

# NSA Science of Security Research Initiative

Submitted by Katie Dey on Wed, 08/01/2012 - 9:19am

## Science of Security and Privacy Research Initiative

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The Science of Security and Privacy (SoS) Initiative at the National Security Agency Research Directorate promotes foundational cybersecurity science that is needed to mature the cybersecurity discipline and to underpin advances in cyberdefense. Beginning in 2012, one part of the initiative is to fund foundational research at "Lablets." With emphasis on building a community, each lablet created partnerships with other universities called "Sub-Lablets." Science of Security researchers often freely collaborated with researchers in other institutions worldwide. The SURE project was founded to investigate cybersecurity in the cyber-physical systems realm and ran from 2014 to 2018. In 2018, CPS research was folded into the Lablet Research.

The SoS Initiative has defined [5 Hard Problems](#) as the research areas for the initiative and community to work on. The problems are: 1) Resilience Architectures, 2) Scalability and Composability, 3) Metrics, 4) Secure Collaboration and 5) Human Behavior.

**Annual Reports:** [Index](#) | [2015](#) | [2016](#) | [2017](#) | [2018](#) | [2019](#)

## LABLETS

### Mission and Goals

Critical cyber systems must inspire trust and confidence, protect the privacy and integrity of data resources, and perform reliably. To tackle the ongoing challenges of securing tomorrow's systems we must develop the scientific underpinnings of security to understand what is possible in that domain as well as develop a collaborative community of researchers from government, industry and academia.

As part of that effort NSA began funding academic ?Lablets? focused on the development of a Science of Security (SoS) and a broad, self-sustaining community effort to advance it. A major goal is the creation of a unified body of knowledge that can serve as the basis of a trust engineering discipline, curriculum, and rigorous design methodologies. The results of SoS Lablet

research will be extensively documented and widely distributed through the SoS Virtual Organization. Our intention is for the SoS VO to be our primary resource for describing Lablet research, and for creating a broad community effort to advance security science.

## Currently Funded Research Lablets

[Carnegie Mellon University](#)  
[International Computer Science Institute](#)  
[North Carolina State University](#)  
[University of Illinois at Urbana-Champaign](#)  
[University of Kansas](#)  
[Vanderbilt University](#)

## NSA Lablet Point of Contact

[Heather Lucas](#) - NSA Lablet Program Lead

## SoS Quarterly Lablet PI Meetings Index

Agenda and presentations from past quarterly lablet meetings can be found [here](#).

## SoS Community Support

The SoS Initiative supports the growth and vibrancy of the Security Science Community. Besides the funded Lablets (see above), the Initiative has the following efforts.

- [Competitions](#)
- [HoTSoS](#) -- SoS Public Annual Meeting
- [Database of SoS related publications](#)
- [Selected Notable Publications](#)

## Recent Activity

- SoS [Winter 2019 Quarterly Lablet PI Meeting](#) at ICSI: January 10-11, 2019
- SoS [Winter 2017 Quarterly Lablet PI Meeting](#) at NCSU February 1-2, 2017
- SoS [Fall 2016 Quarterly Lablet PI Meeting](#) at NSA November 2-3, 2016
- SoS [Summer 2016 Quarterly Lablet PI Meeting](#) at UIUC held July 27-28, 2016
- [HotSoS 2016](#) held April 20-21, 2016 at Carnegie Mellon University in Pittsburgh, PA
- SoS [Winter 2016 Quarterly Lablet PI Meeting](#) at NCSU held February 2-3, 2016
- SoS [Fall 2015 Quarterly Lablet PI Meeting](#) at UMD held October 26-27, 2015
- [CMU SoS 2015 Quarterly Lablet PI Meeting](#) held July 14-15, 2015

- [HotSoS 2015](#) held April 21-22, 2015. Agenda and Artifacts are posted.
- [NCSU SoS 2015 Quarterly Lablet PI Meeting](#) held January 27-28, 2015. Agenda with Artifacts Posted
- [UMD SoS 2014 Quarterly Lablet PI Meeting](#) held October 27-28, 2014. Agenda with Artifacts is Posted.
- [CMU SoS 2014 Quarterly Lablet PI Meeting](#) held July 1-2, 2014. Agenda with Artifacts is Posted.
- UMD Science of Security Lablet Research Initiative Forum topic Lablet study on user behaviors + software updates - [See Forum](#)
- Illinois receives \$2.1 million from NSA to help advance security of cyber systems, Dated 19 May 2014 - [To View](#)
- Press Release: Carnegie Mellon Opens Science of Security Lablet with Support from National Security Agency, Dated 12 May 2014 - [To View](#)
- UMD Receives \$4.5M for Science of Security "Lablet", Dated 9 May 2014 - [To View](#)
- NSA Press Release: National Security Agency Announces the Creation of New "Lablets" in Support of Science of Security, Dated 22 April 2014 - [To View](#)

## SURE PROJECT



### and Goals

The project on the [System Science of SecUrity and REsilience for cyber-physical systems](#) (SURE) was established in 2014, with the goal of developing foundations and tools for designing, building, and assuring cyber-physical systems (CPS) that can maintain essential system properties in the presence of adversaries. The technology base of SURE will provide CPS designers and operators with models, methods, and tools that can be integrated with an end-to-end model-based design flow and tool chain.

## Recent Activity:

- [SURE Annual Review Meeting](#) held November 18, 2016
- [SURE Mid-Year Review Meeting](#) held March 17-18, 2015 in Nashville, TN
- [SURE Kick-off Meeting](#) held October 26, 2014 in Laurel, Maryland



[Science of Security](#)

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