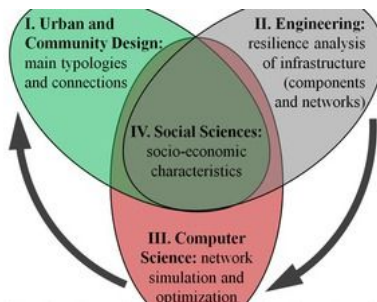




News Release 16-119

NSF awards \$22.7 million to strengthen nation's infrastructure

Investment to support research in building resilient, interdependent systems able to withstand disasters, disruptions



The CRISP projects weave together knowledge and methods from across disciplines.

[Credit and Larger Version \(/news/news_images.jsp?cntn_id=189956&org=NSF\)](#)

October 5, 2016

This material is available primarily for archival purposes. Telephone numbers or other contact information may be out of date; please see current contact information at [media contacts \(/staff/sub_div.jsp?org=olpa&orqid=85\)](#).

The delivery of essential services – whether in food, water, health or emergency response – relies increasingly upon a complex, interconnected system of critical infrastructure. Ensuring these interdependent systems continue to operate during disasters and other disruptive events is crucial to maintaining public health and safety.

Today, NSF announces \$22.7 million in new investments to promote better understanding and functioning of these infrastructures in an effort to improve their resilience. The investments will target issues of design, operation, maintenance and restoration of services in the face of new and evolving hazards, whether natural, technological or human-induced.

"Today's critical infrastructure systems rely on each other in order to function," says Grace Wang, acting NSF assistant director for Engineering. "This creates a complex set of interdependencies that must be understood, designed and managed to provide high-quality, resilient, accessible and affordable infrastructure services."

Funded through the [Critical Resilient Interdependent Infrastructure Systems and Processes \(CRISP\)](#) <https://nsf.gov/funding/pgm_summ.jsp?pims_id=505180> program, this year's 15 new projects <<https://www.nsf.gov/awardsearch/advancedSearchResult?PIId=&PIFirstName=&PILastName=&PIOrganization=&PIState=&PIZip=&PICountry=&ProgOrganization=&ProgEleCode=&BooleanElement=All&ProgRefCode=&Boolean>> (through 28 awards) build on [NSF's CRISP investments in 2015](#) <https://www.nsf.gov/news/news_summ.jsp?cntn_id=136266>, the first year of the program. The projects address a broad range of issues that cut across the human and technological features of critical infrastructures. They incorporate possible "tipping point" behavior and the role of resource capacity and sharing in the steady provision of services following disasters.

"The projects being funded through the CRISP program are making it possible to deeply embed computation into physical systems and improve the safety, security and resilience of our critical infrastructures," says Jim Kurose, NSF's assistant director for Computer and Information Science and Engineering. "These 'smart' critical infrastructures will in turn positively impact many aspects of our daily lives and have profound benefits for our nation."

The strong connections – known as interdependencies – among [critical infrastructures](#) <<https://www.dhs.gov/critical-infrastructure-sectors>> mean that disturbances in one may lead to cascading effects that compromise others. NSF-funded investigators will examine how interdependencies can be proactively managed across a broad range of systems and hazards.

"Individuals, their communities and social networks, the policies and decision-making that impact them, as well as an array of economic and legal factors can either help or hinder the successful creation and performance of resilient complex adaptive systems like infrastructure," says Kellina Craig-Henderson, NSF's deputy assistant director for Social, Behavioral and Economic Sciences.

CRISP projects weave together knowledge and methods from engineering, the computational sciences and the social and behavioral sciences to create new approaches and engineering solutions for the design and operation of critical infrastructures. The projects consider how planning, response and recovery activities all figure into infrastructure resilience, whether in coastal or inland communities, and regardless of the threats communities face.

The NSF Directorates for Engineering, Computer and Information Science and Engineering, and Social, Behavioral and Economic Sciences collaborated to support the Fiscal Year 2016 CRISP investments.

-NSF-

Media Contacts

Sarah Bates, NSF, (703) 292-7738, sabates@nsf.gov (<mailto:sabates@nsf.gov>)

Related Websites

CRISP solicitation: <https://www.nsf.gov/pubs/2016/nsf16519/nsf16519.htm> <<https://www.nsf.gov/pubs/2016/nsf16519/nsf16519.htm>>

FY 2015 CRISP news release: https://www.nsf.gov/news/news_summ.jsp?cntn_id=136266 <https://www.nsf.gov/news/news_summ.jsp?cntn_id=136266>

NSF special report Life Savers: Resilient designs to weather hazards: <https://www.nsf.gov/eng/special/lifesavers/> <<https://www.nsf.gov/eng/special/lifesavers/>>

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.

[Get News Updates by Email <http://service.govdelivery.com/service/subscribe.html?code=USNSF_51>](http://service.govdelivery.com/service/subscribe.html?code=USNSF_51)

Useful NSF Web Sites:

NSF Home Page: <https://www.nsf.gov> <<https://www.nsf.gov>>

NSF News: [https://www.nsf.gov/news/ \(/news/\)](https://www.nsf.gov/news/)

For the News Media: [https://www.nsf.gov/news/newsroom.jsp \(/news/newsroom.jsp\)](https://www.nsf.gov/news/newsroom.jsp)

Science and Engineering Statistics: [https://www.nsf.gov/statistics/ \(/statistics/\)](https://www.nsf.gov/statistics/)

Awards Searches: [https://www.nsf.gov/awardsearch/ \(/awardsearch/\)](https://www.nsf.gov/awardsearch/)

National Science Foundation, 2415 Eisenhower Avenue, Alexandria, Virginia 22314, USA Tel: (703) 292-5111, FIRS: (800) 877-8339 | TDD: (800) 281-8749