



NSF & NEW JERSEY

FAST FACTS

\$138,801,000

Total NSF awards to New Jersey in FY19

\$130,202,000

Amount invested in fundamental research in New Jersey in FY19

\$8,599,000

Amount invested in STEM education in New Jersey in FY19

\$2,862,000

Amount invested in New Jersey startups through NSF's small business program in FY19

TOP 3 NSF-FUNDED ACADEMIC INSTITUTIONS FOR FY19

\$57,074,000

Princeton University

\$36,661,000

Rutgers University

\$12,245,000

New Jersey Institute of Technology

In Fiscal Year (FY) 2019, the **National Science Foundation made \$138,801,000 in awards** to New Jersey in support of fundamental research, advanced technical education, entrepreneurial training, STEM teacher training, small business development, major research instrumentation, and more.

DID YOU KNOW?

DISCOVERY | The Large Hadron Collider (LHC), located at the European Organization for Nuclear Research (CERN) in Geneva, Switzerland, is the world's largest and most powerful particle accelerator. NSF-supported researchers at **Princeton University** conduct research in experimental high energy physics using the general-purpose detector, the Compact Muon Solenoid (CMS) detector. Members of the high energy physics group at **Rutgers University** have been crucial to the construction, maintenance, and continued improvement of the device itself. NSF also provides funding to 29 U.S. universities to maintain the operation of U. S.-supplied components of the CMS detector and its supporting software and computing systems, carry out the planning and development that will enable future enhancements to CMS's detection capabilities, and promote science education and outreach. The CMS experiment is one of the largest international scientific collaborations in history, involving 5000 particle physicists, engineers, technicians, students and support staff from 200 institutes in 50 countries.

STEM WORKFORCE DEVELOPMENT | With an emphasis on two-year colleges, NSF's Advanced Technological Education (ATE) program focuses on the education of technicians for the high-technology fields that drive the nation's economy. The ATE program involves partnerships between academic institutions and industry to promote improvement in the education of science and engineering technicians at the undergraduate and secondary school levels. **The Unmanned Aircraft Systems Operations and Maintenance Training Project at Atlantic Cape Community College** aims to advance technician education and training in the rapidly evolving and critically important field of small commercial unmanned aircraft systems (UAS). The project will define the skills and knowledge needed to enable a technician to maintain, upgrade or repair a small UAS, and will develop an innovative academic program that promotes the requisite student learning. Drone manufacturers and employers will provide input to ensure that the program educates skilled technicians who can comply with Federal Aviation Administration regulations for the safe operation of small drones in the national airspace system.

SUPPORTING STUDENTS | **Union County College** is one of the first institutions in the country to receive an award under NSF's Improving Undergraduate STEM Education: Hispanic-Serving Institutions (HSIs) Program. The program aims to build capacity and increase retention and graduation rates for STEM students at HSIs. The Union County College project aims to provide students with research opportunities that increase student engagement, critical thinking skills, and retention and graduation rates, as well as their transfer into a STEM major at a four-year institution.

SCIENCE & ENGINEERING INDICATORS | **5.22% of the New Jersey workforce is employed in S&E occupations**, and 10.23% of New Jersey business establishments are industries with high employment in science, engineering, and technology (SET) occupations.⁺



Houses damaged at Ortley Beach, New Jersey, after Hurricane Sandy. Researchers at Princeton and Rutgers universities and the Woods Hole Oceanographic Institution have developed a computer simulation that estimates that storm-related flooding on the New York City coastline, similar in scale to what was seen during Sandy, is likely to become more common in coming decades.
Image Credit: Ning Lin, Princeton University

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⁺ National Science Board, National Science Foundation. 2020. *Science and Engineering Indicators 2020: The State of U.S. Science and Engineering*. NSB-2020-1. Alexandria, VA. Available at <https://ncses.nsf.gov/pubs/nsb20201/>.