

DIRECTORATE FOR STEM EDUCATION (EDU)**\$1,300,000,000****EDU Funding**
(Dollars in Millions)

	FY 2023 Base Plan ¹	FY 2024 (TBD)	FY 2025 Request	Change over FY 2023 Base Plan	
				Amount	Percent
Division of Equity for Excellence in STEM (EES)	\$254.03	-	\$267.26	\$13.23	5.2%
Division of Graduate Education (DGE)	479.42	-	502.76	23.34	4.9%
Division of Research on Learning in Formal & Informal Settings (DRL)	219.79	-	218.31	-1.48	-0.7%
Division of Undergraduate Education (DUE)	276.04	-	311.67	35.63	12.9%
Total	\$1,229.28	-	\$1,300.00	\$70.72	5.8%

¹ For comparability with FY 2025, FY 2023 levels do not include this organization's share of Mission Support Services that were funded through the R&RA and EDU directorates and offices.

About EDU

The work of EDU closely aligns with the Administration's priorities of advancing equity, building a future workforce for the needs of today and the industries of the future, and expanding opportunities in STEM to everyone, everywhere. STEM education and research play a central role in fostering the necessary social and economic infrastructure to support important priorities to expand clean energy, strengthen the economy, and maintain global competitiveness in emerging technologies. Now, more than ever, the Nation needs a robust STEM enterprise that includes a diverse, highly skilled U.S. STEM workforce. Through existing programs, EDU supports activities and research that aim to increase participation and opportunities in science and engineering of individuals from racial and ethnic groups traditionally underrepresented in STEM fields, including at minority serving institutions (MSIs). Both a strong STEM workforce and a STEM-literate public are needed, not only to address societal challenges exacerbated by continuing world health crises, climate change, and the rapid emergence of AI, but also to support a vibrant U.S. economy.

In recent years, EDU has focused on the NSF priority of reaching the Missing Millions (NSF's effort to reduce the significant talent gap in STEM by increasing diversity) in STEM to enlarge the STEM talent pool by improving access to quality STEM teaching and learning, increasing STEM pathway connections and experiences, and expanding opportunities for a more diverse population to pursue STEM. EDU is vigilant in its quest to create new partnerships (as well as strengthen existing ones) and bolster core STEM education activities that drive learning, broader participation of underrepresented groups, and workforce development. In FY 2024, EDU expanded efforts to better understand and support the needs of students whose preparation, talents, intelligence, and entrepreneurship have been historically neglected, unrecognized, and underused. New partnerships with industry, private philanthropy, and other federal agencies have provided opportunities to build innovative research infrastructures and mutually beneficial collaborations to grow the STEM education research community, and to increase scholarship, internship, and formal and informal experiential opportunities for individuals. EDU has a robust portfolio that invests in new discoveries in STEM education, in both formal and informal learning environments. Its basic and use-inspired translational research informs STEM programs, policies, processes, and practices, whether results are applied immediately to improve practice, or build the knowledge base to inform innovations well into the future.

In FY 2025, EDU will accelerate its efforts – through strategic outreach and engagement, partnerships,

and teaming – that engage new strategic collaborations to broaden experiential learning opportunities, to identify and validate improved teaching and learning possibilities through novel and emerging technologies, and to create innovative ecosystems that foster discovery and mobilize knowledge to improve STEM education at every juncture of education, especially in preK-12 schools and broad access institutions of higher learning, such as community colleges and MSIs. Again, EDU will increase both outreach and engagement with investigators, institutions of higher learning, school districts, and organizations in distressed and underserved communities and regions around the U.S. For example, special attention will be given to the aforementioned entities located in EPSCoR jurisdictions.

EDU division allocations are designed to accomplish the collective aims of the directorate. Through research and implementation science, we seek to transform both STEM teaching and learning and workforce environments. In this pursuit, EDU fosters successful practices in STEM education and workforce development that ensure everyone can participate in the STEM enterprise. Discovery Research PreK-12 (DRK-12) and Advancing Informal STEM Learning (AISL) programs both support evidence-based approaches to learning in formal and informal settings. The Improving Undergraduate Education (IUSE) program supports projects that study what works for whom and how to transform undergraduate STEM education.

The opportunities made possible by federal investments in STEM should also serve and draw from the full and diverse talent pool of the Nation. As a natural extension of EDU's experience in broadening participation, EDU serves as the lead directorate and the steward of funds designated for NSF's Eddie Bernice Johnson INCLUDES initiative, supporting collaborative efforts to generate and disseminate knowledge to understand what interventions work, and under what conditions, to broaden participation in STEM. EDU also continues to support the Historically Black Colleges and Universities Undergraduate Program (HBCU-UP), the Improving Undergraduate STEM Education: Hispanic-Serving Institutions (IUSE: HSI) program, and the Tribal Colleges and Universities Program (TCUP). EDU's support facilitates the advancement of early career STEM professionals at MSIs and enhances the academic experiences of students studying STEM at MSIs.

