National Centers of Academic Excellence in Cyber Defense (CAE-CD)

The National Security Agency (NSA) and the Department of Homeland Security (DHS) jointly sponsor the National Centers of Academic Excellence in Cyber Defense (CAE-CD) program. The goal of the program is to reduce vulnerability in our national information infrastructure by promoting higher education and research in cyber defense and producing professionals with cyber defense expertise for the Nation.

CAE-CD Designations

◆ Four-Year Baccalaureate/Graduate Education (CAE-CDE)
◆ Two-Year Education (CAE-2Y)
◆ Research (CAE-R)
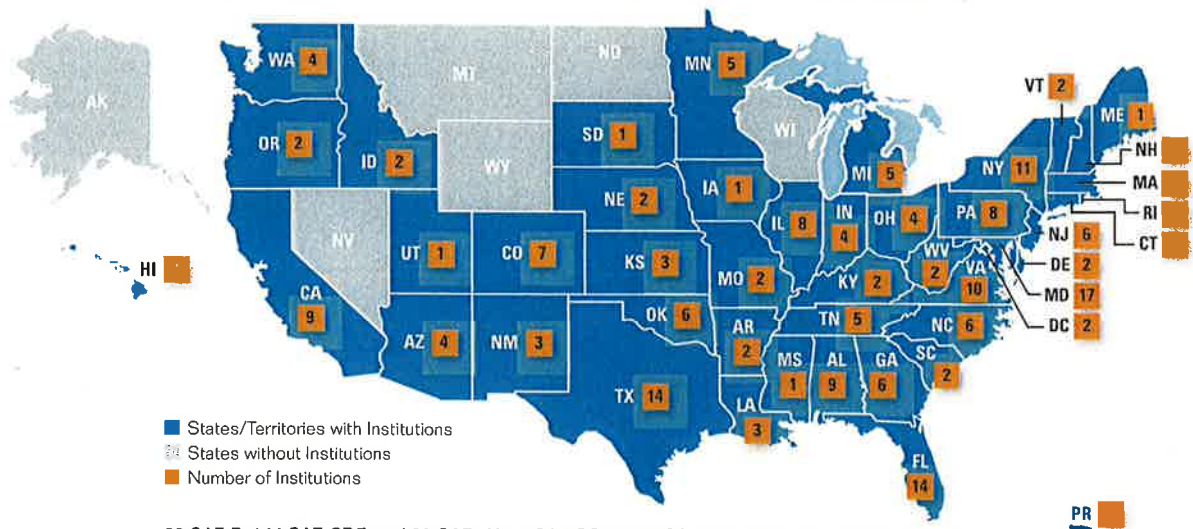
All CAE-CD Institutions are:

◆ Regionally accredited within the United States
◆ Leaders in Cyber Defense education and the development of the cybersecurity discipline
◆ Producers of cyber professional from mature programs
◆ Educating students with curriculum that meet or exceed criteria established by NSA in collaboration with academia, NICE, and the NICE Workforce Framework

CAE-Cybersecurity Designated Institutions

Map includes both institutions in the CAE-Cyber Defense and CAE-Cyber Operations programs.

WA 4 · OR 2 · ID 2 · HI · CA 9 · AZ 4 · NM 3 · UT 1 · CO 7 · TX 14 · ND · SD 1 · NE 2 · KS 3 · OK 6 · MN 5 · IA 1 · MO 2 · AR 2 · LA 3 · MI 5 · IL 8 · IN 4 · OH 4 · KY 2 · TN 5 · MS 1 · AL 9 · GA 6 · FL 14 · WV 2 · VA 10 · NC 6 · SC 2 · PA 8 · NY 11 · VT 2 · ME 1 · NH · MA · RI · CT · NJ 6 · DE 2 · MD 17 · DC 2 · PR

■ States/Territories with Institutions
▨ States without Institutions
■ Number of Institutions

66 CAE-R, 144 CAE-CDE, and 38 CAE-2Y, 16 CAE-CO at 209 CAE institutions (39 multiple designations)
in 44 states + District of Columbia and Commonwealth of Puerto Rico
https://www.iad.gov/NIETP/reports/cae_designated_institutions.cfm

For more information, visit: *www.iad.gov/nietp* or contact: *askCAEIAE@nsa.gov*

NICE
NATIONAL INITIATIVE FOR CYBERSECURITY EDUCATION

nist.gov/nice

NIST
National Institute of Standards and Technology
U.S. Department of Commerce

Cybersecurity Workforce Demand

1.5 Million

MORE cybersecurity professionals will be needed to accommodate the predicted global shortfall by 2020

*Source: (ISC)² 2015 Global Information Security Workforce Study*

On average, 52%

of IT professionals surveyed stated fewer than **25%** of all applicants were qualified

Source: State of Cybersecurity: Implications for 2015: An ISACA and RSA Conference Survey

The biggest skill gaps of today's cybersecurity professionals

72% **Ability to Understand the Business**

46% **Technical Skills**

42% **Communication Skills**
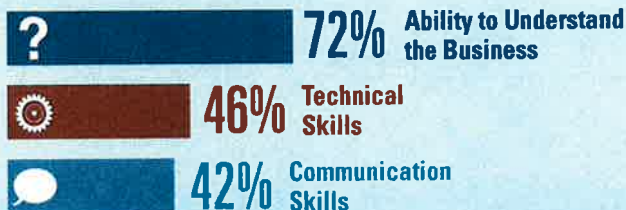
Source: State of Cybersecurity: Implications for 2015 An ISACA and RSA Conference Survey

Fastest cybersecurity demand sectors are in industries managing consumer data

Industries Managing Consumer Data

- 30% Other
- 40% Professional Services
- 14% Manufacturing and Defense
- 16% Finance and Insurance

Source: Job Market Intelligence: Cybersecurity Jobs, 2015–2016 Burning Glass Technologies

Cybersecurity

job postings took **8%** longer to fill than IT job postings overall

Source: (ISC)² 2015 Global Information Security Workforce Study

Expertise required for various cybersecurity roles in demand

- Information Security
- Network Setup
- Auditing
- Network Protocols
- Core Database, Coding and Scripting
- Systems Administration

Source: Job Market Intelligence: Cybersecurity Jobs, 2015

Approximately 10%

of the current cybersecurity workforce are comprised of women

Source: (ISC)² 2015 Women in Security: Wisely Positioned for the Future of InfoSec

18% Growth

Computer and mathematical occupations will grow much faster than the average job during 2012–2024

Source: Bureau of Labor Statistics, U.S. Department of Labor

Fastest growing skills in cybersecurity job postings

- Python
- HIPAA
- Risk Management
- Internal Auditing
- Audit Planning

Source: Partnership for Public Service

Hardest to fill skills in cybersecurity job postings

Source: Job Market Intelligence: Cybersecurity Jobs, 2015–2016 Burning Glass Technologies

Software Architecture
Network Attached Storage (NAS)
Software Issue Resolution
Internet Security
Legal Compliance
Data Communications
Platform as a Service (PaaS)
Computer Forensics
Internal Auditing
Apache Hadoop