Why is Cybersecurity Important?

Cybersecurity is in the news nearly every day. Dozens of retail chains, financial institutions, and health care organizations have suffered data breaches in recent years. The personal information of tens of millions of customers has been stolen by cyber-criminals in these breaches. Hundreds of commercial and industrial companies around the world have had data files locked out by attackers who demand ransoms to unlock their data. Cyber-criminals pose a clear threat to the wealth and safety of our citizens.

Dozens of high-tech companies have reported theft of Intellectual property in the past decade. Many of these companies build products used in our national defense. The personnel records of everyone who has worked for the Federal government, or even just applied for a position, were stolen from the Office of Personnel Management a few years ago, almost certainly by a hostile government. Enemy cyber-soldiers are a clear and present danger to the welfare and safety of the citizens of this nation.

What is Texas A&M Doing About It?

The Texas A&M Cybersecurity center seeks to advance cybersecurity knowledge, capabilities, and practices through research, innovation, and education. Working with researchers, faculty, and industry leaders, the center prepares well-educated cybersecurity professionals to pave the way for a more cybersecure future.

Texas A&M University (TAMU) holds the distinguished NSA and Department of Homeland Security National Center for Academic Excellence for Cyber Defense designations for education, research, and cyberoperations. It is one of only eight schools in the nation to hold all three designations.

TAMU faculty members are actively researching cybersecurity issues and solutions. Between 2012 and 2016, ten faculty members associated with the TAMU Cybersecurity Center published 52 research papers about a variety of cybersecurity topics. In addition, eleven faculty members associated with the Cybersecurity Center were involved in research projects related to cybersecurity.

Twelve faculty members are the Principal Investigators of funded research projects which total over $12,800,000. The funding comes from the National Science Foundation, various agencies of the Department of Defense, and private foundations.

TAMU graduate students are also involved in cybersecurity research. Between 2010 and 2016, 19 students completed Ph.D. dissertations on cybersecurity topics. During the same period, 12 students completed M.S. theses on cybersecurity topics.

In the 2016-2017 academic year, 224 undergraduate students were enrolled in the Cybersecurity Minor at TAMU. 186 were in the Computer Engineering, Computer Science, Management Information Systems, and Technology Management Departments. The remaining students came from 22 different

departments. These students will join the fight against cyber-criminals in the near future. 155 of them were seniors, 55 were juniors, and the rest were sophomores or freshmen.

The Cybersecurity Minor requires students to demonstrate basic software skills, and then gives them options to develop expertise in several areas critical to cybersecurity. Two courses in Communications and Cryptography enable students to understand cryptography, which is how cybersecurity achieves confidentiality and integrity of data.

Two courses in Computers and Network Security train students how to protect digital devices from remote attacks. In a world of embedded computers and the Internet of Things, every car or major appliance you purchase in the future will be at risk because of insecure networks, not to mention every digital device and computer.

Two courses in Forensic Investigations teach students the methods needed to develop a legal case against cyber-criminals. They learn how to properly preserve the chain of evidence in a digital world, which can be the difference between an arrest and a conviction.

Two courses in Identity/Access Management and Reverse Engineering give students specialized skills. The first strengthens their skills on defense, keeping attackers from being able to use protected servers. The second strengthens their skills on offense, enabling them to analyze and defeat malware.

Resources for Today, Insight for Tomorrow

Are you an information security officer responsible for a large enterprise? We have partnership opportunities that will enable you to get the trained resources you need today, whether they're student interns or full-time employees.

Are you an executive who has a legal obligation to perform due diligence in information security? We have partnership opportunities that will enable you to get the insight you need for tomorrow, from faculty and graduate students who are on the front lines of advanced research into future threats and solutions.

Are you a patriotic citizen who has the means to help us fight to preserve our freedom and way of life from terrorist groups and hostile countries? We have partnership opportunities that will enable you to help protect our nation and ensure a safer future for your children and grandchildren.

To learn more about the Cybersecurity Center, visit our website at cybersecuritycenter.tamu.edu.
To get on our Email list, send your contact info via Email to contact@cybersecuritycenter.tamu.edu. We will not distribute your information to anyone. We promise to protect your privacy, and limit Email to no more than one message per month. To learn more about partnering with the Cybersecurity Center, call us at 979-555-1212.