Through its scholarship, fellowship, and traineeship programs, EDU aims to cultivate talent at the undergraduate and graduate levels. EDU programs, such as the Advanced Technological Education (ATE) and NSF Scholarships in STEM (S-STEM), address the Nation's critical need for a skilled technical workforce that reflects the diversity of society and is attractive to employers that offer competitive salaries. The Centers of Research Excellence in Science and Technology (CREST), NSF Research Traineeship (NRT) program, and Graduate Research Fellowship Program (GRFP) provide research experiences needed to participate fully in the workforce of the future. In FY 2025, all four EDU divisions will collaborate to sponsor more opportunities for persons with disabilities.

EDU also supports NSF and Administration priorities through NSF-wide activities. In FY 2025, EDU will continue to support the education and workforce aspects of SaTC and NITRD. Additionally, it partners with TIP on programs, such as Experiential Learning in Emerging and Novel Technologies (ExLENT), Pathways to Enable Open-Source Ecosystems (POSE), and Accelerating Research Translation (ART).

Major Investments

EDU Major Investments

(Dollars in Millions)

Area of Investment ^{1,2}	FY 2023 Base Plan	FY 2024 (TBD)	FY 2025 Request	Change over FY 2023 Base Plan	
				Amount	Percent
Advanced Manufacturing	\$6.00	-	\$7.00	\$1.00	16.7%
Artificial Intelligence	35.00	-	40.00	5.00	14.3%
Biotechnology	9.00	-	9.50	0.50	5.6%
Eddie Bernice Johnson NSF INCLUDES	29.57	-	37.35	7.78	26.3%
Graduate Research Fellowship Program	318.67	-	341.11	22.44	7.0%
Improving Undergraduate STEM Education	92.15	-	97.84	5.69	6.2%
Microelectronics/Semiconductors	-	-	2.00	2.00	N/A
National STEM Teacher Corps	-	-	30.00	30.00	N/A
Quantum Information Science	4.00	-	5.00	1.00	25.0%
Secure & Trustworthy Cyberspace	72.93	-	74.00	1.07	1.5%
STEM Education Postdoctoral Research Fellowship	9.85	-	9.00	-0.85	-8.6%

¹ Major investments may have funding overlap and thus should not be summed.

² This table reflects this directorate's support for selected areas of investment. In other directorate narratives, areas of investment displayed in this table may differ and thus should not be summed across narratives.

To learn more about cross-agency themes and initiatives supported by EDU, including Advanced Manufacturing, Artificial Intelligence, Biotechnology, Improving Undergraduate STEM Education, Microelectronics and Semiconductors, Quantum Information Science, and Secure and Trustworthy Cyberspace, see individual narratives in the NSF-Wide Investments chapter.

- NSF's Eddie Bernice Johnson INCLUDES Initiative: Stewarded by EDU, this program will continue to transform education and career pathways to help broaden participation in STEM and build a diverse, highly skilled American workforce.
- GRFP: For more information on GRFP, which is stewarded by EDU, see the Major Investments in STEM Graduate Education narrative within the Cross Theme Topics section of the NSF-Wide Investments chapter.
- IUSE: EDU will lead the NSF-wide IUSE activity. For more information, see the IUSE narrative within the Cross Theme Topics section of the NSF-Wide Investments chapter.
- The National STEM Teacher Corps will be launched in FY 2024 to create opportunities for EDU, focusing on professional growth of teachers and recruiting diverse STEM educators to advance high-quality teaching and learning in STEM at under-resourced school districts.

EDU Major Investments in Broadening Participation

EDU Programs to Broaden Participation

(Dollars in Millions)

