PENNSYLVANIA FACT SHEET

FY 2020 FAST FACTS

$296,346,000
Total NSF awards to Pennsylvania

$261,086,000
Invested in fundamental research in Pennsylvania

$35,260,000
Invested in STEM education in Pennsylvania

$9,179,000
Invested in Pennsylvania startups through NSF’s small business program

TOP NSF-FUNDED ACADEMIC INSTITUTIONS FOR FY 2020

$81,342,000
Pennsylvania State University
University Park

$60,914,000
Carnegie Mellon University

$48,280,000
University of Pennsylvania

NSF BY THE NUMBERS

The National Science Foundation (NSF) is an $8.5 billion independent federal agency created by Congress in 1950 to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense. NSF’s vital role is to support basic research and researchers who create knowledge that transforms the future.
NSF-FUNDED RESEARCH FIGHTING COVID-19
Congress provided NSF with funding to prevent, prepare for, and respond to COVID-19 in the CARES Act of 2020 and the American Rescue Plan Act of 2021. For more information on NSF’s COVID research, visit NSF’s award database and COVID funding reports.

COVID-19 RESEARCH SPOTLIGHT | Researchers at the University of Pittsburgh are developing new mobile sensing and artificial intelligence techniques for in-home evaluation of COVID-19 infection to pursue automated and non-invasive screening of potential viral disease carriers. The technique aims at timely identification of cases negative for COVID-19 but caused by other diseases with similar symptoms, and hence averts unnecessary hospital visits. The proposed techniques will use commodity smartphones to measure the changes of humans’ airway mechanics, which are uniquely correlated to COVID-19 infection. These measurements build on acoustic sensing with smartphones’ built-in speakers and microphones. This research will enable identifying false positives of COVID-19 infection and could contribute to the containment of virus spread and damage.

STEM EDUCATION
STEM WORKFORCE DEVELOPMENT | The Penn State Center for Nanotechnology Education and Utilization is developing a Nanotechnology Professional Development Partnership to address the growing national need for a skilled nanotechnology workforce. This effort, combined with the center’s Nanotechnology Applications and Career Knowledge, NACK, Network, creates an avenue for new and more affordable training to a much larger and diverse audience. As a national center in NSF’s Advanced Technological Education program, NACK has assisted more than 300 postsecondary institutions in developing nanotechnology programs.

RESEARCH DRIVING WORKFORCE INNOVATION
FUTURE OF WORK | The NSF Materials Research Science and Engineering Center at the University of Pennsylvania is a national focal point for materials research and education, addressing complex fundamental problems in science and engineering that are important to society. Three distinct interdisciplinary research groups proceed in parallel to develop ways to make glass less fragile, produce fiber networks that chemically reconfigure in response to stress, and explore new ways to combine and use nanocrystals and liquid crystals. The Center community also builds state-of-the-art shared experimental facilities for materials measurement, and it hosts a range of activities that target K-16 to Ph.D. students, post-docs, teachers, regional academic, industrial and governmental scientists, and the general public, emphasizing inclusion of underrepresented minorities and women. Finally, besides providing unique interdisciplinary training for Ph.D.s and post-docs in fields critical for U.S. technological competitiveness, the Center generates discoveries, concepts and intellectual property useful for start-ups and established companies.

INFRASTRUCTURE
• Pittsburgh Supercomputing Center, a joint research center of Carnegie Mellon University and the University of Pittsburgh, in partnership with industry, will advance knowledge by enabling unprecedented artificial intelligence speed and scalability.

NCSES
• According to the National Center for Science and Engineering Statistics (NCSES), which is housed in NSF, Pennsylvania ranks 4th in Higher education R&D performance. Visit Pennsylvania’s science and engineering state profile to learn more!

4.67% of Pennsylvania’s workforce are employed in S&E occupations.

8.42% of Pennsylvania’s industries offer high-level science, engineering and technology occupations.

LEARN MORE
• NSF70 – In 2020, NSF commemorated its 70th anniversary and the 75th anniversary of the publication of Science - the Endless Frontier. Watch the highlight video for NSF’s seven decades of funding the best and brightest ideas that have transformed our lives and established the U.S. as a science and technology leader.

• NSF FACT SHEETS – NSF provides fact sheets about the agency and its bold investments in basic research. These fact sheets profile NSF investments in research across all fields of science and engineering, including quantum, artificial intelligence, and advanced manufacturing, and the NSF-supported research and computing infrastructure powering the U.S. response to COVID-19.

• CONNECT WITH NSF – For more information on NSF’s impact in your state, please contact NSF’s Office of Legislative and Public Affairs at congressionalteam@nsf.gov.