



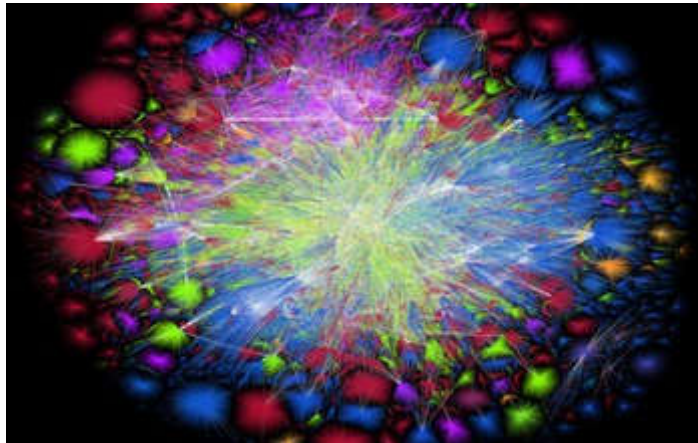
National Science Foundation
WHERE DISCOVERIES BEGIN



News Release 15-126

NSF awards \$74.5 million to support interdisciplinary cybersecurity research

Investment includes 257 new projects involving researchers in 37 states



NSF-supported cybersecurity research builds the foundational knowledge needed to protect cyberspace.

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October 7, 2015

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The National Science Foundation (NSF) has long supported cybersecurity research to protect the frontiers of cyberspace. NSF investments in basic research have resulted in innovative ways to secure information and ensure privacy on the Internet and have led to algorithms that form the basis for electronic commerce, software security bug detection, spam filtering, and much more.

NSF today continued its commitment to securing cyberspace by awarding \$74.5 million in research grants through the NSF Secure and Trustworthy Cyberspace (SaTC) program.

New projects aim to enhance security practices and technologies, bolster education and training in cybersecurity, establish a science of cybersecurity and transition promising cybersecurity research into practice.

"NSF-supported cybersecurity research builds the foundational and multidisciplinary knowledge bases needed to protect us in cyberspace--an environment that has expanded beyond computers to encompass many aspects of our physical world and critical infrastructure," said Jim Kurose, NSF assistant director for Computer and Information Science and Engineering.

The SaTC program supports research that addresses vulnerabilities in hardware, software and networking technologies. It also supports research exploring the human components of cybersecurity, as well as efforts to enhance cybersecurity education to supply the nation with expertise to build and defend tomorrow's cyber-systems.

While many of the awards target today's cybersecurity challenges, others look toward the future with the goal of creating robust solutions that are unbreakable by design.

In total, the SaTC investments include a portfolio of 257 new projects to researchers in 37 states. The projects support early-career investigators and early-concept grants, as well as multi-institutional, broad-scope research.

The largest, multi-institutional awards (listed below) include research to better understand and offer reliability to new forms of digital currency known as cryptocurrencies, which use encryption for security; invent new technology to broadly scan large swaths of the Internet and automate the detection and patching of vulnerabilities; and establish the "science of censorship resistance" by developing accurate models of the capabilities of censors.

The Science and Applications of Crypto-Currency

http://www.nsf.gov/awardsearch/showAward?AWD_ID=1518765&HistoricalAwards=false,
Principal Investigators: Elaine Shi, University of Maryland; Emin Sirer, Cornell University; Dawn Song, University of California, Berkeley

Internet-Wide Vulnerability Measurement, Assessment and Notification

http://www.nsf.gov/awardsearch/showAward?AWD_ID=1518921&HistoricalAwards=false,
Principal Investigators: Michael Bailey, University of Illinois at Urbana-Champaign; J. Alex Halderman, University of Michigan Ann Arbor; Vern Paxson, University of California, Berkeley

Towards a Science of Censorship Resistance

http://www.nsf.gov/awardsearch/showAward?AWD_ID=1518918&HistoricalAwards=false,
Principal Investigators: Vern Paxson, University of California, Berkeley; Jedidiah Crandall, University of New Mexico; Nick Feamster, Princeton University; Phillipa Gill, SUNY at Stony Brook

This year's SaTC awards continue to acknowledge the complex interactions between people and technology as a key part of cybersecurity and support interdisciplinary research that aims to address security and privacy by better understanding these relationships.

"No solution for securing cyberspace is complete without the integration of research that examines how people behave in the complicated systems that constitute the Internet--from the users of Internet commerce to the attackers who endanger networks," said Fay Lomax Cook, NSF assistant director for Social, Behavioral & Economic Sciences. "Technology and behavior are intrinsically linked in the world of cybersecurity, and NSF's support for interdisciplinary research reflects that."

The awards made this year also include 11 grants with a particular focus on addressing the cybersecurity educational and workforce development needs of the nation. These include the creation of new training and education programs and the development of effective cybersecurity pedagogy.

Among the projects in this track are cybersecurity training for workers in hospitals, virtual environments in which students can experiment with and learn about cybersecurity practices, and competitions and challenges to enhance and broaden cybersecurity education.

"Cybersecurity is a rapidly expanding field, and the educational programs NSF supports will help develop the computer scientists, engineers, and creators of tomorrow's solutions," said Joan Ferrini-Mundy, NSF assistant director for Education and Human Resources. "At a time when an educated, experienced workforce is among the most precious resources in the world of cybersecurity, NSF facilitates programs that will generate the architects of a more secure Internet."

Because many aspects of cybersecurity can be implemented by industry, the program supports both a Secure, Trustworthy, Assured and Resilient Semiconductors and Systems (STARSS) perspective focused on hardware research in partnership with the Semiconductor Research Corporation (SRC), and a Transition to Practice (TTP) track focused exclusively on transitioning existing research into practice.

See the [full list of active SaTC awards <http://1.usa.gov/1FJ4eUY>](http://1.usa.gov/1FJ4eUY).

The awards being announced today are part of a portfolio of approximately \$160 million invested in cybersecurity research and education across the agency in fiscal year 2015.

-NSF-



Assistant Professor Philippa Gill of Stony Brook University is among the 2015 SaTC awardees.

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NSF supports cybersecurity education research and cybersecurity training for students.

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Understanding the complex interactions between people and technology is a key part of cybersecurity.

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Related Websites

Secure and Trustworthy Cyberspace (SaTC):

<http://www.nsf.gov/pubs/2015/nsf15575/nsf15575.htm>

<http://www.nsf.gov/pubs/2015/nsf15575/nsf15575.htm>

The National Science Foundation (NSF) is an independent federal agency that supports fundamental research and education across all fields of science and engineering. In fiscal year (FY) 2018, its budget is \$7.8 billion. NSF funds reach all 50 states through grants to nearly 2,000 colleges, universities and other institutions. Each year, NSF receives more than 50,000 competitive proposals for funding and makes about 12,000 new funding awards.

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