	Amount of Funding Captured	FY 2023 Base Plan	FY 2024 (TBD)	FY 2025 Request	Change over FY 2023 Base Plan	
					Amount	Percent
Broadening Participation: Focused Programs						
ADVANCE	100%	\$18.72	-	\$19.86	\$1.14	6.1%
Advancing Informal STEM Learning (AISL)	100%	68.99	-	71.15	2.16	3.1%
Alliances for Grad Ed & the Professoriate (AGEP)	100%	9.36	-	9.93	0.57	6.1%
Ctrs of Research Excellence in Science & Tech (CREST)	100%	28.58	-	30.31	1.73	6.1%
Eddie Bernice Johnson INCLUDES Initiative (NSF Includes)	100%	29.57	-	37.35	7.78	26.3%
Excellence Awards in Science & Engineering (EASE) ¹	100%	7.29	-	6.73	-0.56	-7.7%
Historically Black Colleges & Univ Undergraduate Prgm (HBCU-UP)	100%	42.38	-	44.94	2.56	6.0%
IUSE: Hispanic Serving Institutions (IUSE:HSI)	100%	52.72	-	55.92	3.20	6.1%
Louis Stokes Alliances for Minority Participation (LSAMP)	100%	54.70	-	55.00	0.30	0.5%
NSF Scholarships in STEM (S-STEM) ²	100%	[144.41]	-	[104.20]	[-40.21]	[-27.8%]
Tribal Colleges & Universities Program (TCUP)	100%	19.71	-	20.90	1.19	6.0%
Subtotal, Focused Programs		\$332.02	-	\$352.09	\$20.07	6.0%
Broadening Participation: Emphasis Programs³						
Computer Science for All (CSforALL)	77%	7.59	-	7.51	-0.08	-1.0%
Discovery Research PreK-12 (DRK-12)	77%	76.11	-	69.09	-7.02	-9.2%
EDU Core Research	73%	59.36	-	54.49	-4.87	-8.2%
Graduate Research Fellowship Program (GRFP)	68%	215.42	-	230.59	15.17	7.0%
Improving Undergraduate STEM Education (IUSE)	77%	70.64	-	75.00	4.36	6.2%
Innovative Technology Experiences for Students & Teachers (ITEST) ²	75%	[36.15]	-	[26.09]	[-10.06]	[-27.8%]
Robert Noyce Teacher Scholarship Program (NOYCE)	65%	43.68	-	43.29	-0.40	-0.9%
Subtotal, Emphasis Programs		\$472.81	-	\$479.97	\$7.17	1.5%
Total, EDU Broadening Participation Programs		\$804.83	-	\$832.06	\$27.24	3.4%

¹ The Excellence Awards in Science and Engineering (EASE) program is comprised of both Presidential Awards for Excellence in Science, Math and Engineering Mentoring (PAESMEM) and Presidential Awards for Excellence in Mathematics and Science Teaching (PAEMST).

² Innovative Technology Experiences for Students and Teachers (ITEST) and NSF Scholarships in Science, Technology, Engineering, and Mathematics (S-STEM) are H1B Visa funded programs.

³ Emphasis Programs have broadening participation as one of several emphases, but broadening participation is not an explicit goal of the program. These programs are included at a percentage of their funding level.

For more information on programs that support EDU Major Investments, see the narratives for individual EDU divisions.

EDU Funding for Centers Programs

EDU Funding for Centers Programs

(Dollars in Millions)

	Division	FY 2023	FY 2024	FY 2025	Change over	
		Base Plan	(TBD)	Request	FY 2023 Base Plan Amount	Percent
Artificial Intelligence Research Institutes	DRL	\$11.91	-	\$11.80	-\$0.11	-0.9%

For detailed information on individual centers programs, please see the Cross Theme Topics section of the NSF-Wide Investments chapter.

Appropriations Language

For detailed information on Appropriations Language, please see the Technical Information chapter.

Explanation of Carryover

For an Explanation of Carryover, please see the Technical Information chapter.

EDU Division Funding by Category¹

(Dollars in Millions)

	FY 2023			Change over	
	Base Plan	FY 2024 (TBD)	FY 2025 Request	FY 2023 Base Plan Amount	Percent
EES	\$254.03	-	\$267.26	\$13.23	5.2%
Research	173.32	-	185.67	12.35	7.1%
Education	80.71	-	81.59	0.88	1.1%
DGE	\$479.42	-	\$502.76	\$23.34	4.9%
Research	18.84	-	18.65	-0.19	-1.0%
Education	460.58	-	484.11	23.53	5.1%
DRL	\$219.79	-	\$218.31	-\$1.48	-0.7%
Research	209.93	-	208.55	-1.38	-0.7%
Education	9.86	-	9.76	-0.10	-1.0%
DUE	\$276.04	-	\$311.67	\$35.63	12.9%
Research	134.13	-	141.27	7.14	5.3%
Education	141.91	-	170.40	28.49	20.1%

¹ For comparability with FY 2025, FY 2023 levels do not include this organization's share of Mission Support Services that were funded through the R&RA and EDU directorates and offices.

DIVISION OF EQUITY FOR EXCELLENCE IN STEM (EES)

EES serves as a focal point for NSF's agency-wide commitment to create and grow a vibrant and diverse U.S. STEM workforce by broadening participation of groups historically underrepresented in STEM—minorities, women, persons with disabilities, and the institutions that serve them—and enhancing the quality and excellence of STEM education and research opportunities. Programs within EES focus on partnerships and collaboration in support of institutional transformation and capacity building that lead to increased STEM participation of underrepresented groups. Including investments in education research that improves STEM education and workforce outcomes, priority is placed on innovative and transformative strategies that are models for achieving full participation of these populations and for providing opportunities for educators, researchers, and institutions, particularly at MSIs. These investments help grow the Nation's diverse STEM talent.

