U.S. National Science Foundation

MISSOURI

● FAST FACTS
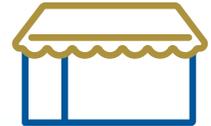
$81,442,000
Total NSF Awards to Missouri

$72,627,000
Invested in Fundamental Research in Missouri

$8,815,000
Invested in STEM Education in Missouri

$1,775,000
Invested in Missouri Businesses

● TOP NSF-FUNDED ACADEMIC INSTITUTIONS

Washington University in St. Louis
$29,849,000

University of Missouri
$24,311,000

Saint Louis University
$7,212,000

● 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

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

Genome editing tools have revolutionized biology. Scientists are using these tools to connect genes to phenotypes, generate novel phenotypic variation and for diverse crop improvement applications. Funded by the NSF Plant Genome Research Project, the **Donald Danforth Plant Science Center** is working to further extend genome editing by developing a method for editing gene expression called "epigenetic editing" — changing the gene expression without directly changing the DNA. Epigenetic variability can have profound impacts on an organism's phenotype, and many important agronomic traits are influenced by gene expression; thus, epigenetic crop improvement strategies will complement existing biotechnology and breeding strategies and may offer opportunities to help maintain crop yields in the face of climate change. The broader impacts of this project include wide dissemination of the method to improve crop plants and other species and training students via integration with a long-running and successful undergraduate internship program.

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

One of the goals of scientific research is to have an impact beyond the laboratory; however, many university researchers do not have the knowledge, support or resources to translate their discoveries to the point of societal and economic impact. By designing action-oriented activities and providing hands-on business training and support, the Accelerating Research Translation: Technology, Entrepreneurship and Commercialization Hub (ART:TECH) project at the **University of Missouri** aims to help researchers navigate the complex technical, ethical and commercialization landscape associated with innovation and entrepreneurship. Researchers learn how to utilize local, state and national resources and how to partner effectively and efficiently with the local communities to advance their research beyond the laboratory. The guiding principle of the project, funded through the NSF Accelerating Research Translation program, is to bring together the expertise and resources necessary to ensure impactful discoveries result in direct benefits to society.

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

The field of software development is currently experiencing a profound transformation driven by significant advancements in large language models (LLMs). This shift demands that software developers acquire new skills to fully leverage the potential of LLMs, including prompt engineering for software development, the management of structural complexity, debugging artificial intelligence-related errors, and adherence to ethical guidelines and principles. To meet these growing demands, the **University of Missouri – Kansas City** is using funding from the NSF Improving Undergraduate STEM Education program to improve curricula in computer science education by integrating LLMs. Specifically, the project integrates LLMs into core programming courses to enhance students' problem-solving and programming proficiency and in the software engineering course sequence as software development tools. The utilization of LLMs in these ways is expected to elevate student engagement, promote active learning, and foster critical thinking.

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, **Missouri** invested **$8,917,000,000** 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.