

EDU

Directorate for STEM
Education



Mission & Investments

“To develop a diverse and well-prepared U.S. STEM workforce and STEM-literate public by supporting excellent research and development in STEM education.”



STEM Learning
and Learning
Environments



Broadening
Participation &
Institutional
Capacity



STEM
Professional
Workforce
Development



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Directorate for STEM Education



Office of the Assistant Director – Directorate for STEM Education

Division of Research on Learning in Formal & Informal Settings (DRL)	Division of Graduate Education (DGE)	Division of Undergraduate Education (DUE)	Division of Equity for Excellence in STEM (EES)
EDU Core Research (ECR) ¹ , Building Capacity in Science Education Research (ECR: BC SER) ¹			
Racial Equity in STEM Education (EDU Racial Equity) ¹			
STEM Education Postdoctoral Research Fellowships (STEM Ed IPRF and OPRF) ¹			
Faculty Early Career Development Program (CAREER) ²			
Advancing Informal STEM Learning (AISL)	CyberCorps®: Scholarship for Service (SFS)	Advanced Technological Education (ATE)	Increasing the Participation and Advancement of Women in Academic Science & Engineering Careers (ADVANCE) ⁷
National Artificial Intelligence Research Institutes ⁵	Graduate Research Fellowship (GRFP) ²	Improving Undergraduate STEM Education: Education and Human Resources (IUSE: EDU)	Alliances for Graduate Education and the Professoriate (AGEP)
Computer Science for All (CS for All: RPP) ⁵	Innovations in Graduate Education (IGE)	Improving Undergraduate STEM Education: Hispanic Serving Institutions (HSI: ELPSE & HSI: ETSE) ⁴	Centers of Research Excellence in Science and Technology (CREST)
Discovery Research PreK-12 (DRK-12)	NSF Research Traineeship Program (NRT) ²	NSF Scholarships in STEM (S-STEM) ³	Historically Black Colleges and Universities Undergraduate Program (HBCU-UP)
Innovative Technology Experiences for Students and Teachers (ITEST) ³	Secure and Trustworthy Cyberspace (SaTC) ⁵	Robert Noyce Teacher Scholarship Program (NOYCE)	Improving Undergraduate STEM Education: Hispanic Serving Institutions (HSI: ELPSE & HSI: ETSE) ⁴
Research on Innovative Technologies for Enhanced Learning (RITEL) ⁵		National STEM Teacher Corps Pilot Program (STEM Teacher Corps)	Louis Stokes Alliances for Minority Participation (LSAMP)
		IUSE: Innovation Two-Year College STEM Education (ITYC)	NSF's Eddie Bernice Johnson Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering (INCLUDES) ⁷
			Presidential Awards for Excellence in Mathematics and Science Teaching (PAEMST) ⁶
			Presidential Awards for Excellence in Science, Mathematics and Engineering Mentoring (PAESMEM) ⁶
			Tribal Colleges and Universities Program (TCUP)

The most up-to-date information is on the [nsf.gov/edu](https://www.nsf.gov/edu) website.

1. Cross-Directorate
2. NSF-Wide
3. H-1B Visa Fee Funded
4. Stewarded by DUE and EES
5. Co-Managed with another Directorate
6. On behalf of OSTP
7. NSF-Wide stewarded by EES

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SUPPORT and **PROMOTE** activities that seek to strengthen STEM education for **underserved communities**, broaden their participation in the workforce, and add to our knowledge base about programs of inclusion.



Division of Equity for Excellence in STEM (EES)

<https://www.nsf.gov/div/index.jsp?div=EES>

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ADVANCE: Organizational Change for Gender Equity in STEM Academic Professions

*NSF 20-554 – Deadline: August 5, 2024 (Letter of Intent (LOI)
(required))*

- Issues grant awards to institutions of higher education and other organizations to address systemic gender-based inequities impacting STEM faculty with systemic change strategies.



