



STEM Workforce: The Engine of U.S. Scientific and Economic Leadership

A strong science and engineering workforce is vital to America's economic growth and technological leadership. Since the 1950s, the U.S. National Science Foundation has supported students, educators, researchers and entrepreneurs, building the talent pipeline that drives world-changing discoveries and innovation.

Today, more than 36 million Americans work in science, technology, engineering and mathematics fields, a fast-growing workforce shaped by NSF's commitment. NSF invests billions of dollars each year in strengthening education and training opportunities across America.

INSPIRING FUTURE SCIENTISTS AND ENGINEERS

From its earliest days, NSF has inspired K-12 students, educators and the public to explore careers in science and engineering. These efforts include:

- **Supporting students** through the [NSF STEM K-12 program](#), enabling them to build a strong foundation in science and mathematics.
- **Teacher training programs**, including the [NSF Robert Noyce Teacher Scholarship Program](#) and [NSF Research Experiences for Teachers](#), provide educators with hands-on training and classroom-ready content and resources.
- **Public engagement** through museum exhibits, films and digital platforms allows Americans to connect scientific ideas to their own communities, such as the NSF-supported "[NSF Discovering Our Universe](#)" gallery at the National Air and Space Museum.

BUILDING SCIENTIFIC CAREERS

Through strategic investments, NSF prepares current and future generations of scientists, engineers and innovators. Examples include:

- **Hands-on research opportunities** through programs such as [NSF Research Experiences for Undergraduates](#) (NSF REU), which place students in laboratories, field sites, observatories and museums across America.
- **Advanced training** through programs such as the [NSF Graduate Research Fellowship Program](#) (NSF GRFP), postdoctoral research fellowships, and the [NSF Faculty Early Career Development Program](#).
- **Building workforce experience** with hands-on training and industry placements through programs such as [NSF Non-Academic Research Internships for Graduate Students](#).

FAST FACTS

11,800

New STEM teachers trained through the Robert Noyce Teacher Scholarship Program since 2002 to teach in high-need school districts.

FAST FACTS

70,000

Individuals supported by the NSF GRFP since 1952.

6,000

Participants in the NSF REU program from 2017 to 2022.

3,500

Sites supported by NSF REU since 1982.

DID YOU KNOW?

NSF support has inspired groundbreaking scientific discoveries that have made the world safer and more secure and opened new economic opportunities. This includes support to [274 Nobel laureates](#) across chemistry, physics, physiology or medicine, and economics.





FAST FACTS

\$3.75 billion

In support of NSF EPSCoR jurisdictions since 1970.

50,000

Community college students who have learned artificial intelligence skills through the NSF ATE program.

600

Research teams (including 6,000 students) supported by NAIRR nationwide.

FAST FACTS

\$7.01 billion

Follow-on funding raised by NSF I-Corps™ teams to support startups.

16,000

Approximate total degrees granted to students trained by NSF ERCs from 1985-2025.

2,000

Students conducting research at NSF IUCRCs each year. About 30% are hired by partner companies.

EXPANDING OPPORTUNITY NATIONWIDE

NSF strengthens the STEM workforce throughout the nation by expanding access to tools, training and research infrastructure. Examples include:

- **Building research capacity** through [NSF Established Program to Stimulate Competitive Research](#) (NSF EPSCoR), which drives technology development and expands STEM career pathways in regions with historically lower research investment.
- **Preparing a skilled technical workforce** through programs such as [NSF Advanced Technological Education](#) (NSF ATE), which trains Americans for high-demand industries like advanced manufacturing, biotechnology and cybersecurity.
- **Empowering regional innovation ecosystems** across the U.S. through the [NSF Regional Innovation Engines](#) program, which creates opportunities for talent development and promotes economic growth.
- **Expanding the AI workforce** through programs such as the [NSF-led National AI Research Resource](#) (NAIRR), which provides access to advanced computing, data and AI tools to students, researchers and innovators nationwide.

RESEARCH-TO-INNOVATION PIPELINE

NSF plays a central role in linking research, industry and entrepreneurship — ensuring new knowledge translates into technologies. Examples include:

- **Driving innovation with industry partners** to tackle challenges in energy, biotechnology and AI, including dozens of [NSF Engineering Research Centers](#) (NSF ERC), [Science and Technology Centers](#) and [NSF Industry-University Cooperative Research Centers](#) (NSF IUCRC).
- **Moving discoveries beyond the lab** with programs such as [NSF Accelerating Research Translation](#) and [NSF Translation to Practice](#) to build institutional capacity, as well as [NSF Innovation Corps](#) (NSF I-Corps™), which equips researchers with entrepreneurial skills.
- **Commercializing NSF-supported breakthroughs** by enabling startups and small businesses to develop and scale high-impact technologies through the [NSF Small Business Innovation Research/Small Business Technology Transfer](#) (NSF SBIR/STTR) programs — supporting new products, industries and job creation.

21ST-CENTURY WORKFORCE AND BEYOND

NSF prepares the nation's workforce to embrace and develop emerging technologies. Examples include:

- The [NSF Experiential Learning for Emerging and Novel Technologies](#) program, which prepares learners at all stages for careers in cutting-edge technologies, from AI and quantum to advanced manufacturing and biotechnology.
- Initiatives such as [AI-Ready America](#) and the [National Applied AI Consortium](#), which expand access to AI education and training and help learners build skills needed for high-demand careers across the economy.
- NSF-supported initiatives such as the [National Q-12 Education Partnership](#) and [Quantum for All](#), which strengthen education pathways and prepare individuals for well-paying roles in quantum and related technology fields.