



National Science Foundation
WHERE DISCOVERIES BEGIN



News Release 17-002

White House honors 19 NSF-supported early-career researchers

NSF-nominated recipients were among 102 receiving top federal award



PECASE awards went to NSF CAREER awardees.

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President Obama has named 102 scientists and engineers, including 19 nominated by the National Science Foundation (NSF), as recipients of the Presidential Early Career Award for Scientists and Engineers (PECASE).

PECASE is the U.S. government's highest award for scientists and engineers in the early stages of their research careers and who show the potential for exceptional leadership.

"To enhance our role as a global innovation leader, the United States needs scientists and engineers who can combine research excellence with the ability to serve as leaders within their fields," said NSF Director France Córdova. "These recipients have demonstrated that they are talented researchers, as well as dedicated mentors, role models and teachers. NSF is pleased to recognize them, and we look forward to seeing their continued discoveries."

Awardees demonstrated the ability to broadly advance science and the missions of participating federal agencies.

"I congratulate these outstanding scientists and engineers on their impactful work," [President Obama said <https://www.whitehouse.gov/the-press-office/2017/01/09/president-obama-honors-federally-funded-early-career-scientists>](https://www.whitehouse.gov/the-press-office/2017/01/09/president-obama-honors-federally-funded-early-career-scientists). "These innovators are working to help keep the United States on the cutting edge, showing that Federal investments in science lead to advancements that expand our knowledge of the world around us and contribute to our economy."

The NSF-nominated awardees came from universities across the country. All have received five-year grants through the NSF Faculty Early Career Development (CAREER) program after their research proposals went through NSF's rigorous peer Merit Review process.

The White House Office of Science and Technology Policy coordinates the PECASE awards, which were established in 1996. Awardees are selected on the basis of two criteria: pursuit of innovative research at the frontiers of science and technology and a commitment to community service as demonstrated through scientific leadership, public education or community outreach.

The NSF-nominated awardees are:

[Alicia Alonzo <https://www.nsf.gov/awardsearch/showAward?AWD_ID=1253036>](https://www.nsf.gov/awardsearch/showAward?AWD_ID=1253036), Michigan State University

For her outstanding research on learning progressions in physics. And for her community service commitment to helping high school teachers use formative assessments in their classrooms to enhance student learning in summer professional development workshops and undergraduate courses.

[Randy Ewoldt <https://www.nsf.gov/awardsearch/showAward?AWD_ID=1351342>](https://www.nsf.gov/awardsearch/showAward?AWD_ID=1351342), University of Illinois at Urbana-Champaign

For fundamental research on complex fluids to design new soft materials. And for creative educational activities that engage non-engineering students and the public with engineering.

[Emily Fox <https://www.nsf.gov/awardsearch/showAward?AWD_ID=1338054>](https://www.nsf.gov/awardsearch/showAward?AWD_ID=1338054), University of Washington

For her groundbreaking work in large-scale Bayesian modeling and computational approaches to time series and longitudinal data analysis. And for outstanding outreach and mentoring of women in computer science and statistics.

[Jacob Fox <https://www.nsf.gov/awardsearch/showAward?AWD_ID=1554697>](https://www.nsf.gov/awardsearch/showAward?AWD_ID=1554697), Stanford University

For his work on extending the regularity method to sparse graphs and hypergraphs. And for taking a leadership role in the combinatorics community, mentoring high school students in the MIT PRIMES activity, training graduate students and serving as adviser for MIT undergraduate students.

[Eric Hudson <https://www.nsf.gov/awardsearch/showAward?AWD_ID=1255526>](https://www.nsf.gov/awardsearch/showAward?AWD_ID=1255526), University of California, Los Angeles

For his work using lasers to probe and control atoms and molecules, paving the way for breakthroughs anticipated in the atomic, molecular and nuclear physics communities. And for working to develop a new experience-based curriculum for K-12 students and fostering the participation of underrepresented minorities in science.

[Shawn Jordan <https://www.nsf.gov/awardsearch/showAward?AWD_ID=1351728>](https://www.nsf.gov/awardsearch/showAward?AWD_ID=1351728), Arizona State University

For outstanding research developing new engineering learning theory that is culturally conceptualized in Navajo community contexts. And for developing, piloting and assessing culturally contextualized engineering-design curricula in Navajo schools.