<https://new.nsf.gov/funding/opportunities/advance-organizational-change-gender-equity-stem>

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Alliances for Graduate Education and the Professoriate (AGEP)

*NSF 21-576 – Deadline: February 11, 2025 (preliminary proposal
required)*

- Goal: To increase the number of minority faculty in STEM.
- Advancing academic STEM career pathway models and systemic institutional change.
- Alliances promote equity and the professional advancement of doctoral candidates, postdoctoral researchers and faculty in STEM academic careers.



<https://new.nsf.gov/funding/opportunities/alliances-graduate-education-professoriate-agep>

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Centers of Research Excellence in Science and Technology (CREST Centers)

NSF 23-595 – Deadline: First Friday in December

- CREST Center awards provide support to enhance the research capabilities of Minority-serving institutions (MSIs) through the establishment of centers that effectively integrate education and research.

<https://new.nsf.gov/funding/opportunities/centers-research-excellence-science-technology-0>

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EPSCoR Centers of Research Excellence in Science and Technology (EPSCoR CREST)

NSF 24-575 – Deadline: December 06, 2024

- EPSCoR CREST Center awards provide support to enhance the research capabilities of institutions in EPSCoR jurisdictions.



<https://new.nsf.gov/funding/opportunities/centers-research-excellence-science-technology-0>

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Centers of Research Excellence in Science and Technology – Research Infrastructure for Science and Engineering (CREST-RISE)

NSF 24-562 – Deadline: August 02, 2024

- CREST-RISE STEM Doctoral Programs Support Initiative (DPSI)
- CREST-RISE Research Advancement and Development (RAD)
- CREST-RISE Equipment & Instrumentation (E&I)

<https://new.nsf.gov/funding/opportunities/centers-research-excellence-science-technology-0>

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CREST-Postdoctoral Research Program

NSF 23-555 – Deadline: First Friday in October



- Provide two years of support for research experience and training for early career scientists at active CREST Centers.

<https://new.nsf.gov/funding/opportunities/centers-research-excellence-science-technology-0>

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Historically Black Colleges and Universities Undergraduate Program (HBCU-UP)

*NSF 23-563 – Deadlines: Multiple, starting July 23,
2024 (see website)*

- Supports development, implementation, and study of evidence-based, innovative models and approaches to prepare HBCU undergraduates for the STEM workforce.
- Bolsters STEM faculty research capacity and professional development.
- Encompasses broadening participation research in STEM Education.



<https://new.nsf.gov/funding/opportunities/historically-black-colleges-universities-1>

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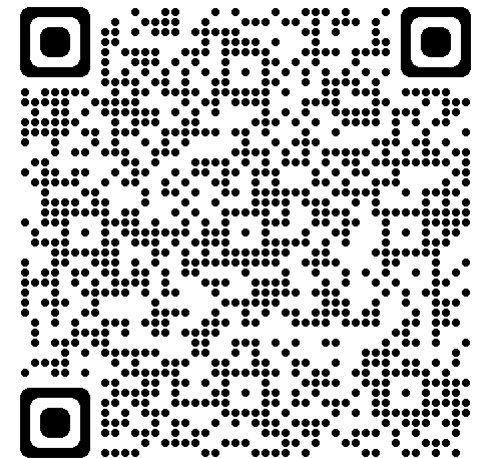
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Louis Stokes Alliances for Minority Participation (LSAMP)

NSF 24-563 – Deadline: June 24th and November 15th, 2024

Transforming STEM education to support historically underrepresented students

- Innovative, evidence-based recruitment, retention, and graduation strategies (alliance-based, centers and pathways)
- Enable successful transfer of students from 2-yr to 4-yr institutions (Bridge to the Baccalaureate)
- Increase access to high-quality research experiences
- Facilitate seamless transition of students into graduate programs (Bridge to the Master's/Doctorate)



<https://new.nsf.gov/funding/opportunities/louis-stokes-alliances-minority-participation>

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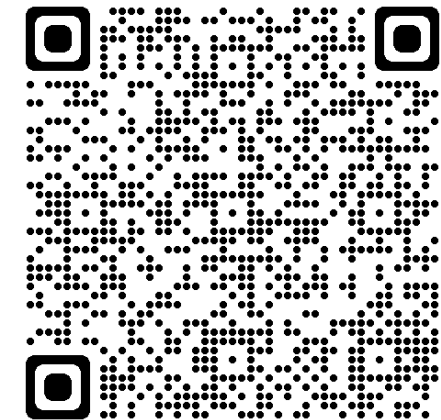
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NSF's Eddie Bernice Johnson Inclusion Across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering (INCLUDES)

