities & tasks
- ▶ Support for strategic workforce development





# SWEET 16—CRITICAL SKILLS

## Key

	Updated Specialty Area Title and Definition (8)
	Updated Specialty Area Definition (14)
	New Specialty Area (1)
	Change in Category Placement (2)

## Investigate

 Digital Forensics

 Cyber Investigation

## Protect and Defend


 Enterprise Network Defense Analysis

Vulnerability Assessment and Management

 Incident Response


 Enterprise Network Defense Infrastructure Support

## Operate and Maintain

 System Administration

 Network Services

 Customer Service and Technical Support


 Systems Security Analysis

 Data Administration

## Oversee and Govern\*


 Strategic Planning and Policy Development

 Security Program Management

 Information Systems Security Operations

 Training, Education, and Awareness (TEA)


Legal Advice and Advocacy

 Knowledge Management  


 Risk Management (was IA Compliance)  



## Securely Provision


 Technology Research and Development

 Systems Requirements Planning

 Systems Security Architecture

 Secure Software Engineering

 Systems Development

 Test and Evaluation

 Secure Acquisition

**CATEGORIES NOT UPDATED**  
(DUE TO SENSITIVE CONTENT)

## Collect and Operate

Cyber Operations Planning

Cyber Operations

Collection Operations

## Analyze

Cyber Threat Analysis

All Source Intelligence

Targets

Exploitation Analysis

# FIRST: CREATE A PLAN...START HERE

1. Go to [niccs.us-cert.gov](http://niccs.us-cert.gov)
2. Download user guide
3. Download and use communications toolkit





# EXECUTE THE PLAN—CSX

[cybersecurity.isaca.org](https://cybersecurity.isaca.org)










# CYBERSECURITY: MARKET NEED

- The research is clear. Cybersecurity has evolved from an IT function into a public safety issue.
- 82% of enterprises expect to experience a cyber incident in 2015.
- More than 35% are unable to fill open cybersecurity positions
- 69% say certification is required for cybersecurity jobs.
- Only 33% say qualified candidates have hands-on experience.
- 46% say technical skills are needed.
- There is a cybersecurity skills crisis: 1 million unfilled jobs. (Cisco)



# OUR SOLUTION

**CSX Is Providing a Single Source for Cybersecurity Professionals:** our holistic program will be the first and only “one stop shop” providing a complete solution and covering the full career lifecycle.

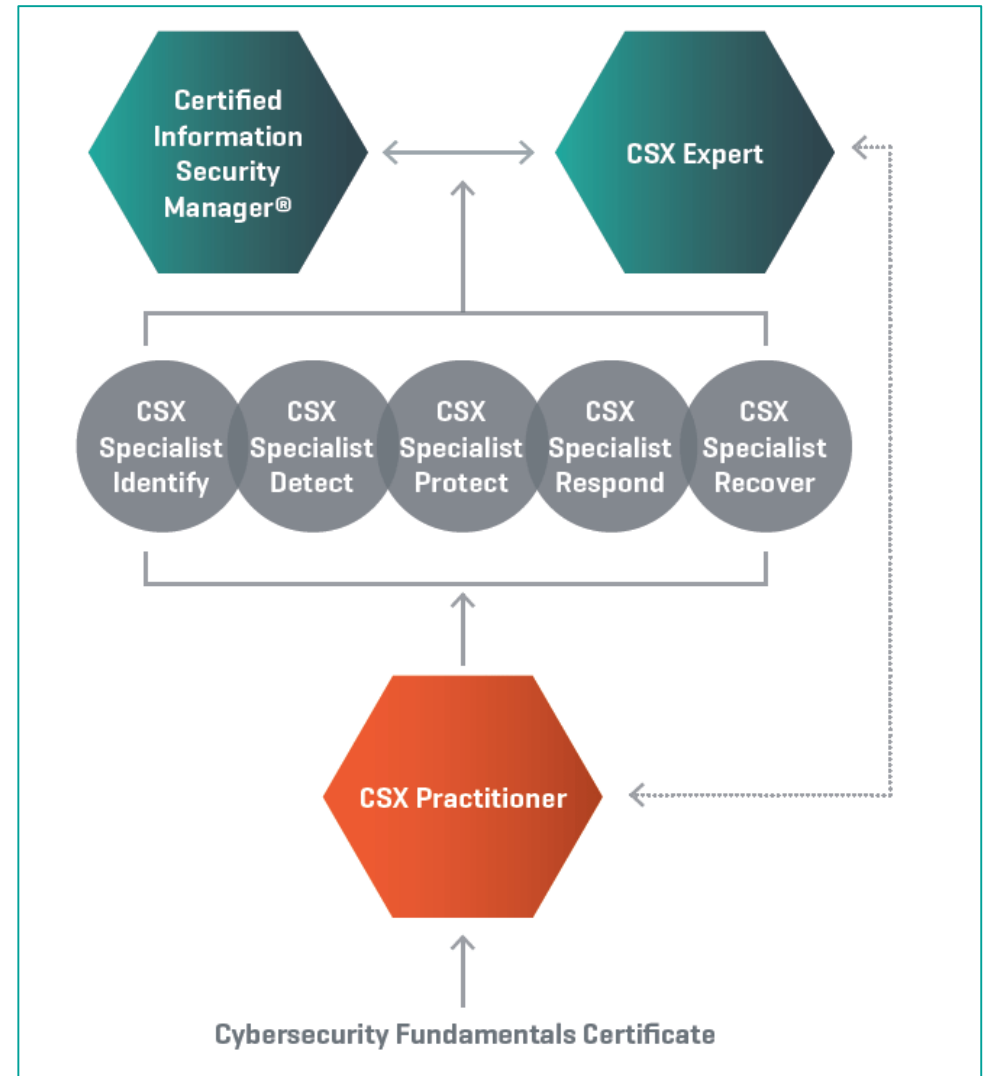
Credentialing and Training	Education/ Conferences	Membership	Resources/ Publications	Career Management
				

# CYBERSECURITY TRAINING AND CERTIFICATIONS



CSX training and certifications offered for skill levels and specialties throughout a professional's career.

<https://cybersecurity.isaca.org/csx-certifications>





# CYBERSECURITY TRAINING AND CERTIFICATIONS



**CSX Practitioner**—Demonstrates ability to serve as a first responder to a cybersecurity incident following established procedures and defined processes. (1 certification, 3 training courses; prerequisite for CSX Specialist)



**CSX Specialist**—Demonstrates effective skills and deep knowledge in one or more of the five areas based closely on the NIST Cybersecurity Framework: Identify, Detect, Protect, Respond and Recover. (5 certifications, 5 training courses; requires CSX Practitioner)



**CSX Expert**—Demonstrates ability of a master/expert-level cybersecurity professional who can identify, analyze, respond to, and mitigate complex cybersecurity incidents. (1 certification, 1 training course; no prerequisites required)



**Certified Information Security Manager certification** (26,000+ professionals certified since inception; named the second-highest-paying certification by Global Knowledge's 2015 IT Skills and Salary Survey; 5+ years experience required)



# cybersecurity.isaca.org

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