

UNITED STATES
National Science Foundation

FY 2016

BUDGET REQUEST TO CONGRESS

MISSION: To promote the progress of science; to advance the national health, prosperity, and welfare; and to secure the national defense.

—From the National Science Foundation (NSF) Act of 1950 (P.L. 81-507)

VISION: A Nation that creates and exploits new concepts in science and engineering and provides global leadership in research and education.

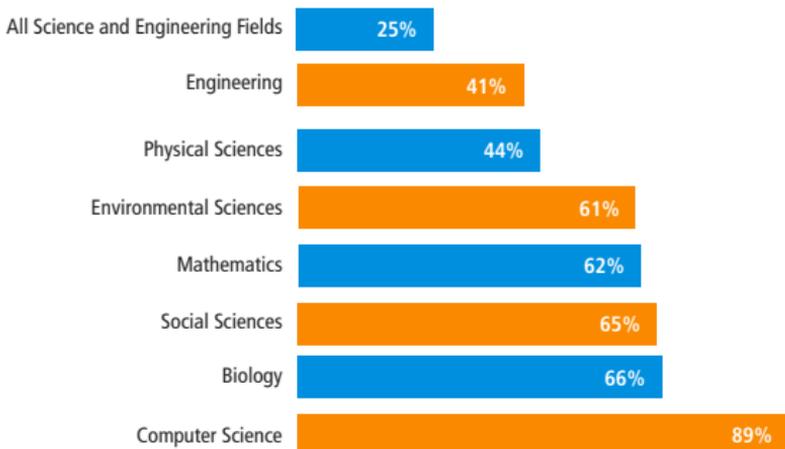
—From "Investing in Science, Engineering, and Education for the Nation's Future" *NSF Strategic Plan for 2014-2018*

ABOUT NSF

- Established by Congress in 1950 as an independent federal agency to promote American science and engineering (S&E)
- The only federal agency that funds basic non-biomedical research and education across all fields of S&E and at all levels of education
- NSF serves the national interest, as stated by NSF's mission to promote the progress of science, to advance the national health, prosperity and welfare, and to secure the national defense
- Supports research and workforce development programs that help drive future economic growth, global competitiveness, and the creation of high-wage jobs for American workers
- Funds advanced instrumentation and facilities, Arctic and Antarctic research and operations, cooperative research between universities and industry, and U.S. participation in international scientific efforts
- Allocates 89 percent of research funding through a competitive merit review process as grants or cooperative agreements to individual researchers and groups at colleges, universities, academic consortia, nonprofit institutions, and small businesses
- Has supported 214 Nobel Laureates since its inception

NSF Support of Academic Basic Research in Selected Fields

(as a percentage of total federal support)



Note: Biology includes Biological Sciences and Environmental Biology; excludes National Institutes of Health.

Source: NSF/National Center for Science and Engineering Statistics,
Survey of Federal Funds for Research & Development, FY 2013

Investing in Science, Engineering, and Education for the Nation's Future

FY 2016 BUDGET REQUEST

NSF Budget by Appropriation (dollars in millions)

	FY 2014 Actual	FY 2015 Estimate	FY 2016 Request	Change Over FY 2015 Estimate	
				Amount	Percent
Research and Related Activities	\$5,775.32	\$5,933.65	\$6,186.30	\$252.66	4.3%
Education and Human Resources	\$832.02	\$866.00	\$962.57	\$96.57	11.2%
Major Research Equipment and Facilities Construction	\$200.00	\$200.76	\$200.31	-\$0.45	-0.2%
Agency Operations and Award Management	\$305.95	\$325.00	\$354.84	\$29.84	9.2%
National Science Board	\$4.25	\$4.37	\$4.37	-	-
Office of Inspector General	\$13.84	\$14.43	\$15.16	\$0.73	5.1%
TOTAL	\$7,131.39	\$7,344.21	\$7,723.55	\$379.34	5.2%

Totals may not add due to rounding.

FY 2016 CROSS-FOUNDATION INVESTMENTS

Understanding the Brain (UtB) — Enable scientific understanding of the full complexity of the brain in action and in context. UtB encompasses NSF's contributions to the Administration's Brain Research through Advancing Innovation and Neurotechnologies (BRAIN) Initiative (\$144 million).

Risk and Resilience — Improve predictability and risk assessment and increase resilience to extreme natural events and man-made events in order to reduce their impact on the Nation's quality of life, society, and economy (\$58 million).

Innovations at the Nexus of Food, Energy, and Water Systems (INFEWS) — Understand, design, and model the interconnected food, energy, and water system through an interdisciplinary research effort that incorporates all areas of science and engineering and addresses the natural, social, and human-built factors involved (\$75 million).

Inclusion across the Nation of Communities of Learners that have been Underrepresented for Diversity in Engineering and Science (NSF INCLUDES) — Develop a national scalable initiative to increase the preparation, participation, advancement, and potential contributions of those who have been traditionally underserved and/or underrepresented in the STEM enterprise (\$15 million).