NSF 22-622 – Deadline: October 22, 2024

- Two tenets:
 - ✓ Broadening participation in STEM at scale
 - ✓ Building collaborative infrastructure



<https://new.nsf.gov/funding/opportunities/inclusion-across-nation-communities-learners>

<https://www.includesnetwork.org/home>

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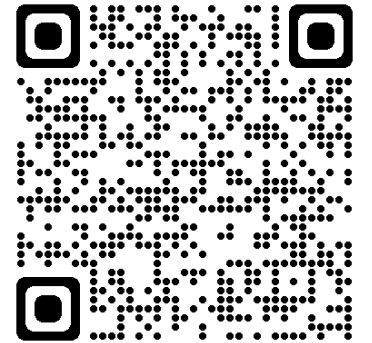
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Tribal Colleges and Universities Program (TCUP) *NSF 21-595 – Deadline: Multiple, starting June 3, 2024 (see website)*



- **Instructional Capacity Excellence in TCUP Institutions (ICE-TI):** support for transformational STEM instruction and research
- **Targeted STEM INFUSION Projects (TSIP):** similar but smaller in scale and impact
- **Small Grants for Research (SGR):** supports STEM or STEM education research
- **TCU Enterprise Advancement Centers (TEA Centers):** paradigm-shifting support to the TCUP institution as an intellectual resource



<https://new.nsf.gov/funding/opportunities/tribal-colleges-universities-program-tcup>

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INVESTS in the improvement of STEM learning for people of all ages by promoting innovative research, development, and evaluation of learning and teaching across all STEM disciplines in formal and informal learning settings.



Division of Research on Learning in Formal and Informal Settings (DRL)

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Advancing Informal STEM Learning (AISL)

NSF 22-626 – Deadline: January 8, 2025

- Seeks to fund:
 - ✓ Research and practice, with continued focus on investigating a range of informal STEM learning experiences and environments that make lifelong learning a reality.
 - ✓ Proposals that center equity and belonging, and further the well-being of individuals and communities who have historically been and continue to be excluded, underserved, or underrepresented.
 - ✓ High-quality plans to generate knowledge through research, evaluation, and practice.



<https://new.nsf.gov/funding/opportunities/advancing-informal-stem-learning-aisl>

InformalScience.org

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Discovery Research PreK-12 (DRK-12)

NSF 23-596 – Deadline: November 13, 2024

- **Goal:** to catalyze research and development that enhances all preK-12 teachers' and students' opportunities to engage in high-quality learning experiences related to the sciences, technology, engineering, and mathematics (STEM).
- Awards made across all facets of formal PreK-12 STEM education.



<https://new.nsf.gov/funding/opportunities/discovery-research-prek-12-drk-12>

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Innovative Technology Experiences for Students and Teachers (ITEST)

NSF 22-585 – Deadline: August 09, 2024

- Goal: To advance educational innovations that motivate and prepare PreK-12 learners for computationally-intensive industries of the future.
 - ✓ Engage students in technology-rich learning to develop disciplinary and/or transdisciplinary STEM content knowledge, including skills in data literacy and evidence-based decision-making and reasoning.
 - ✓ Prioritize the full inclusion of groups who have been underrepresented and/or underserved in the STEM and information and communication technologies (ICT) workforce.
 - ✓ Motivate students to pursue appropriate education pathways to technology-rich careers.
 - ✓ Leverage strategic and community partnerships to expand education pathways in communities through public and private partnerships.



<https://new.nsf.gov/funding/opportunities/innovative-technology-experiences-students>

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STRENGTHEN STEM education at two- and four-year colleges and universities by improving curricula, instruction, laboratories, infrastructure, assessment, diversity of students and faculty, and collaborations.



Division of Undergraduate Education (DUE)

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<https://www.nsf.gov/div/index.jsp?div=DUE>

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Mission & Investments

“To promote excellence
in undergraduate
STEM education for
ALL students.”



