SELECTED CROSSCUTTING PROGRAMS

Many NSF investments draw on interdisciplinary teams from across the agency. Some are discussed in detailed narratives in other sections of this chapter. Other cross-cutting programs are shown below.

ADVANCE

In FY 2025, $19.86 million is requested for the ADVANCE program to encourage institutions of higher education and the STEM community, including professional societies and other related not-for-profit organizations, to address various aspects of STEM academic culture and institutional structure to enhance gender equity for faculty and academic administrators. ADVANCE is an integral part of NSF's multifaceted strategy to broaden participation in the STEM workforce and supports the critical role of the Foundation in improving the recruitment, retention, success, and advancement of women in academic science and engineering. Further, ADVANCE contributes important research on successfully supporting organizational change to address systemic barriers to equity for all faculty. EDU stewards funding for ADVANCE to support projects in all areas of NSF STEM disciplines.

Faculty Early Career Development (CAREER)

The CAREER program offers NSF’s most prestigious awards in support of early-career faculty and is designed to provide stable funding at a sufficient level and duration to enable awardees to develop not only as outstanding researchers but also as educators demonstrating commitment to teaching, learning, and dissemination of knowledge. The FY 2025 Request provides $409.44 million, supporting approximately 770 awards.

Industry-University Cooperative Research Centers (IUCRC)

The IUCRC program accelerates the impact of basic research through close relationships between industry innovators, world-class academic teams, and government leaders. IUCRCs are designed to help corporate partners and government agencies connect directly and efficiently with university researchers to achieve three primary objectives. 1) Conduct high-impact research to meet shared industrial needs in companies of all sizes; 2) Enhance U.S. global leadership in driving innovative technology development; and 3) Identify, mentor, and develop a diverse high-tech, exceptionally skilled workforce. NSF created the IUCRC program in 1973 to foster long-term partnerships among industry, academe, and government. These partnerships support research programs of mutual interest, contribute to the Nation's research infrastructure base, promote workforce development, and facilitate technology transfer. Every year, more than 2,000 students engage in industrially relevant research at these centers nationwide, giving them on-the-job training for a private sector career. About 30 percent of these student researchers are hired by the member companies. The FY 2025 Request provides $22.66 million for the IUCRC program.

Long-Term Ecological Research (LTER)

The FY 2025 Request provides $30.81 million for LTER, which supports fundamental research that requires data collection over long periods to unravel the principles and processes of ecological science, which frequently involves long-lived species, legacy influences, and rare events. The LTER program supports a loosely coordinated network of 28 field sites that focus on: (1) understanding

ecological phenomena that occur over long temporal and broad spatial scales; (2) creating a legacy of well-designed, long-term ecological experiments; (3) conducting major syntheses and theoretical efforts; and (4) providing information to identify and to address environmental challenges. LTER projects represent a diversity of habitats in North America, the Caribbean, Pacific Ocean, Arctic, and Antarctic, including coral reefs, arid grasslands, estuaries, lakes, prairies, forests, alpine and Arctic tundra, urban areas, and agroecosystems. FY 2025 funding will sustain site-specific activities examining ecological and evolutionary dynamics in natural populations, communities, and ecosystems, some of which have been studied for over 40 years.

The National Ecological Observatory Network (NEON) infrastructure is co-located at nine LTER sites. NEON is a continental-scale infrastructure facility providing standardized physical and data resources to researchers and educators. LTER is a network of long-term research projects aimed at understanding ecological processes in a range of ecosystems. Ongoing research at LTER sites may take advantage of data generated using NEON infrastructure. Also, the co-location of NEON infrastructure at some LTER sites stimulates new research that builds on LTER research by enhancing the ability to extend site-based knowledge to regional and continental scales. For more on NEON, see the Major Facilities narrative in the Research Infrastructure section of the NSF-Wide Investments chapter.

National Nanotechnology Coordinated Infrastructure (NNCI)

In FY 2025, $15.46 million is requested for the NNCI sites. This is part of NSF's contribution to the National Nanotechnology Initiative (NNI), which is described in the NSF-Wide Investments chapter.