Ahmed Khalil <https://www.nsf.gov/awardsearch/showAward?AWD_ID=1350949>, Boston University

For his innovative work addressing the role of aggregation prone proteins in phenotype switching and fitness using tools in systems and synthetic biology. And for developing quantitative biology educational opportunities at the kindergarten through graduate levels.

Oleg Komogortsev <https://www.nsf.gov/awardsearch/showAward?AWD_ID=1250718>, Texas State University, San Marcos

For his groundbreaking research on the muscle structure of the eye as a basis for identification, which is transforming approaches to security and medicine. And for his unparalleled outreach on STEM research and education to large populations of underrepresented minorities.

John Kovac <https://www.nsf.gov/awardsearch/showAward?AWD_ID=1255358>, Harvard University

For developing pioneering advances about the universe's birth and expansion through observations, large-scale data analysis, simulation and shared cyberinfrastructure. And for his dedication to research reproducibility through software/data sharing as well as education through innovative curricula for students.

B er nice Mettler <https://www.nsf.gov/awardsearch/showAward?AWD_ID=1254906>, University of Minnesota and iCueMotion, LLC

For outstanding research pioneering new methods for capturing the interaction between human operators and guided vehicles. And for STEM educational activities focused on female students.

Jelani Nelson <https://www.nsf.gov/awardsearch/showAward?AWD_ID=1350670>, Harvard University

For pioneering research in techniques that extract meaningful insights from massive datasets, with significant impacts on industry. And for his unparalleled dedication to education and broadening participation of future scientists.

Elizabeth Nolan <https://www.nsf.gov/awardsearch/showAward?AWD_ID=1352132>, Massachusetts Institute of Technology

For discovery of the basis for specific zinc-protein interactions with important consequences for the immune response. And for inaugurating a program of research experiences for undergraduates to specifically address the scientific education pipeline's loss of women who attend regional public universities but do not subsequently pursue doctoral studies in chemistry and related disciplines.

Michael Rotkowitz <https://www.nsf.gov/awardsearch/showAward?AWD_ID=1351674>, University of Maryland, College Park

For pioneering research on decentralized implementable control of massively interconnected systems. And for education of undergraduate and high school students using innovative engineering test beds.

Andrea Sweigart <https://www.nsf.gov/awardsearch/showAward?AWD_ID=1350935>, University of Georgia

For significant contributions toward understanding the molecular, genetic and evolutionary mechanisms that underlie the origin of species. And for her work engaging high school teachers in evolutionary genetics research.

[Chuanbing Tang <https://www.nsf.gov/awardsearch/showAward?AWD_ID=1252611>](https://www.nsf.gov/awardsearch/showAward?AWD_ID=1252611), University of South Carolina

For pioneering sustainability research in designing and creating renewable polymeric and composite materials from biomass. And for wide-ranging educational and outreach activities which include extensive mentoring at all levels and international research experiences for undergraduate and graduate students.

[Aradhna Tripathi <https://www.nsf.gov/awardsearch/showAward?AWD_ID=0949191>](https://www.nsf.gov/awardsearch/showAward?AWD_ID=0949191), University of California, Los Angeles

For her cutting edge work on novel stable isotope techniques to address pressing questions pertaining to global change and Earth systems history. And for her integrated plan to engage members of underrepresented communities in science.

[Franck Vernerey <https://www.nsf.gov/awardsearch/showAward?AWD_ID=1350090>](https://www.nsf.gov/awardsearch/showAward?AWD_ID=1350090), University of Colorado, Boulder

For outstanding research that will enable the controlled growth of human tissue through computational scaffold design. And for educational activities focused on exposing undergraduate and high school students to the principles of simulation-based material design.

[Juan Pablo Vielma Centeno <https://www.nsf.gov/awardsearch/showAward?AWD_ID=1351619>](https://www.nsf.gov/awardsearch/showAward?AWD_ID=1351619), Massachusetts Institute of Technology

For outstanding research on very large-scale optimization problems. And for educational activities focused on interactive learning for undergraduate students.

[Makeba Wilbourn <https://www.nsf.gov/awardsearch/showAward?AWD_ID=1352672>](https://www.nsf.gov/awardsearch/showAward?AWD_ID=1352672), Duke University

For her rigorous research that addresses both basic and applied questions about how societal factors influence children's cognitive development. And for her energetic, creative and highly impactful teaching, mentoring and community outreach.

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Media Contacts

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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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