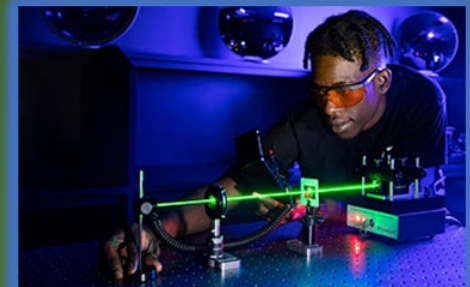
Provide
Leadership



Support
Curriculum
Development



Prepare the
Workforce



Foster
Connections



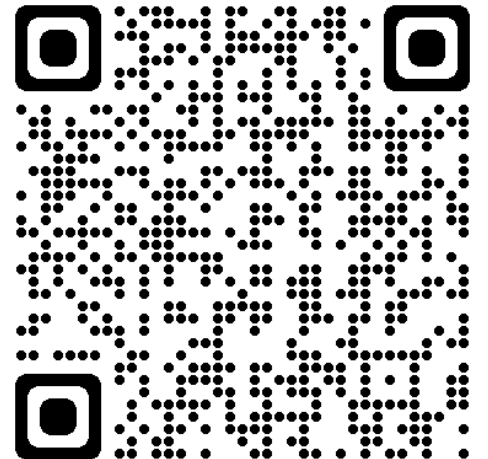
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Advanced Technological Education (ATE) *NSF 21-598 – Deadline: First Thursday in October*

- Focusing on the education of highly-qualified science and engineering technicians for advanced technology fields that drive our nation's economy.
- Improving STEM education of science and engineering technicians with a focus on two-year public community and technical colleges.



<https://new.nsf.gov/funding/opportunities/advanced-technological-education-ate>

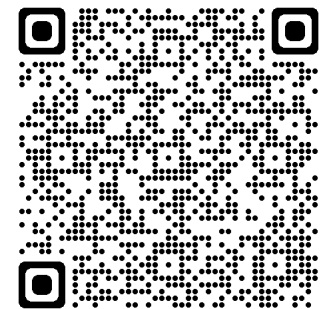
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Improving Undergraduate STEM Education: Directorate for STEM Education (IUSE: EDU) *NSF 23-510 – Deadlines: Third Wednesday in January and July*

- Promoting discovery of new evidence-based interventions to improve undergraduate STEM teaching and learning.
- Transforming institutions and STEM communities through the adoption and implementation of best practices in undergraduate STEM teaching and learning.
- Supporting diversity and inclusion in STEM by advancing knowledge and adoption of effective STEM education for all.



<https://new.nsf.gov/funding/opportunities/improving-undergraduate-stem-education-directorate>

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IUSE: Innovation in Two-Year College STEM Education (ITYC)

NSF 23-584 – Deadline: Second Wed. in December



- Center students in the effort to advance innovation, promote equitable outcomes and broaden participation for all students in STEM education at two-year colleges.
- Enhance the capacity of two-year colleges to harness the talent and potential of their diverse student and faculty population through innovative disciplinary, multi-department, and college-wide efforts.
- Track 1: A Focus on the Academic Experiences of Two-Year College Students.
- Track 2: Leveraging Institutional Strengths and Innovation.



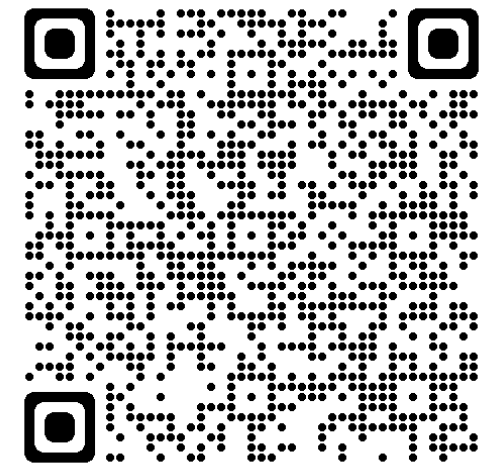
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NSF Scholarships in STEM (S-STEM)

NSF 24-511 – Deadline: First Tuesday in March

- Addressing the need for a high-quality scientific workforce in STEM disciplines.
- Providing grants to institutions to support the increased success of low-income, academically talented students with demonstrated unmet financial need.



