U.S. National Science Foundation

NSF 75 YEARS OF INNOVATION

2025 marks the 75th anniversary of NSF. Throughout the year, the agency will host in-person and virtual activities to commemorate this significant milestone. For more information, visit: nsf.gov/75years

PENNSYLVANIA

FAST FACTS

$332,237,000
Total NSF Awards to Pennsylvania

$270,442,000
Invested in Fundamental Research in Pennsylvania

$45,543,000
Invested in STEM Education in Pennsylvania

$9,664,000
Invested in Pennsylvania Businesses

TOP NSF-FUNDED ACADEMIC INSTITUTIONS

Pennsylvania State University
$87,955,000

University of Pennsylvania
$74,063,000

Carnegie Mellon University
$62,615,000

NSF BY THE NUMBERS

The U.S. National Science Foundation (NSF) is an independent federal agency created by Congress in 1950 to promote the progress of science; to advance the national health, prosperity, and welfare; and to secure the national defense. To fulfill this vital role, NSF supports basic research and researchers who create knowledge that transforms the future.

DID YOU KNOW? NSF has funded the work of **268** Nobel Prize winners over 75 years.

$9.06B
FY 2024 Total Enacted

92%
Funds research, education and related activities

11K
Awards

1.9K
Institutions

358K
People

"Data represents FY 2024 Actuals unless otherwise indicated"

www.nsf.gov

State Fact Sheet 2025 GR

INNOVATION | *Generating new knowledge that provides a greater understanding of the world around us*

There is untapped potential in the vast amounts of publicly available data to understand how new cellular features and phenomena central to life emerge from the properties and interactions of molecules. The NSF National Synthesis Center for Emergence in the Molecular and Cellular Sciences (NSF NCEMS) at **The Pennsylvania State University** brings together scientists from the physical, biological and data sciences and supports them with computational and human resources to synthesize a growing body of data and gain deeper and broader insights into living systems. NSF NCEMS supports the community in carrying out team and open science; enables collaboration through cloud-agnostic cyberinfrastructure, provided by CyVerse at the University of Arizona; provides training in essential elements of data science, machine learning, statistics and reproducible science; and offers nationwide opportunities to participate in NCEMS research remotely. NCEMS is also building a robust program for undergraduate students to participate in synthesis research and benefit from mentorship and experiential learning opportunities.

EXPANDING FRONTIERS | *Generating institutional capacity, new technologies and societal impact*

Wayfinding and navigation within unfamiliar indoor built environments are challenging propositions for many persons with disabilities (PWDs). A user with low vision might struggle to create a mental map of a space due to a lack of legible signage, while an individual with a mobility impairment might find it difficult to know ahead of time whether there are accessible routes available. Such challenges in navigating unfamiliar spaces can be a source of constant anxiety for PWDs and a barrier to equal participation in social and economic life. An NSF Convergence Accelerator project at **Lehigh University** has the long-term goal of improving accessibility within and around indoor built environments through the creation of Mapping for Accessibility in BuiLt Environments (MABLE). MABLE will provide digital accessibility maps of indoor environments with an interface for assessing, planning, and navigating within them based on the affordances and capabilities of the user. It will also permit map augmentation by users based on their experiences and observations. To achieve both accessibility and scalability, MABLE proposes to leverage advances in AI, building modeling, robotics, AR/VR visual scene reasoning, and low-power consumer electronics.

EDUCATION AND WORKFORCE | *Supporting our STEM talent of today and tomorrow*

Through the NSF Expanding Capacity in Quantum Information Science and Engineering program, **Byrn Mawr College** is establishing the Research and Education Center for Quantum Materials and Sensing. The center integrates resources from higher education, an existing NSF-funded quantum center at Johns Hopkins University, national labs and industry to advance research in quantum materials and quantum sensing and to transform education and workforce development. The center's research is built around three highly interlinked thrusts: quantum materials, quantum sensing and quantum information science and engineering (QISE) education research. Researchers are developing new quantum materials and enhancing quantum metrology, leading to potential applications with broad societal benefits, such as energy-efficient electronics and enhanced biomedical imaging. The development of modeling strategies, machine learning and quantum computing algorithms can significantly benefit other science and engineering fields as well. The education and workforce development activities focuses on building a pipeline for STEM talent in QISE from high school to college to graduate education and industry.

ON THE CUTTING EDGE

NSF is pushing the boundaries of what is possible in today's most important technology areas, including artificial intelligence, quantum information science, and biotechnology. The Foundation also maintains industry-leading, state-of-the-art facilities around the world.

NCSES

The National Center for Science and Engineering Statistics (NCSES) within the U.S. National Science Foundation is the nation's leading provider of statistical data on the U.S. science and engineering enterprise. As a principal federal statistical agency, NCSES conducts nationally representative surveys and publishes objective data and reports on topics related to research and development, the science and engineering workforce, and STEM education. For example, in FY 2024, **Pennsylvania** invested **$23,818,000,000** on research and development.

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

LEARN MORE

- **BROUGHT TO YOU BY NSF** – NSF has invested in discoveries, inventions, and innovations that have shaped the modern world, including the internet, 3D printing, American Sign Language, Magnetic Resonance Imaging (MRI), deep sea exploration, Doppler radar and more. For more information on NSF impacts, please visit: nsf.gov/impacts.

- **RESEARCH SECURITY** – NSF is committed to safeguarding the integrity and security of science and engineering while also keeping fundamental research open and collaborative. NSF seeks to address an age of new threats and challenges through close work with our partners in academia, law enforcement, intelligence and other federal agencies. By fostering transparency, disclosure and other practices that reflect the values of research integrity, NSF is helping to lead the way in ensuring taxpayer-funded research remains secure. To learn more, please visit NSF's Research Security website.

- **FOSTERING INNOVATION** – Every year, NSF funds around 400 companies across nearly all technology areas to create prototypes and commercialize technologies. Learn more at seedfund.nsf.gov.