

SCIENCE OF SECURITY

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Current Research

NSA SoS Lablets

The Lablets are focused on the development of a Science of Security (SoS) and a broad, self-sustaining community effort to advance it.

NSF TRUST Center

TRUST is focused on the development of cyber security science and technology that will radically transform the ability of organizations to design, build, and operate trustworthy information systems for the nation's critical infrastructure.

AFOSR MURI

The goal of this program is to provide the science foundation to enable development of advanced cyber security methods, models, and algorithms to support future Air Force systems.

ASD(R&E) JASON Study

JASON was requested by the DoD to examine the theory and practice of cyber-security, and evaluate whether there are underlying fundamental principles that would make it possible to adopt a more scientific approach, identify what is needed in creating a science of cyber-security, and recommend specific ways in which scientific methods can be applied.

Upcoming Events

Twelfth Annual High Confidence Software and Systems Conference

Date: 05/06/12 - 05/11/12

Third Science of Security Lablet Meeting

Date: 07/17/12

The Second International Workshop on Safety and Security in Cyber-Physical Systems

Date: 06/20/12 - 06/22/12

First Security and Trustworthy Computing Principle Investigators Meeting

Date: 11/27/12 - 11/29/12

First Science of Security Principle Investigators Meeting

Date: 11/29/12 - 11/30/12

Highlights



Nicol leads new Science of Security "Lablet" at Illinois

The University of Illinois at Urbana-Champaign, Carnegie Mellon University, and North Carolina State University are each receiving an initial \$1 million in grant funds from the U.S. National Security Agency (NSA) to stimulate the creation of a more scientific basis for the design and analysis of trusted systems.

IEEE Security & Privacy

This special issue of *IEEE Security & Privacy* presents three articles illustrating and reflecting on aspects of foundational science for computer security. We're a long way from establishing a science of security comparable to the traditional physical sciences, and even from knowing whether such a goal is even achievable. Nevertheless, the articles in this special issue hint at the possibility and promise of foundational approaches to security.

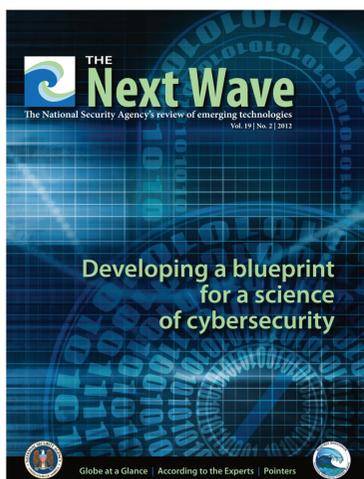
Security & Privacy, IEEE | Volume: 9, Issue 3
<http://ieeexplore.ieee.org/xpl/tocresult.jsp?isnumber=5772950>



The Next Wave

A recent issue of *The Next Wave* is focused upon the important topic of security science. Included are articles from six noted experts in the area of security science. The capstone article, contributed by Fred Schneider of Cornell University, methodically constructs a "blueprint" for security science.

Developing a robust security science will undoubtedly require a long-term effort that is both broad based and collaborative. It will also demand resources well beyond those available to any single organization.



Vision and Goals

While certain subfields of security have a strong scientific basis (e.g., cryptography, formal methods), there is no comprehensive scientific basis for constructing systems that are trustworthy by design. This lack of a disciplined and rigorous scientific basis profoundly limits our ability to design, deploy, and trust most large-scale and cyber-physical systems (CPS). A foundational science of security is needed now. To this end, the CPS-VO Science of Security Group will provide a portal for community awareness, collaboration, and information all directed toward the maturing of the scientific basis for security.