NSF by the Numbers

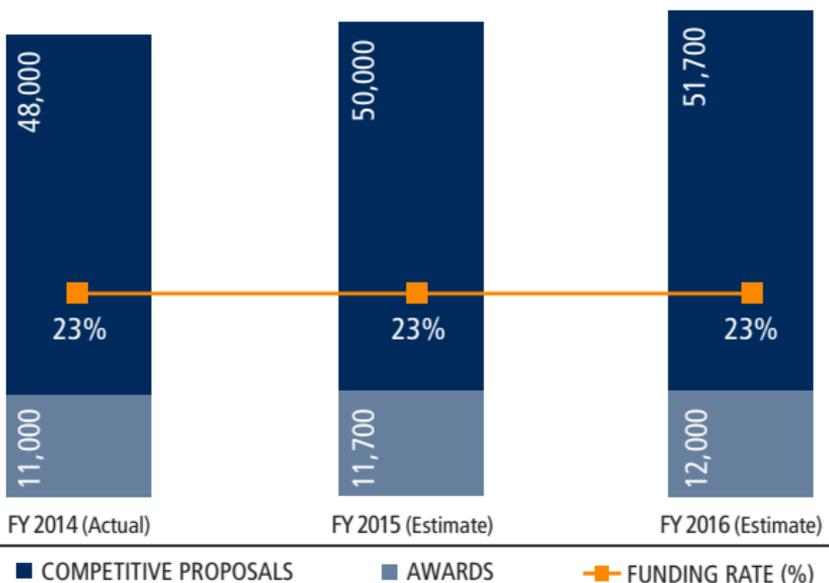
\$7.7 billion	FY 2016 Budget Request
1,826	Colleges, universities, and other institutions receiving NSF funding in FY 2014
48,100	Proposals evaluated in FY 2014 through a competitive merit review process
11,000	Competitive awards funded in FY 2014
225,800	Proposal reviews conducted in FY 2014
320,900	Estimated number of people NSF supported directly in FY 2014 (researchers, postdoctoral fellows, trainees, teachers, and students)
49,800	Students supported by NSF Graduate Research Fellowships since 1952

Note: STEM—Science, Technology, Engineering, and Mathematics

ONGOING NSF-WIDE PRIORITIES

- Clean Energy: \$377 million
- Cyber-enabled Materials, Manufacturing, and Smart Systems (CEMMSS): \$257 million
- Cyberinfrastructure Framework for 21st Century Science, Engineering, and Education (CIF21): \$143 million
- Innovation Corps (I-Corps™): \$30 million
- NSF Research Traineeship (NRT): \$62 million
- Research at the Interface of Biological, Mathematical, and Physical Sciences (BioMaPS): \$33 million
- Science, Engineering, and Education for Sustainability (SEES): \$81 million
- Secure and Trustworthy Cyberspace (SaTC): \$124 million

NSF Funding Profile, FY 2014–FY 2016



FY 2016 PERFORMANCE GOALS

For FY 2016, NSF has set seven performance goals so that NSF can strategically monitor and oversee progress being made towards its larger aims. NSF also assesses progress through an annual process of strategic reviews of the objectives in its strategic plan.

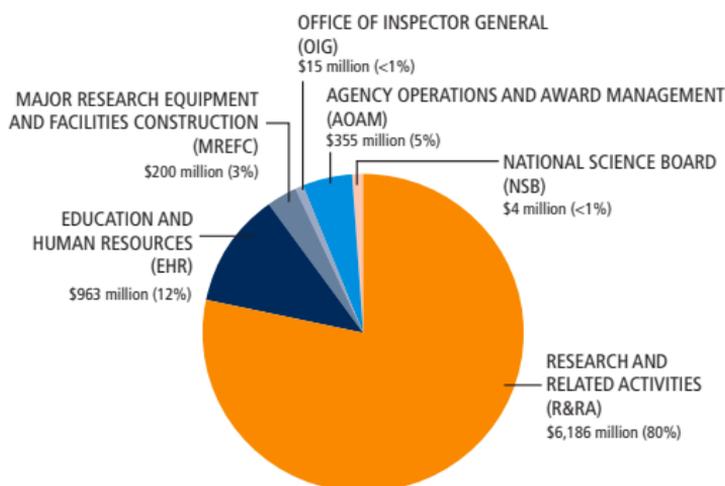
In FY 2016, NSF will perform strategic reviews and monitor the following goals.

Goal	Goal Statement
Ensure that Key Program Investments are on Track	Ensure that key FY 2016 NSF-wide program investments are implemented and on track.
Ensure that Infrastructure Investments are on Track	Ensure program integrity and responsible stewardship of major research facilities and infrastructure.
Use Evidence to Guide Decisions	Use evidence-based reviews to guide management investments.
Make Timely Award Decisions	Inform applicants whether their proposals have been declined or recommended for funding within 182 days, or six months, of deadline, target, or receipt date, whichever is later.
Foster an Environment of Diversity and Inclusion	Foster an environment of diversity and inclusion while ensuring compliance with the agency's equal opportunity and civil rights programs.
Evaluate NSF Investments	Enable consistent evaluation of the impact of NSF investments with a high degree of rigor and independence.
Increase the Percentage of Wholly Virtual Panels	Increase the percentage of proposal review panels that are conducted wholly virtually while maintaining the quality of the merit review process.