FY 2025 Summary

Research

- AGEP supports STEM faculty career pathway models for advancing doctoral students, postdoctoral scholars, and faculty members who are historically underrepresented. It bolsters efforts to complete awardee site reviews, share best practices and collaborative partnerships findings, and increase networking opportunities through the annual AGEP research conference.
- CREST focuses on building research capacity at MSIs that have undergraduate enrollments of 50 percent or more from members of minority groups underrepresented among advanced degree holders in science or engineering fields. Funding will continue to support CREST centers, the development of research capability through the Research Infrastructure for Science and Engineering component, and research experience and training for early career scientists through the CREST Postdoctoral Research Program, fostering increased collaborations across the centers and building research capacity at minority serving institutions.
- The EDU Core Research (ECR) program supports fundamental research and capacity building initiatives. Funded projects examine persistent and emerging, curiosity-driven, and use-inspired basic research questions with the goal of generating foundational knowledge in three broadly conceived research areas: STEM learning and learning environments, broadening participation in STEM fields, and STEM workforce development. In FY 2025, EDU will continue efforts, through the ECR Building Capacity in STEM Education Research initiative, to build individuals' capacity to conduct research and broaden the pool of researchers that carry out the high-quality STEM education research that enhances the Nation's STEM education enterprise.
- HSI supports the improvement of undergraduate education at HSIs and efforts to build capacity for STEM education and research at HSIs that have previously received little or no funding from NSF. In FY 2025, strategic outreach and engagement efforts will engage institutions that are new to NSF.
- NSF's Eddie Bernice Johnson INCLUDES Initiative funds broadening participation projects and related research through INCLUDES Alliances and other existing NSF broadening participation portfolio programs, including pilot projects that serve as on-ramps to the INCLUDES Alliances and the INCLUDES National Network.
- TCUP funding supports the design, implementation, and assessment of comprehensive institutional improvements in STEM instruction to advance the quality of student preparation in STEM at tribal colleges and universities (TCUs). It also invests in projects that build and enhance STEM research capacity at TCUs. In FY 2025, TCUP will continue to support eligible institutions

through the TCUP Enterprise Advancement Centers and partner with tribal communities to enhance their ability to respond to community needs.

Education

- ADVANCE invests in evidence-based systemic change strategies to promote equity in STEM academic workplaces and support adaptation of successful practices for achieving institutional change.
- Excellence Awards in Science and Engineering (EASE) coordinates and supports the Presidential Awards for Excellence in Mathematics and Science Teaching (PAEMST) and Presidential Awards for Excellence in Science, Mathematics, and Engineering (PAESMEM) awards.
- HBCU-UP invests in research projects for HBCU STEM faculty, enhances the academic experience of students, increases the number of students completing STEM degrees, and supports institutional transformation efforts. Additionally, it supports broadening participation research through its HBCU-UP Broadening Participating Research Centers. In FY 2025, HBCU-UP will continue the aforementioned efforts and will conduct strategic outreach and engagement with HBCUs to increase awareness of HBCU-UP and, equally as important, to increase proposal submissions.
- Louis Stokes Alliances for Minority Participation (LSAMP) supports broadening participation in STEM research and evaluation to expand knowledge about effective strategies for student recruitment, retention, and persistence in STEM programs. It emphasizes evidence-based interventions to increase STEM baccalaureate degree production, particularly mentoring and early experiential research experiences nationally and abroad, and continue support for STEM post-baccalaureate activities at transfer and transition points through the Bridges to the Baccalaureate and Bridges to the Doctorate tracks.

DIVISION OF GRADUATE EDUCATION (DGE)

DGE provides leadership for cross-Foundation investments that support a diverse cadre of U.S. graduate students in STEM, including STEM education research. It hosts programs that fund improvement and innovation in graduate education. DGE contributes to attainment of NSF's vision of U.S. leadership in science and engineering research and innovation without barriers to participation. DGE's efforts support a globally competitive U.S. graduate education enterprise advancing STEM innovation, research, scholarship, diversity, and education. Programs managed by DGE make direct investments in individuals; fund research and implementation science projects that spearhead the development and implementation of bold, new, and potentially transformative models for STEM education; support programs that offer traineeships in high priority interdisciplinary or convergent research areas; provide scholarships for students who will contribute to the government's cybersecurity activities; and enable basic research on STEM education. Special emphasis is given to training students in areas of national priority. The outcomes of research and evaluation of DGE programs is expanding the knowledge base that informs successful models, practices, and approaches for the preparation of a STEM professional workforce ready to advance the frontiers of science and engineering and to assume leadership roles in industry, government, and academia.

