**U T A H**

- **FY 2021 Fast Facts**
  - $79,516,000 in Total NSF Awards to Utah
  - $62,980,000 Invested in Fundamental Research in Utah
  - $16,535,000 Invested in STEM Education in Utah
  - $1,019,000 Invested in Utah startups

- **Top NSF-funded Academic Institutions for FY 2021**
  - University of Utah: $47,617,738
  - Utah State University: $16,646,321
  - Brigham Young University: $6,351,908

- **NSF By The Numbers**
  The National Science Foundation (NSF) is an $8.8 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.

  - 93% Funds research, education and related activities
  - $8.8B FY 2022 Enacted
  - 43,600 Proposals evaluated
  - 2,000 NSF-funded institutions
  - 11,300 Number of awards NSF funds each year
  - 318K People NSF supported
  - $1.5B STEM education
  - $181M To seed public/private partnerships
  - 253 NSF-funded Nobel Prize winners
NSF-funded COVID-19 Research and Recovery

Recent events such as the coronavirus pandemic, the Suez Canal obstruction, the Texas power crisis and the Colonial Pipeline attack have highlighted the need for more robust and resilient global supply chains. Without good models of supply chain behavior, it is difficult to predict the outcome of disruptions and plan appropriate interventions to minimize future impacts. A project led by Brigham Young University will develop new methodology in network theory and will apply tools from several mathematical areas to study supply chain dependencies of all publicly traded firms worldwide. The principal investigator has acquired complete data on the significant supply chain dependencies, which will open the door to validated and predictive models. The mathematical results will be applied to improve the prediction of the outcome of disruptions (due to events such as the pandemic) and plans of interventions to minimize future impacts.

STEM Education

An NSF-supported project led by Utah State University will focus on wild bees to determine how variation in sociality influences how bees balance investment in reproduction, health and longevity. The project will provide unique insights into how bees optimize fitness under changing environmental conditions, which is critical for mitigating issues related to global food security in the face of pollinator decline. Training will specifically target Native American students from a regional campus to broaden participation in STEM through mentorship in a summer research program and fellowships. Results generated from the research will be used to develop guided experiential learning modules in a course called “Genes and Behavior.”

Research Driving Innovation

Led by The University of Utah, an NSF-funded National Robotics Initiative grant is supporting research that will contribute new knowledge to the design and control of a novel semi-soft robot. The researchers will pursue fundamental research to provide needed knowledge in the design and control of robots with internal skeletons that can transition from liquid to solid metal. The semi-soft robot will be able to compress itself to pass through small openings, then once through, will stiffen to manipulate its environment. Such a robot has the potential to benefit the U.S. economy and society with broad applications in infrastructure, manufacturing, disaster response and medicine. This research involves several disciplines including mechanical engineering, mathematical modeling, control theory, computer science and robot motion planning. The research approach and associated outreach activities will help to broaden participation of underrepresented groups in robotics and positively impact engineering and computer science education.

Infrastructure

The NSF Engineering Research Center for Advancing Sustainability through Powered Infrastructure for Roadway Electrification, ASPIRE, at Utah State University will take a holistic approach to eliminating range and charging as barriers for electrifying all vehicle classes, from passenger cars to heavy duty trucks.

NCSES

According to the National Center for Science and Engineering Statistics (NCSES), which is housed in NSF, 30% of Science, Engineering and Health doctorates conferred in Utah are made in Engineering.

- 5.74% of Utah’s workforce are employed in S&E occupations.
- 21.81% of Utah’s higher education degrees are concentrated in S&E fields.

Learn More

COVID RELIEF - 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 (ARP) Act of 2021. For more information on NSF-funded COVID-19 research and recovery, visit NSF’s award database for CARES Act and ARP awards, and NSF’s Toolkit for COVID funding updates.

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.

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