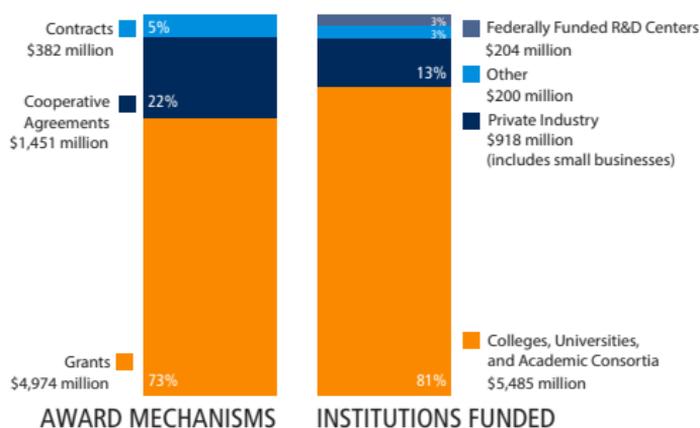
FOLLOWING THE MONEY

WHERE IT COMES FROM FY 2016 NSF Budget Request by Account—\$7,724 million



Note: Totals may not add due to rounding.

WHERE IT GOES AND HOW IT GETS THERE Obligations for Research and Education Programs—\$6,807 million



This chart shows the distribution of NSF's obligations by institution type and funding mechanism. While the data shown are based on FY 2014, the relative shares should provide a good indication of the FY 2016 distribution.

Note: NSF Research and Education Programs include Research and Related Activities, Education and Human Resources, and Major Research Equipment and Facilities Construction appropriations. Other institutions funded include federal, state, and local governments; nonprofit organizations; and international organizations.

For More Information:

NSF FY 2016 Budget Request to Congress

www.nsf.gov/about/budget

Research and Education Results Supported by NSF

www.nsf.gov/discoveries

NSF Budget and Performance

www.nsf.gov/about/performance

Investing in Science, Engineering, and Education for the Nation's Future: NSF Strategic Plan for 2014-2018

www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf14043

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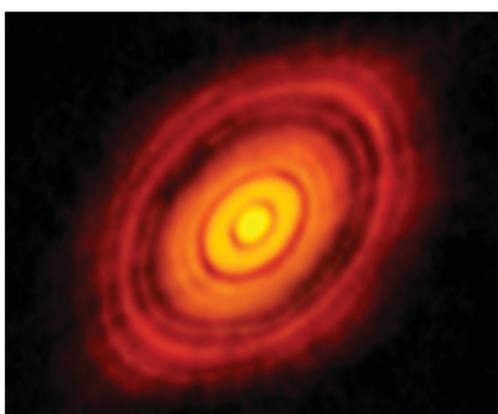
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RESEARCH AND EDUCATION HIGHLIGHTS

ALMA Image of the Young Star HL Tau and its Protoplanetary Disk

This image, taken recently with the Atacama Large Millimeter/Submillimeter Array (ALMA), shows a planetary system in the process of formation around a nearby young star called HL Tau. The multiple concentric rings are separated by dark gaps that herald the presence of emerging planets as they sweep their orbits clear of dust and gas. The existence of such well-delineated structures so early in the star's life is challenging our theories of star and planet formation. The image was obtained using only a 30-element subset of the full 66-antenna array as part of early science tests. With the relocatable antennas deployed at almost their maximum separation (15km apart) the spatial resolution is 5 au (1 au is the Earth-Sun distance) at the observing wavelength of 1.3mm.



Credit: ALMA (NRAO/ESO/NAOJ); C. Brogan, B. Saxton (NRAO/AUI/NSF)

New Media Model

"Plum Landing," created by WGBH in Boston, uses animations, games, a mobile app, videos, and hands-on activities to increase children's understanding of science and nature. Designed for kids aged 6 to 9, it introduces core science concepts and models key habits of mind scientists use when exploring the natural world. Since its debut last April, the website has garnered 8 million+ page views. Children also are exploring their environments — to date, they've submitted 70,000 photos and drawings.



Credit: Copyright Bill Shribman



Credit: Dr. Cang Ye, University of Arkansas at Little Rock

Seeing-Eye Robot

At the University of Arkansas at Little Rock, researchers prototyped a robotic walking stick for the blind. It has cameras to detect objects in the way such as chairs and stairs, an audio system that communicates to the user, and a computer that remembers recent pathways and objects in them. Developed under the National Robotics Initiative, a multi-agency program that includes NSF.