FY 2025 Summary

Research

- The ECR program supports fundamental research and capacity building initiatives. Management

and funding for ECR is shared collectively by all EDU divisions. For a full description, see the EES Division narrative.

Education

- GRFP is funded in the DGE budget line, totaling \$341.11 million to support 2,300 new fellowships, with a cost of education allowance of \$16,000 and a stipend of \$37,000 per fellow.
- NRT aims to advance transformative efforts that combine interdisciplinary training with innovative professional development activities, to educate the next generation of scientists, including those from groups currently underrepresented in STEM fields. Students affiliated with graduate programs funded through the NRT program learn to address convergent research problems in areas of national need and to prepare for leadership roles in emerging industries. In FY 2025, the NRT monitoring and evaluation efforts will continue to collect data from existing programs to inform future solicitations. The Innovations in Graduate Education (IGE) program, a component of NRT, will continue to focus on research designed to produce models that can spur national improvements in graduate education. IGE's Innovation Acceleration Hub serves as a vehicle for disseminating the results of IGE projects to the entire STEM graduate education community. It is the program's way of promoting knowledge mobilization among the graduate education community in STEM.
- CyberCorps®: Scholarship for Service (SFS) aims to strengthen the Nation's capacity to provide students with the high-quality curriculum to prepare them to contribute expertise to the cybersecurity mission of the government upon graduation. SFS support allows institutions to conduct research to improve and enhance the preparation of students for a variety of cybersecurity professions. It provides support for projects addressing cybersecurity issues related to AI, and also invests in the cybersecurity education and workforce development component of NSF's Secure and Trustworthy Cyberspace: Education (SaTC:EDU) investment area, by providing support for projects that focus on education at the intersection of AI and cybersecurity.
- The STEM Education Postdoctoral Research Fellowship program was formally established in FY 2023 to support postdoctoral awards designed to enhance the research knowledge, skills, and practices of recent doctoral graduates in STEM, STEM education, and related disciplines, with a goal of advancing their preparation to engage in fundamental and applied research in STEM education.

For more information about GRFP and NRT, see the Major Investments in STEM Graduate Education narrative within the Cross Theme Topics section of the NSF-Wide Investments chapter.

DIVISION OF RESEARCH ON LEARNING IN FORMAL AND INFORMAL SETTINGS (DRL)

DRL invests in foundational research to advance understanding about teaching and learning in STEM, across settings ranging from preK-12 schools to the Nation's science centers and museums. Investments address learning in all STEM fields—including computer science and emerging fields such as data science, QIS, and AI. With a focus on equity, the DRL portfolio addresses the design, implementation, and study of learning environments, models, and online learning platforms intended to enable optimal STEM learning and teaching for all students—particularly those who have been underrepresented in STEM—through both formal and informal activities across the STEM ecosystem. Advances in STEM teaching and learning, ultimately, support individuals who pursue STEM careers, as well as the Nation's broader workforce that will increasingly require STEM knowledge. DRL's programs inform and support lifelong access to high-quality STEM teaching and learning opportunities in both

formal and informal settings.

FY 2025 Summary

Research

- The Advancing Informal STEM Learning (AISL) program supports design, adaptation, implementation, and research on innovative modes of lifelong learning in informal environments such as science museums, community centers, and public media that have been economically challenged and serve vulnerable populations. Emphases will include equity in STEM, workforce development, adult and family learning of STEM, public participation in scientific research, remote/online learning, and climate education.
- The Discovery Research pre-K-12 (DRK-12) program focuses on research and development of resources, models, and tools to help U.S. pre-K-12 students learn STEM, including computer science and emerging fields such as data science, quantum information science, and artificial intelligence. Students benefit from a strong start in STEM education beginning in early childhood. DRK-12 supports research and development of resources for teachers and schools across diverse educational settings, including remote/online learning environments.
- The ECR program supports fundamental research and capacity building initiatives. Management and funding for ECR is shared collectively by all EDU divisions. For a full description, see the EES Division narrative.
- The National Artificial Intelligence Research Institutes program supports research on AI in relation to education and the workforce, with an emphasis on Augmented Learning for Individuals with Disabilities. The overall goal of the institutes is to improve learning and education, by incorporating AI into educational technology and anticipating how future workplaces will be changed by AI. There will be a particular focus on the changing roles of human teachers/educators, mentors, and collaborators, and the changing nature of educational systems and workforce needs.
- The Research on Innovative Technologies for Enhanced Learning (RITEL) program – created in FY 2024 – supports advances in educational technology (e.g., AI, virtual and augmented reality, data analytics) and education research, with an emphasis on the most pressing needs of authentic educational environments and their teachers and learners. Projects explicitly address how educational technology is used to improve learning outcomes, especially among underrepresented populations in STEM and individuals who attend under-resourced school systems.