<https://new.nsf.gov/funding/opportunities/nsf-scholarships-science-technology-engineering>

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National STEM Teacher Corps Pilot

NSF 24-577 – October 1, 2024

- **Elevate** STEM teacher profession recognizing a diverse cadre of outstanding STEM educators that advance equity in PreK–12.
- **Select** STEM Teacher Corps members to serve as professional models to which all teachers can aspire.
- **Reward** teachers for their accomplishments & elevate their public profile.
- **Support** the professional development of STEM teachers, including support for teachers certified in non-traditional or alternative methods.



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<https://new.nsf.gov/funding/opportunities/robert-noyce-teacher-scholarship-program-0>

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Robert Noyce Teacher Scholarship Program (NOYCE) *NSF 23-586 – Last Tuesday in August*

- Addressing the critical need for highly effective K-12 STEM teachers and teacher leaders by recruiting, preparing, and retaining talented STEM undergraduates and professionals for teaching careers.
- Researching effectiveness and retention of STEM teachers in high-need school district.
- Research experiences in STEM settings for pre-service and in-service teachers.



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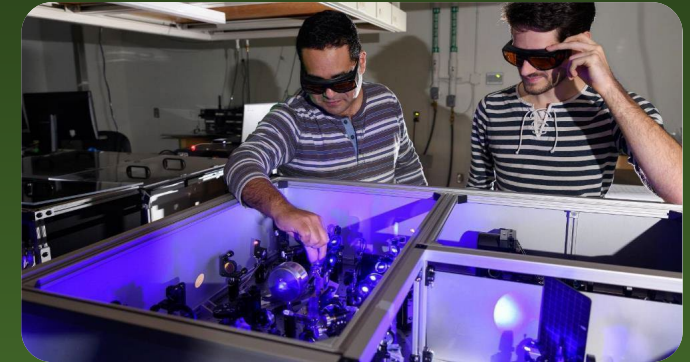
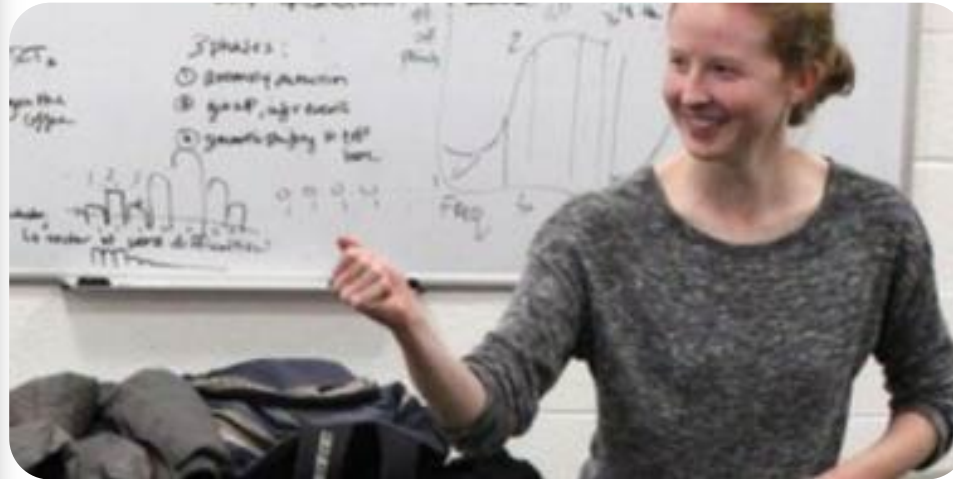
<https://new.nsf.gov/funding/opportunities/robert-noyce-teacher-scholarship-program-0>

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MISSION: Enable and inspire an inclusive, equitable, and globally competitive U.S. STEM workforce by supporting students, research, scholarship, and innovations in graduate education.



