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NSF announces \$19.5M in awards to support fundamental research to advance the nation's local cities and communities

First-ever awards through Smart & Connected Communities program seek to address transportation, infrastructure, health and other rural and urban challenges



Lead PI Branko Kerkez and his research team install stormwater sensors and control valves.

[Credit and Larger Version \(/news/news_images.jsp?cntn_id=243312&org=NSF\)](/news/news_images.jsp?cntn_id=243312&org=NSF)

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The National Science Foundation (NSF) has long been a leader in supporting fundamental research to equip U.S. cities and communities with more responsive and adaptive technologies and services. Today, NSF's [Smart & Connected Communities \(S&CC\) program <https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505364>](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505364) announces its first round of awards totaling approximately \$19.5 million. This funding will support 38 projects involving researchers at 34 institutions across the nation.

Smart and connected communities successfully integrate people with information and communication technologies to improve economic opportunity and growth, safety and security, health and wellness, and overall quality of life. Successfully achieving this vision requires advanced understanding of the physical, social and technical aspects of our local cities and communities.

"The Smart & Connected Communities program uniquely brings together researchers across a wide range of academic disciplines to closely collaborate with diverse stakeholders in local cities and communities," said Jim Kurose, NSF assistant director for Computer and Information Science and Engineering (CISE). "The collaborative research undertaken by these groups will address challenges faced by our cities and communities, helping to transform communities and improve people's lives."

This year's awards address a range of applications, including public safety, water systems, community health and wellness, energy, transportation, infrastructure, manufacturing, food systems and rural and urban planning.

Many of the S&CC projects announced today focus on building capacity for long-term research innovation. These awards support planning and coordinating activities to grow interdisciplinary and cross-sector teams that in turn can foster new lines of research with meaningful community engagement for years to come.

Other awards aim to pursue visionary and integrative research agendas. Through these projects, academic researchers substantively engage with local community stakeholders to advance understanding, development and implementation of S&CC solutions from both social and technological perspectives.

Below are examples of new S&CC projects, their principal investigators and their home institutions.

[Sociotechnical Systems to Enable Smart and Connected Energy-Aware Residential Communities](https://www.nsf.gov/awardsearch/showAward?AWD_ID=1737591&HistoricalAwards=false)
<https://www.nsf.gov/awardsearch/showAward?AWD_ID=1737591&HistoricalAwards=false>, Panagiota Karava, Purdue University

Karava leads multidisciplinary research team focused on large-scale data analytics and predictive modeling to provide residents with information and feedback to optimize and incentivize their energy management. The project aims to foster energy-aware communities that can be scaled across the U.S. The researchers will test their model in several hundred households through a partnership with the Indiana Housing and Community Development Agency.

[Overcoming Social and Technical Barriers for the Broad Adoption of Smart Stormwater Systems](https://www.nsf.gov/awardsearch/showAward?AWD_ID=1737432&HistoricalAwards=false)
<https://www.nsf.gov/awardsearch/showAward?AWD_ID=1737432&HistoricalAwards=false>, Branko Kerkez, University of Michigan, Ann Arbor

Kerkez partner with engineers, social scientists, computer scientists and environmental experts in collaboration with decision-makers and local residents across four U.S. communities, prototyping the development and use of smart stormwater systems. These systems will be able to anticipate changes in weather and the urban landscape, and adapt their operation to drastically improve community resilience to floods and changing water quality.

[Connecting the Smart-City Paradigm with a Sustainable Urban Infrastructure Systems Framework to Advance Equity in Communities](https://www.nsf.gov/awardsearch/showAward?AWD_ID=1737633&HistoricalAwards=false)
<https://www.nsf.gov/awardsearch/showAward?AWD_ID=1737633&HistoricalAwards=false>, Shashi Shekhar, University of Minnesota

Shekhar conducts research in the cities of Minneapolis and St. Paul, Minnesota, and Tallahassee, Florida, leading to a smart, urban infrastructure systems framework that optimizes the spatial deployment of new infrastructures in cities and communities. The goal of this effort is to improve well-being, health and environmental sustainability outcomes for all residents.

A complete list of the S&CC awards announced today is available [online \(/cgi-bin/good-bye?http://bit.ly/SandCC\)](http://bit.ly/SandCC).

The S&CC program is part of NSF's multipronged strategy to invest in foundational research and education on smart and connected communities. [Learn more <https://www.nsf.gov/cise/scc/>](https://www.nsf.gov/cise/scc/) about how NSF is working collaboratively with researchers and community leaders to help enable 21st century cities and communities.

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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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