Education

- The Computer Science for All (CSforAll) program addresses the national need to build computer science education opportunities and teacher preparation at the preK-12 level, as part of building the U.S. economy. CSforAll projects are expected to address equity issues in computer science education, including the participation of girls and women, and other underrepresented groups. In FY 2025, CSforAll will be supported at \$9.76 million in EDU, with an additional \$10.0 million in support from CISE.

DIVISION OF UNDERGRADUATE EDUCATION (DUE)

DUE supports excellence in undergraduate STEM education for all students and among all institutional types in postsecondary education. DUE projects strengthen STEM education at two- and four-year colleges and universities. These projects include support for the design, development, and implementation of high-quality educational experiences, as well as scientific research to understand the effectiveness and impacts of those experiences. DUE's investments promote educational innovations across the full range of public and private U.S. institutions of higher education, which can help to increase retention and degree attainment by undergraduates. STEM graduates have more employment opportunities and career options, as well as greater lifetime earning potential.

In FY 2025, DUE plans to invest in programs and projects that enhance students' learning experiences and prepare students to enter careers in traditional, mature STEM fields as well as emerging fields and technologies that are vital to the U.S. economy, such as advanced manufacturing, AI, biotechnology, quantum information science and engineering (QISE), and microelectronics and semiconductors. Additionally, DUE is laser-focused on growing and developing the current and next generation of STEM educators (K-16), advancing fundamental and applied research in STEM education, and supporting the adaptation, implementation, and dissemination of those research findings.

DUE makes investments focused on broadening participation in the future STEM workforce to help the Nation meet STEM workforce needs. DUE especially focuses on activities aimed to increase proposal submissions from a diverse array of institutions, including two-year colleges, MSIs, rural institutions, predominantly undergraduate institutions, emerging research institutions, and institutions in EPSCoR jurisdictions. To expand the impact of DUE programs, the division makes asserted efforts to strengthen and grow its partnerships and collaborations with other NSF divisions and directorates, federal agencies, private industry, and philanthropic communities. For example, DUE partners closely with the TIP Directorate to run the Experiential Learning in Emerging and Novel Technologies (ExLENT) program, which supports experiential learning opportunities for individuals from diverse educational and professional backgrounds in order to increase their access to, and interest in, career pathways in emerging technology fields.

FY 2025 Summary

Research

- The ECR program supports fundamental research and capacity building initiatives. Management and funding for ECR is shared collectively by all EDU divisions. For a full description, see the EES Division narrative.
- HSI enables the improvement of undergraduate education at HSIs and supports the capacity for STEM education and STEM education research at HSIs that have previously received little or no funding from NSF. Outreach efforts will continue to seek to engage institutions that are new to NSF.
- IUSE enables the study of evidence-based educational practices; understanding of and gains in diversity, equity, and inclusion in STEM education; advancements in the knowledge base concerning undergraduate research, including course-based undergraduate research; development or identification of indicators, metrics, and assessments to measure readiness for and progress toward institutional and national improvements in undergraduate STEM education;

and educational innovations arising from emerging technologies (AI, data science, etc.) For more information, see the IUSE narrative in the Cross Theme Topics section of the NSF-Wide Investments chapter.

Education

- ATE supports the understanding and development of effective preparation that will educate the skilled technical workforce, including technicians in advanced technological industries such as advanced manufacturing.
- Noyce invests in teacher preparation and supports teacher leaders during completion of a teaching obligation in high-need school districts. It also enables the study of effective K-12 STEM pre-service teacher preparation and the retention and development of in-service teachers in high-need school districts. In FY 2025, outreach and engagement efforts will continue to focus on institutions that are new to NSF, emerging research institutions, and MSIs.
- The National STEM Teacher Corps initiative is designed to provide more opportunities for teacher leaders, enabling them to boost their professional activities and provide opportunities for them to use their skills and expertise as a resource for improving K-12 STEM education. In other words, it offers opportunities for the professional growth of teachers, with a focus on recruiting diverse STEM educators. The National STEM Teacher Corps aims to bring greater attention and recognition to outstanding STEM teachers in today's classrooms, reward them for their accomplishments, elevate their public profile, and create rewarding career paths in which all STEM teachers can aspire, both to prepare the future STEM workforce and create a scientifically literate public.

H-1B NONIMMIGRANT PETITIONER FEES

\$138,930,000

In FY 2025, H-1B Nonimmigrant Petitioner Fees are projected to be \$138.93 million.