Division of Graduate Education (DGE)

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<https://www.nsf.gov/div/index.jsp?div=DGE>

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CyberCorps®: Scholarship for Service (SFS)

NSF 23-574 – Deadline: July 15, 2024

Goal: Increase the number and diversity of qualified cybersecurity professionals prepared to serve the cybersecurity mission of the government.

- Aligns with NSF Statutory Mission to secure the national defense.
- Institutions of higher education provide scholarships to undergraduate and graduate students pursuing degrees related to cybersecurity.
- After graduation, scholarship recipients serve the cybersecurity mission of the government for a period equal to the length of their scholarship.
- Partnership with Office of Personnel Management and the Department of Homeland Security.
- 12-16 awards/year; ~\$2.5-\$4MM; 5-year duration



<https://new.nsf.gov/funding/opportunities/cybercorps-scholarship-service-sfs-0>

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Secure and Trustworthy Cyberspace (SaTC)

NSF 24-504 – Full proposal accepted anytime



Goal: Protect and preserve the growing social and economic benefits of cyber systems while ensuring security and privacy.

- Proposals managed in DGE respond to the SaTC-EDU Track focusing **on cybersecurity education and training.**
- Projects develop evidence-based and evidence-generating approaches to improve cybersecurity education and workforce development at the K-12, undergraduate, graduate, and professional education levels.
- \$400-500k maximum award; 3-year duration

<https://new.nsf.gov/funding/opportunities/secure-trustworthy-cyberspace-satc>

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Graduate Research Fellowship Program (GRFP)

NSF 23-605 – Deadline: October (Multiple)

Goal: Support outstanding graduate students as they prepare to serve as the nation's future STEM scholars and leaders.

- Supports research-based master's and doctoral degree-seeking students in eligible fields of study
- Current annual stipend is \$37K, plus \$16K cost of education allowance
- In FY2024, >14,000 applications were processed with approximately 2,000 awards



<https://new.nsf.gov/funding/opportunities/nsf-graduate-research-fellowship-program-grfp>

<https://www.nsfgrfp.org/>

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Innovations in Graduate Education (IGE)

NSF 24-529 – Deadline: March 25, 2025

Goal: Encourage development and implementation of bold and potentially transformative approaches to STEM graduate education and training.

- Supports piloting, testing, and validating innovative and potentially transformative approaches to STEM graduate education.
- Projects generate knowledge required for customization, implementation, and broader adoption.
- 6-10 awards/year; \$1MM maximum award; 5-year duration



<https://new.nsf.gov/funding/opportunities/innovations-graduate-education-program>

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NSF Research Traineeship Program (NRT)

NSF 21-536 – Deadline: September 6, 2024

Goal: Prepare diverse cohorts of STEM graduate students for a range of STEM careers in high-priority interdisciplinary or convergent research areas.

- Addresses workforce development, emphasizing broad participation.
- Builds institutional capacity for convergent graduate education.
- Strategic collaborations encouraged (private sector, non-governmental organizations, government, national laboratories, field stations, teaching and learning centers, informal science centers, and academic partners).
- 18-20 awards/year; 5-year duration; Track 1: \$3MM; Track 2: \$2MM



<https://new.nsf.gov/funding/opportunities/national-science-foundation-research-traineeship>

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Programs that cut across the directorate and beyond



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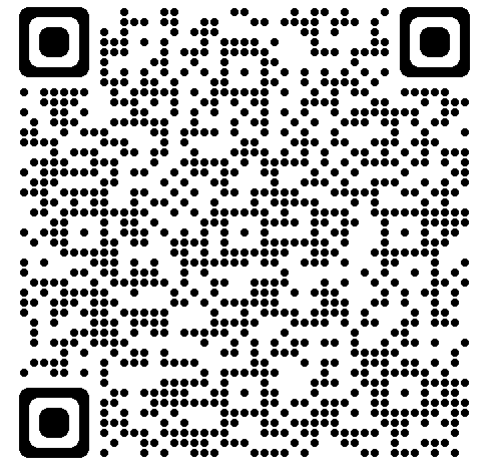
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Computer Science for All (CSforAll: RPP)

NSF 24-555 – Deadline: June 4, 2024 and February 12, 2025

Goal: To provide *all* U.S. students the opportunity to participate in Computer Science and Computational Thinking education in school at the K-12 level.

