National Science Foundation

PENNSYLVANIA

FY 2022 Fast Facts

$334,412,000
Total NSF Awards to Pennsylvania

$264,595,000
Invested in Fundamental Research in Pennsylvania
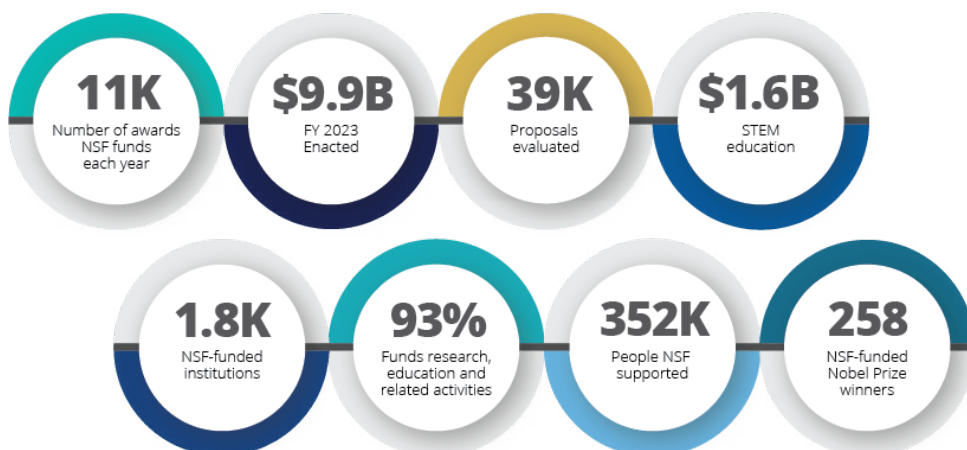
$69,817,000
Invested in STEM Education in Pennsylvania

$8,246,000
Invested in Pennsylvania Businesses
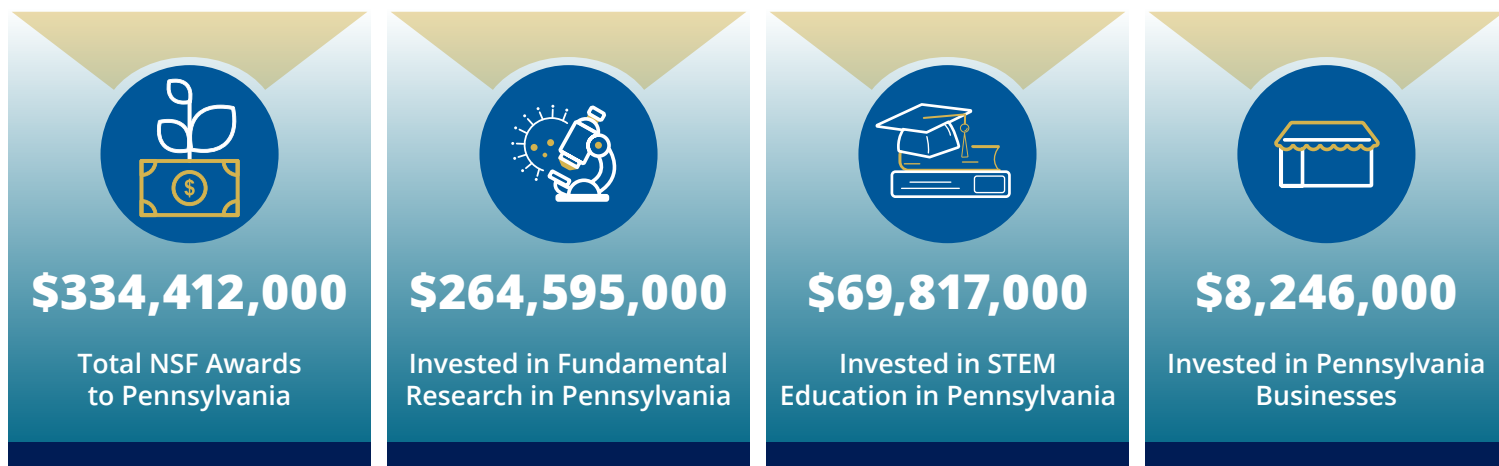
Top NSF-funded Academic Institutions for FY 2022

Pennsylvania State University University Park	Carnegie Mellon University	University of Pennsylvania
$83,519,062	**$75,609,796**	**$52,047,998**
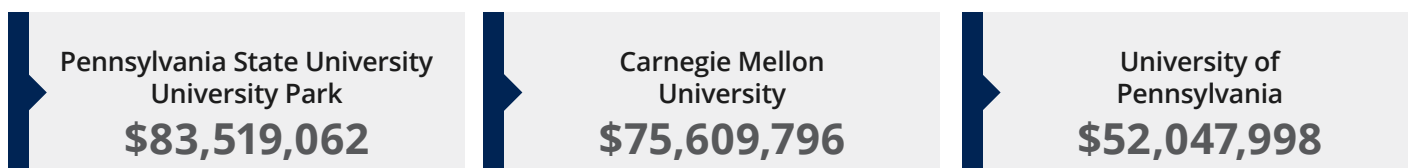
NSF By The Numbers

The National Science Foundation (NSF) is a $9.5 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.

