## Sons Science of Security and Privacy

SCIENCE OF SECURITY

# Science of Security Research Initiative

The National Security Agency Science of Security (SoS) Research Initiative strives to establish a self-sustaining discipline that develops scientific foundations needed to mature the cyber defense corpus to meet the ever rising cyber threats. The Initiative has three main thrusts: first, engaging the academic community for foundational research; second, promoting rigorous scientific principles in research; and third, growing the SoS Community.

More information about all of the activities associated with the Science of Security (SoS) initiative over the past year can be found in the 2015 SoS Annual Report: http://cps-vo.org/sos/annualreport2015





 Generation Information Technology (ITng) with its security research and translation services, NCSU is we advanced analytics toward such critical areas as building the scientific underpinnings to software security

 Activity Stream

Laurie Williams 🕾 is a Professor in the Computer Science Department of the College of Engineering at North Carolina State University (NCSU). Her research focuses on software security particularly in relation to healthcare IT; agile software development practices and processes; software reliability, software testing and analysis; open source software development; and broadening participation and increasing retention in computer science. Laurie has more than 170 refereed publications.









UNIVERSITY OF MARYLAND

> JMD'S SCIENCE OF SECURITY LABLET INITIATIVE The UMD lablet leverages the resources of the Maryland Cybersecurity Center to bring together 15 University of Maryland five different departments across campus, in collaboration with 6 external faculty members from other universities, to for developing the scientific foundations for cybersecurity. Our lablet has particular strengths in understanding the role of has in relation to cybersecurity, from the perspectives of both cyberattackers as well as legitimate users, in developing theory foundations and mathematical models for cybersecurity; and in carrying out empirical studies to measure, characterize, understand both existing cybersecurity threats and the effectiveness of current defenses.

an Katz is the director of the Maryland Cybersecurity Center⊕, as well as a professor in the Department of Co Iniversity of Maryland with a joint appointment in UMIACS.⊕, He received undergraduate degrees in chemistry IT in 1996, and a PhD in computer science from Columbia University in 2002. He has held visiting appointment s, CA), Eccle Normale Superieure (Pars, Franco), and the IBM T-J. Weston Research Center (Hawthome, NY) or of the DARPA Computer Science Study Group from 2009-2011.



Carnegie Mellon

University

Visit Sos-Vo.org

Share and Survey Research

Discover Resources

**Connect to Others** 



#### http://cps-vo.org/NSA-SoS-research#Lablets



The SoS Project on the Science of SecUre and REsilient Cyber-Physical Systems (SURE) is focused on having the academic community (with Vanderbilt University being a focal point) develop scientific foundations and tools for designing, building, and assuring cyber-physical systems/Internet-of-Things that can maintain essential system properties in the presence of adversaries.

http://sos-vo.org/sure

**The Best Scientific Cybersecurity Paper Competition** is sponsored by the NSA Research Directorate to promote rigorous research methods by identifying and highlighting excellence. The competition is open to all authors and nominated papers are evaluated by a panel of distinguished experts in cybersecurity. Winners are invited to NSA for recognition and to present their research.

http://sos-vo.org/papercompetition

### FIVE HARD PROBLEMS

SCALABILITY & COMPOSABILITY

POLICY-GOVERNED SECURE COLLABORATION

SECURITY-METRICS-DRIVEN EVALUATION, DESIGN, DEVELOPMENT, & DEPLOYMENT

UNDERSTANDING & ACCOUNTING FOR HUMAN BEHAVIOR

RESILIENT ARCHITECTURES

http://sos-vo.org/hardproblems



Symposium & Bootcamp on the Science of Security

HotSoS

Hot-SoS is the premier annual public event of the SoS Community that supports all tenants of SoS. It draws the diverse research community (academia, government and industry) to presentations of new SoS Research, workshops, and the ability to engage with other SoS members. As the event is co-sponsored with ACM, accepted research is peer-reviewed and published by ACM.

http://hot-sos.org

## SoS Impact

139 Institutions | 5 Continents | 24 Countries