- **High school teachers:** preparation, professional development (PD) & ongoing support for CS teachers to teach rigorous courses.
- **K-8 teachers:** the instructional materials and preparation they need to integrate CS/CT into their teaching.
- **Schools and districts:** resources needed to define & evaluate pathways in CS & CT.
- **Research** about the learning & teaching of introductory computer science.



<https://new.nsf.gov/funding/opportunities/computer-science-all-csforall-research-rpps>

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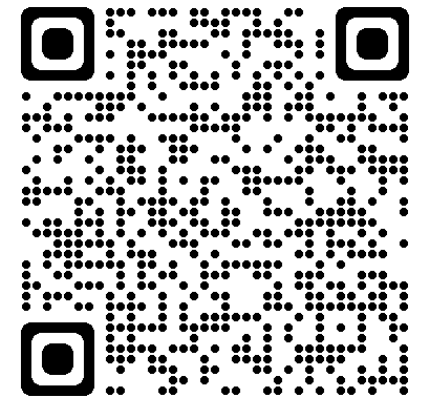
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EDU Core Research (ECR)

NSF 21-588 – Deadline: 1st Thursday in October

Funds:

- Foundational Research that has potential implications for STEM education interventions and policies
 - Track I – Research on STEM Learning and Learning Environments
 - Track II – Research on Broadening Participation in STEM
 - Track III – Research on STEM Workforce Development



<https://new.nsf.gov/funding/opportunities/ehr-core-research-ecrcore>

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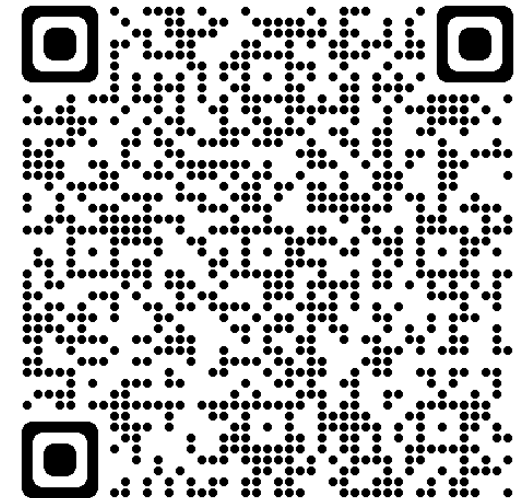
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EDU Core Research (ECR): Building Capacity in STEM Education Research (ECR:BCSER)

NSF 22-548 – Deadline: Fourth Friday in February

- Supports activities that enable early and mid-career researchers to acquire expertise and skills to conduct rigorous fundamental research in STEM education.
- Welcomes proposals from new and more seasoned faculty and investigators from academic as well as non-academic organizations.



<https://new.nsf.gov/funding/opportunities/ehr-core-research-building-capacity-stem-education>

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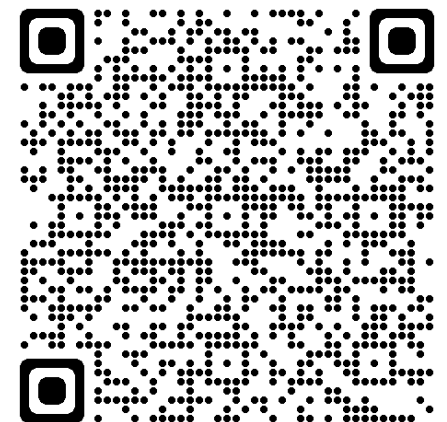
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Faculty Early Career Development Program (CAREER)

NSF 22-586 – Deadline: Fourth Wednesday in July

- NSF-wide activity supporting early-career faculty with potential to serve as academic role models in research and education and to lead advances in the mission of their department or organization.
- Single PI project (5 years) and PI must meet eligibility requirements (e.g., assistant professor, tenure-track or equivalent can only submit 3 times)
- EDU appropriate research qualifies



<https://new.nsf.gov/funding/opportunities/faculty-early-career-development-program-career>

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Improving Undergraduate STEM Education: Hispanic-Serving Institutions (HSI Program)

NSF 24-522 and 24-578 (see RFPs for deadlines)

- Enhancing quality of undergraduate STEM education at HSIs.
- Increasing retention and graduation rates of undergraduate students pursuing degrees in STEM at HSIs.
- Building capacity in undergraduate STEM education at HSIs that typically do not receive high levels of NSF grant funding.