H-1B Nonimmigrant Petitioner Fees Funding

(Dollars in Millions)

	FY 2023 Base Plan	FY 2024 (TBD)	FY 2025 Request	Change over FY 2023 Base Plan	
				Amount	Percent
H-1B Nonimmigrant Petitioner Fees Funding	\$192.54	-	\$138.93	-\$53.61	N/A

Beginning in FY 1999, Title IV of the American Competitiveness and Workforce Improvement Act (ACWIA) of 1998 (P.L. 105-277) established an H-1B Nonimmigrant Petitioner Account in the general fund of the U.S. Treasury for fees collected for each petition for alien nonimmigrant status. The Congressional statute requires that a prescribed percentage of funds in the account be made available to NSF for scholarships to low-income STEM students; grants for mathematics, engineering, or science enrichment courses; and systemic reform activities. In FY 2005, Public Law 108-447 reauthorized H-1B funding. NSF was provided with 40 percent of the total H-1B receipts collected. Thirty percent of H-1B receipts (75 percent of the receipts that NSF receives) are to be used for a low-income scholarship program, NSF Scholarships in Science, Technology, Engineering, and Mathematics (S-STEM). Ten percent of receipts (25 percent of the receipts that NSF receives) are designated for support of private-public partnerships in K-12 education through Innovative Technology Experiences for Students and Teachers (ITEST).

NSF Scholarships in Science, Technology, Engineering, and Mathematics (S-STEM)

S-STEM began in 1999 under P.L. 105-277. Originally named Computer Science, Engineering, and Mathematics Scholarships (CSEMS). It supports grants for scholarships to academically talented, low-income students with financial need pursuing associate, baccalaureate, or graduate degrees in computer science, computer technology, engineering, engineering technology, or mathematics. Grantee institutions awarded scholarships of up to \$2,500 per year for two years to eligible students. The CSEMS activity continued under the American Competitiveness in the 21st Century Act (P.L. 106-313) with a prescribed percentage of H-1B receipts (22 percent), which totaled approximately 59.5 percent of the total H-1B funding for NSF. P.L. 106-313 also amended P.L. 105-277 by increasing the maximum scholarship duration to four years and the annual stipend to \$3,125.

Under the Consolidated Appropriations Act, 2005 (P.L. 108-447), the prescribed percentage of H-1B receipts available for the low-income scholarship program was increased to 30 percent (approximately 75 percent of the total H-1B funding for NSF). Eligibility for the scholarships was expanded from the original fields of computer science, engineering, and mathematics to include "other technology and science programs designated by the Director." To reflect the expansion to additional STEM fields, the program was renamed (in 2006) from CSEMS to S-STEM. In addition, the maximum annual scholarship award amount was raised from \$3,125 to \$10,000, and language was added allowing NSF to use up to 50 percent of funds "for undergraduate programs for curriculum development, professional and workforce development, and to advance technological education."

Section 10393 of the CHIPS and Science Act of 2022 (Public Law. 117-167) removed language that limited the scholarship amount to \$10,000 per year and lengthened the maximum scholarship duration to five years. Thus, the maximum individual scholarship amounts were increased from \$10,000 to \$15,000 per year for undergraduate students and from \$10,000 to \$20,000 per year for graduate students for a maximum duration of five years.

- Low-income Scholarship Program: S-STEM. S-STEM provides institutions with funds for student scholarships to encourage and enable academically talented low-income U.S. students with unmet financial need to complete an associate, baccalaureate, or graduate degree in fields of science, technology, engineering, or mathematics. Earning these degrees enables the graduates to enter the STEM workforce or STEM graduate school. The program emphasizes the importance of recruiting students to STEM disciplines, mentoring them through degree completion, and partnering with employers to facilitate student career placement in the STEM workforce.

Since its inception, the low-income scholarship program has received more than 8,900 proposals from all types of colleges and universities and has made more than 2,390 awards. In addition to scholarships, S-STEM awards also provide funding for student support activities such as faculty mentoring, academic support, curriculum development, leadership development, and internships. These high-impact activities are known to be effective for recruiting and retaining students in high-demand technology-rich fields through graduation and into employment.

In FY 2025, in addition to scholarship support, all S-STEM projects will continue to conduct activities to inform the understanding of interventions that affect STEM degree attainment by academically talented, low-income U.S. students with unmet financial need. S-STEM projects report much higher retention and graduation rates among their scholarship students than among other students majoring in STEM fields. As a result, research on S-STEM projects can help the Nation understand effective practices to support STEM degree attainment at scale. To this end, the S-STEM program, through the S-STEM NET solicitation¹, fosters a network of S-STEM stakeholders and further develops the infrastructure needed to generate and disseminate new knowledge, successful practices, and effective design principles arising from NSF S-STEM projects nationwide. The program is able to synthesize current achievements and investigate evolving barriers to the success of this student population and disseminate the context and circumstances by which interventions and practices that support graduation of domestic low-income students pursuing careers in STEM are successful.