11K Number of awards NSF funds each year

$9.9B FY 2023 Enacted

39K Proposals evaluated

$1.6B STEM education

1.8K NSF-funded institutions

93% Funds research, education and related activities

352K People NSF supported

258 NSF-funded Nobel Prize winners

Data represents FY 2022 Actuals unless otherwise indicated.

Expanding the Frontiers of Science

Unlocking the power of data will accelerate discovery to advance science, improve quality of life and enhance national competitiveness. The increasing importance of data is driving a rapid evolution of research, creating opportunities for breakthroughs by combining the strengths of artificial intelligence and high-performance computing simulation. To address this exciting opportunity for the nation's research community, the Pittsburgh Supercomputing Center, or PSC, a joint research center of **Carnegie Mellon University** and the **University of Pittsburgh**, in partnership with Hewlett Packard Enterprise, will deploy Bridges-2, a resource that will provide exceptional capacity and transformative capability for rapidly evolving data and computation intensive research. Bridges-2 builds on PSC's experience with its successful Bridges system, and will take the next step in pioneering converged, scalable high-performance computing, AI and data. These advances will accelerate discovery to benefit science, society and the nation. Bridges-2's unique architecture will also catalyze breakthroughs in critically important areas such as understanding the brain, developing new materials for sustainable energy production and quantum computing, assembling genomes of crop species to improve agricultural efficiency, exploring the universe via multi-messenger astrophysics, and enabling technologies for smart cities.

STEM Education and Broadening Participation

This advanced technological education project at the **Community College of Philadelphia** will redesign outreach and recruitment strategies to attract, recruit and enroll more female students in transportation technologies programs. A designated minority serving institution and predominantly Black institution, the Community College of Philadelphia will advance knowledge and understanding within transportation technologies education and technical science, technology, engineering and mathematics education through an integrated approach that synergistically addresses industry and student needs. By creating a "learn and earn" approach to successfully close the gender gap for women in technology, the project will focus on supporting the completion of short-term training and work-based learning experiences where students can earn higher wages and advance within their chosen career path while still enrolled in school. In partnership with the National Institute for Women in Trades, Technology & Science, this project will engage more female students in transportation technologies and create recruitment, retention and job placement plans that can be replicated and scaled to improve overall student success in STEM.

Regional Innovation Engines

The NSF Engines program envisions fostering flourishing regional innovation ecosystems across the country, providing a unique opportunity to spur economic growth in regions that have not fully participated in the technology boom of the past few decades. The NSF Engines program uniquely harnesses the nation's science and technology research and development enterprise and regional-level resources. NSF Engines can catalyze robust partnerships rooted in scientific and technological innovation to positively impact the economy within a geographic region, address societal challenges, and advance national competitiveness. Find potential NSF engines in your state.

Infrastructure

Lehigh University is developing a heterogeneous edge computing platform for real-time scientific machine learning. The platform will allow for real-time analysis and control of optical, scanning probe and transmission electron microscopy. It will also enable transformative advances in wireless communication, healthcare monitoring, advanced manufacturing, energy conversion and quantum materials.

NCSES

According to the National Center for Science and Engineering Statistics (NCSES), which is housed in NSF, Pennsylvania ranks 5th in the nation for higher education R&D performance. Visit Pennsylvania's science and engineering state profile to learn more!

35.48% of **Pennsylvania's** higher education degrees are concentrated in S&E fields.

4.90% of **Pennsylvania's** workforce are employed in S&E occupations.

7.32% of **Pennsylvania's** total employment is attributable to knowledge - and technology - intensive industries.

Learn More

CHIPS & SCIENCE – The CHIPS and Science Act's investments in the U.S. National Science Foundation will help the United States remain a global leader in innovation. Implementation of this legislation will be key to ensuring that ideas, talent and prosperity are unleashed across all corners of the nation. For more information, please visit NSF's CHIPS and Science website.

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.

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.