# National Security Agency's (NSA) Cybersecurity Directorate (CSD) Academic Strategy

CYBERSECURITY

## PURPOSE

*This strategy describes how CSD will invest in academic partnerships to 1) **prevent** and **eradicate** cyber threats to better protect the National Security Systems (NSS) and the Defense Industrial Base, and 2) recruit, train, equip, and retain the next generation of diverse cybersecurity professionals.*

## STRATEGIC ENVIRONMENT

*Cybersecurity has increasingly become a national security issue, and DoD/NSS owners are adopting various technologies and skills to protect them. By building partnerships with academia in science, technology, engineering, and mathematics (STEM) and cyber research and training, CSD can leverage their resources in support of NSA strategic priorities and ensure our workforce is fully equipped to meet the cyber threat landscape of tomorrow. Key technology and research areas that will further national security and cybersecurity include, but not limited to:*

- 5G
- Artificial Intelligence/Machine Learning
- Blockchain Technology (e.g., Cryptocurrency)
- Cloud Computing
- Data Science
- Malware Analysis & Mitigations
- Quantum Computing & Post Quantum
- Radio Frequency Engineering
- Ransomware
- Security Engineering
- Software Assurance
- STEM/Cybersecurity Education
- Supply Chain
- Vulnerability Analysis
- Zero Trust

## OUTCOMES

*The CSD Academic Strategy is designed to achieve the following two outcomes:*

1. Academic partners contribute to initiatives designed to prevent and eradicate cyber threats to National Security Systems and the Defense Industrial Base as a result of funded and unfunded collaborations
2. CSD is a place where diverse, STEM and cybersecurity professionals thrive

## LINES OF ACTION

*To achieve these outcomes, CSD is advancing along the following lines of action (CATEGORY):*

- Accelerate and increase recruitment efforts and monitor CSD engagements with Historically Black Colleges/Universities (HBCUs), Hispanic Serving Institutions (HSIs), Minority Serving Institutions (MSIs), and State and Local schools (***RECRUITMENT***);
- Bolster and use the cybersecurity content of the National Cryptologic University and the National Cryptologic Foundation (***EDUCATION & TRAINING***);
- Broaden partnerships with the National Labs, Federally Funded Research and Development Centers (FFRDCs), University Affiliated Research Centers (UARCs), and academic institutions near NSA Cryptologic Centers (***PARTNERSHIPS***);
- Establish opportunities for CSD subject matter experts to lecture and/or provide experiential learning opportunities at partner universities, and for professors from partner universities to serve "Visiting Scholar" appointments at CSD (***PARTNERSHIPS***);
- Ensure CSD Hiring Managers attend CCC events to promote and present hiring information to diverse student presenters per quarter (***RECRUITMENT***);
- Fortify academic partnerships at military academies/installations and Centers of Academic Excellence (***PARTNERSHIPS***);
- Host diverse student presenters to brief cybersecurity research and job talks at the Cybersecurity Collaboration Center (CCC) and virtually per quarter (***K-20 STEM/CYBER AWARENESS***);
- Increase STEM/Cyber outreach and education at Tribal Colleges (***EDUCATION & TRAINING***);
- Stimulate interest in STEM/Cyber careers and develop curricula at elementary, middle and high school and post-secondary institutions (***K-20 STEM/CYBER AWARENESS***)[i];
- Survey recent alumni and evaluate their experience and use recommendations to keep successful standards and promote effective change (***CAREERS***); and
- Update, monitor, and fill Academic Liaison gaps from CSD with relevant colleges/universities (***PARTNERSHIPS***).

## MEASURING PROGRESS

*CSD will have achieved success in the Outcomes defined in this Strategy by making significant progress in the Lines of Action, with stepping stones as outlined in the following Key Results:*

- Grants awarded to partner universities to advance cybersecurity research;
- CSD subject matter experts lecturing at partner universities and average attendance per event;
- Opportunities for professors from partner universities to serve in "Visiting Scholar Appointments" at NSA;
- Academic Liaisons from CSD;
- CSD Engagements with academic partner institutions;
- University Student Presenters per Quarter;
- Diversity groups from partner colleges/universities to present cybersecurity research at CCC and virtually;
- CSD Hiring Managers attending academic events at the CCC or virtually;
- Conditional Job Offers extended as a result of CSD Engagement Events;
- Hires from CSD academic partner institutions each year; and
- Retention of recently hired CSD employees.

[i] As highlighted in the "Transform Cyber Education" Pillar within the Office of the National Cyber Director (ONCD)/White House *National Cyber Workforce and Education Strategy*, released by the Biden-Harris Administration on July 31, 2023.