NSF Innovation Corps (I-Corps™)

In FY 2025, $50.0 million is requested for I-Corps™. This program connects NSF-funded science and engineering research with the technological, entrepreneurial, and business communities, fostering a national innovation network that links scientific discovery with technology development, societal, national, and geostrategic needs, and economic opportunities. The goal of the NSF I-Corps™ program, created by NSF in 2011, is to reduce the time and risk associated with translating promising ideas and technologies from the laboratory to the marketplace and society. The program is designed to support the commercialization of deep technologies, or those revolving around fundamental discoveries in science and engineering. The NSF I-Corps™ program addresses the skill and knowledge gap associated with the transformation of fundamental research into deep technology ventures. Its curriculum consists of experiential learning for customer and industry discovery, coupled with first-hand investigation of industrial processes, allowing teams to assess the translational potential of their inventions.

Research Experiences for Undergraduates (REU)

In FY 2025, $80.20 million is requested for the REU Sites and Supplements program. NSF's ongoing support reflects the importance of undergraduate research experiences in building students' interest in STEM disciplines. REU grants involve students at all stages of undergraduate education. REU Supplements allow students to join research projects supported by NSF grants. REU Sites support cohorts of students to conduct research within or across STEM disciplines. This feature enables the program to involve students who might not otherwise have the opportunity, particularly those from

institutions where faculty research is limited. The REU program encourages partnerships between community colleges and baccalaureate degree-granting institutions to provide research opportunities for community college students and faculty. NSF's REU programs are affiliated with IUSE programs, with budget and award decisions remaining within individual directorates.

Research in Undergraduate Institutions (RUI)

The FY 2025 Request for NSF's RUI program totals $34.70 million. The RUI activity seeks to support high quality research by faculty members of predominantly undergraduate institutions, strengthen the research environment in academic departments that are primarily oriented toward undergraduate instruction, and promote the integration of research and education of undergraduate students. RUI proposals are accepted in all fields of science and engineering supported by NSF, including research on learning and education.

NATIONAL SCIENCE FOUNDATION
SELECTED CROSSCUTTING PROGRAMS
FY 2025 BUDGET REQUEST TO CONGRESS
(Dollars in Millions)

Selected Crosscutting Programs		FY 2023 Base Plan	FY 2024 (TBD)	FY 2025 Request	Change over FY 2023 Base Plan Amount	Change over FY 2023 Base Plan Percent
ADVANCE	R&RA	-	-	-	-	N/A
	EDU	$18.72	-	$19.86	$1.14	6.1%
	Total, NSF	**18.72**	**-**	**19.86**	**1.14**	**6.1%**
Faculty Early Career Development - CAREER	R&RA	408.47	-	387.44	-21.03	-5.1%
	EDU[1]	20.00	-	22.00	2.00	10.0%
	Total, NSF	**428.47**	**-**	**409.44**	**-19.03**	**-4.4%**
Industry-University Cooperative Res. Ctrs. - I/UCRC	R&RA	22.20	-	22.66	0.46	2.1%
	EDU	-	-	-	-	N/A
	Total, NSF	**22.20**	**-**	**22.66**	**0.46**	**2.1%**
Long-Term Ecological Research Sites - LTERs	R&RA	30.81	-	30.81	-	-
	EDU	-	-	-	-	N/A
	Total, NSF	**30.81**	**-**	**30.81**	**-**	**-**
Nat'l Nanotechnology Coordinated Infrastructure - NNCI	R&RA	15.46	-	15.46	-	-
	EDU	-	-	-	-	N/A
	Total, NSF	**15.46**	**-**	**15.46**	**-**	**-**
NSF Innovation Corps - I-Corps™	R&RA	50.00	-	50.00	-	-
	EDU	-	-	-	-	N/A
	Total, NSF	**50.00**	**-**	**50.00**	**-**	**-**
Research Experiences for Undergraduates - REU - Sites	R&RA	62.08	-	62.58	0.50	0.8%
	EDU	-	-	-	-	N/A
	Total, NSF	**62.08**	**-**	**62.58**	**0.50**	**0.8%**
Research Experiences for Undergraduates - REU - Supps	R&RA	17.82	-	17.62	-0.20	-1.1%
	EDU	-	-	-	-	N/A
	Total, NSF	**17.82**	**-**	**17.62**	**-0.20**	**-1.1%**
Research at Undergraduate Institutions - RUI	R&RA	31.99	-	34.70	2.71	8.5%
	EDU	-	-	-	-	N/A
	Total, NSF	**31.99**	**-**	**34.70**	**2.71**	**8.5%**