<https://new.nsf.gov/funding/opportunities/hispanic-serving-institutions-enriching-learning/nsf24-551/solicitation>

<https://new.nsf.gov/funding/opportunities/hispanic-serving-institutions-equitable>

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Racial Equity in STEM Education (Racial Equity)

NSF 22-634 – Deadline: October 8, 2024

Goal: To support bold, ground-breaking, and potentially transformative projects addressing systemic racism in STEM.

- Proposals should
 - ✓ Advance racial equity in STEM education.
 - ✓ Center the voices of those most impacted by systemic racism.
 - ✓ Be led by, or developed and led in authentic partnership with, individuals and communities most impacted by the inequities caused by systemic racism.



<https://new.nsf.gov/funding/opportunities/racial-equity-stem-education-ehr-racial-equity-0>

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STEM Education Postdoctoral Research Fellowships (STEM Ed IPRF)

NSF 23-544 – Deadline December 3, 2024

Goal: Build the national capacity to conduct STEM education research by funding early-career scholars.

- Postdoctoral fellowship projects designed to enhance the research knowledge, skills, and practices of STEM Education research by recent doctoral graduates in STEM, STEM Education, Education, and related disciplines.



<https://new.nsf.gov/funding/opportunities/science-technology-engineering-mathematics-0>

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STEM Education Organizational Postdoctoral Research Fellowships (STEM Ed OPRF) *NSF 23-545* — *Deadline* *April 25, 2025*



Goal: Build the national capacity to conduct STEM education research by funding early-career scholars.

- Postdoctoral fellowship projects designed to enhance the research knowledge, skills, and practices of STEM Education research by recent doctoral graduates in STEM, STEM Education, Education, and related disciplines.

<https://new.nsf.gov/funding/opportunities/science-technology-engineering-mathematics-1>

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Workplace Equity for Persons with Disabilities in STEM and STEM Education

NSF 23-593 – Deadline: September 17, 2024



Funds projects that:

- Study barriers and solutions to diversity, equity, inclusion, and accessibility in STEM and STEM education workplaces and training settings for persons with disabilities.
- Apply intersectional social identity perspectives to investigate characteristics and conditions of STEM and STEM education workplaces and training environments that limit and/or improve diversity, equity, inclusion, and accessibility for persons with disabilities.
- Conduct use-inspired and solution-oriented translational research about diverse, equitable, inclusive, and accessible STEM and STEM Education workplaces and training settings for persons with disabilities.

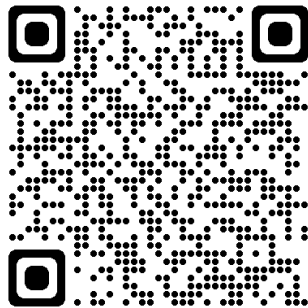
<https://new.nsf.gov/funding/opportunities/workplace-equity-persons-disabilities-stem-stem>

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Interested in finding out more?

NSF By the Numbers

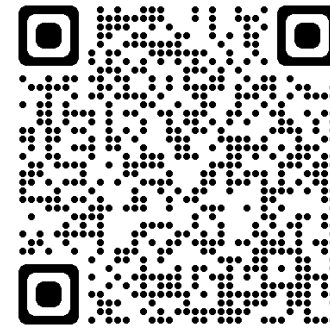
Provides statistical and funding information for awards, NSF-funded institutions, funding rate, proposals evaluated, and obligations by fiscal year



<https://new.nsf.gov/about/about-nsf-by-the-numbers>

Award Abstract Search

Use search terms or other classifications to find out what has been funded in varying divisions, programs, or concepts



<https://www.nsf.gov/awardsearch/>

Many Thanks for
Attending the
Directorate for STEM
Education Session



Questions?