Approximately 60 new awards are anticipated in FY 2025. The program will emphasize increasing the involvement of community colleges, especially Hispanic Serving Institutions (HSIs), and increasing the number of community college students who receive scholarships, especially students in technician education programs. S-STEM will continue to partner with the NSF's Eddie Bernice Johnson INCLUDES Initiative. S-STEM programming and research will also align with the NRT program, with the goal of enhancing effective learning environments and pathways for students on the continuum from two-year to four-year to master's and doctoral degrees.

¹ <https://new.nsf.gov/funding/opportunities/scholarships-stem-network-s-stem-net>

Private-Public Partnerships in K-12

The American Competitiveness in the 21st Century Act (P.L. 106-313) amended P.L. 105-277 and changed the way petitioner fees were to be expended. P.L. 106-313 directed the remaining 40.5 percent of the total H-1B funding for NSF (15 percent of H-1B receipts) toward preK-12 activities, involving private-public partnerships in a range of areas such as materials development, student externships, and mathematics and science teacher professional development. ITEST was developed as a partnership activity in preK-12 to increase opportunities for students and teachers to learn, experience, and use information technologies within the context of STEM, including information technology (IT) courses. In FY 2005, P.L. 108-447 reduced the prescribed percentage of H-1B receipts available for private-public partnerships in K-12 to 10 percent (about 25 percent of the total H-1B funding for NSF).

- Private-Public Partnerships in K-12: ITEST. ITEST invests in preK-12 activities addressing the ongoing and growing need for STEM professionals and information technology workers in the U.S. and seeks solutions to help ensure the breadth and depth of the U.S. STEM workforce. Stated differently, ITEST funds activities for students and teachers that emphasize mathematics, science, and engineering and computer science careers, and emphasizes the importance of evaluation and research to understand the impact of such activities. Further, the program supports research studies and the testing, development, implementation, and scale-up of innovations and models to improve the STEM workforce and build a student's capacity to participate in the STEM workforce. The solicitation places emphasis on capturing and establishing a reliable knowledge base about the dispositions toward and knowledge about STEM workforce skills in U.S. students. In fact, one of the three ITEST program pillars is partnerships for career and workforce preparation.

Since its inception, the ITEST program has received more than 5,100 grant proposals and made over 750 awards (including co-funded projects), allowing preK-12 students and teachers to work closely with scientists, engineers, and other STEM professionals on extended research projects that promote awareness of STEM careers and interest in pursuing education pathways to those careers. ITEST also encourages proposals related to emerging industries, such as AI, data science, quantum information science, and microelectronics. Funded projects draw on a wide mix of community partnerships, including universities, industry, museums, science and technology centers, and school districts to identify the characteristics that attract a wide and diverse range of young people to STEM careers, especially those students historically underrepresented in those careers. ITEST anticipates making over 40 new awards in FY 2025.

H-1B Financial Activities from FY 2014 - FY 2023

(Dollars in Millions)

	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Receipts	\$132.49	\$143.00	\$138.80	\$141.07	\$155.99	\$156.72	\$153.03	\$213.50	\$189.94	\$134.94
Annual receipts due to NSF								153.50		
DOL 2020 temporary rescission to NSF								60.00		
Unobligated Balance start of year	\$108.31	\$111.39	\$116.02	\$74.63	\$96.86	\$64.68	\$77.47	\$124.67	\$141.77	\$51.14
Appropriation Previously unavailable (Sequestered)	\$5.10	\$9.54	\$7.30	\$6.80	\$9.73	\$10.30	\$9.72	\$9.03	\$8.75	\$10.83
Appropriation Currently unavailable (Sequestered)	-\$9.54	-\$7.30	-\$6.80	-\$9.73	-\$10.30	-\$9.72	-\$9.03	-\$8.75	-\$10.83	-\$7.69
Rescission								-\$60.00		
Obligations incurred:										
Scholarships in Science, Technology, Engineering, and Mathematics	92.18	109.34	140.54	84.38	156.40	114.76	79.91	94.70	243.69	83.99
Private-Public Partnership in K-12 ¹	37.23	29.83	44.35	35.11	35.86	34.24	34.87	51.81	34.79	31.98
Total Obligations	\$129.41	\$139.17	\$184.89	\$119.49	\$192.26	\$149.00	\$114.78	\$146.51	\$278.47	\$115.97
Unallocated Recoveries	-	4.95	1.60	3.58	4.66	4.49	8.26	5.30	-0.01	6.79
Unobligated Balance end of year	\$111.39	\$122.41	\$72.03	\$96.86	\$64.68	\$77.47	\$124.67	\$137.24	\$51.15	\$80.04

¹ P.L. 108-447 directs that 10 percent of the H-1B Petitioner funds go toward K-12 activities involving private-public partnerships in a range of areas such as materials development, student externships, math and science teacher professional development, etc.

Explanation of Carryover

For an Explanation of Carryover, please see the Technical Information chapter.

