



NSF Funding Opportunities

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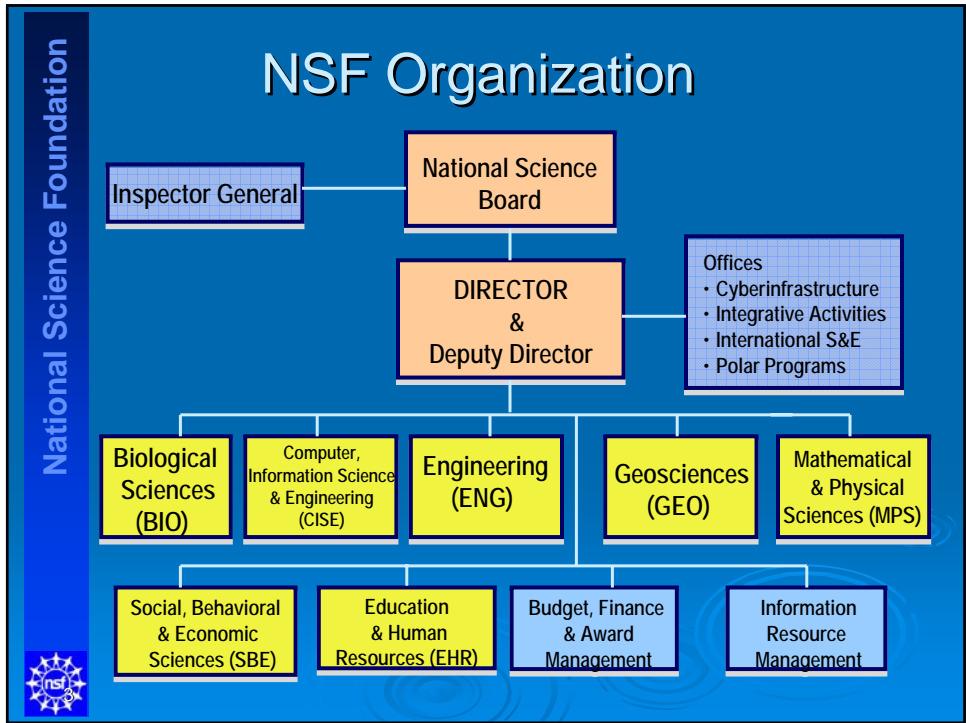
QEM
Workshop on African American Males in STEM
Atlanta, GA
March 19, 2010



NSF's Mission

To promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense (NSF Act of 1950)





NSF Strategic Plan

Goals:

- Discovery
- Infrastructure
- Learning
- Stewardship

Core Values:

- Visionary
- Dedicated to Excellence
- Broadly Inclusive
- Accountable

Key Strategies

- *Integration of Research and Education*
- *Broadening Participation*



What We Do

NSF funds research and education in fields of science, mathematics, and engineering through grants, contracts, and cooperative agreements.

- Supports scientists, engineers and educators directly through their own home institutions.
- Supports education and training in science, mathematics, and engineering at all levels.
- Promotes public understanding of science, engineering and mathematics.



How We Work

Solicited Proposals in response to program announcements, solicitations or program descriptions.

Unsolicited Proposals via Grant Proposal Guide

Target dates, deadlines, and submission windows are published in specific program descriptions, program announcements and solicitations



NSF invests in the best ideas from the most capable people, determined by competitive merit review

Two Merit Review Criteria:

- Intellectual Merit*
- Broader Impacts*



Other Types of Proposals

Grants for Rapid Response Research (RAPID)

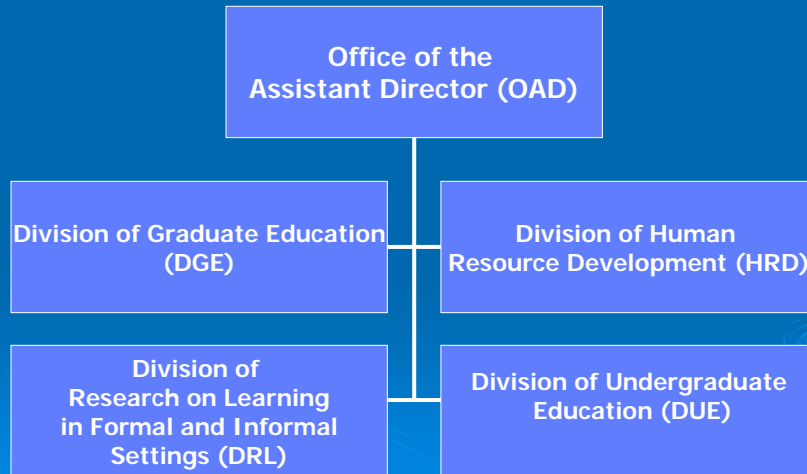
EARly-concept Grants for Exploratory Research (EAGER)

Facilitation Awards for Scientists and Engineers with Disabilities (FASSED)

Proposals for Equipment

Proposals for Conferences, Symposia and Workshops

Directorate for Education and Human Resources (EHR)



Current Funding Opportunities

Program	Solicitation	Directorate	Division	Due Date
Robert Noyce Teacher Scholarship Program (NOYCE)	10-514	EHR	DUE	March 10, 2010 April 7, 2010
Course Curriculum and Laboratory Improvement Program (CCLI)-- changed to Transforming Undergraduate Education in Science (TUES)	10-544	EHR	DUE	May 26, 2010 May 27, 2010 January 14, 2011
Scholarships in Science, Technology, Engineering, and Mathematics (S-STEM) Program	09-567	EHR	DUE	Letter of Intent: July 14, 2010 Full Proposal: August 12, 2010
Science, Technology, Engineering and Mathematics Talent Expansion Program (STEP)	08-569	EHR	DUE	Letter of Intent: August 17, 2010 Full Proposal: September 28, 2010
Advanced Technological Education (ATE)	10-539	EHR	DUE	Preliminary Proposal: April 22, 2010 Full Proposal: October 21, 2010
Innovation through Institutional Integration (I3)		EHR	EHR	April 7, 2010





Noyce Scholarship Program

Robert Noyce Teacher Scholarship Track

- Scholarships (at least \$10,000 per yr) for undergraduate STEM majors preparing to become K12 Teachers
- Stipends (at least \$10,000 for 1 yr.) for STEM professionals seeking to become K12 teachers
- **PHASE I Awards:** Up to \$1,200,000 and up to 5 years
- **PHASE II Awards:** Up to \$750,000 and up to 5 years

NSF Teaching Fellowships & Master Teaching Fellowships (TF/MTF) Track

- Fellowships for STEM professionals receiving teacher certification through a master's degree program
- Fellowships for science and math teachers preparing to become Master Teachers
- **Awards:** Up to \$3,000,000 and up to 6 years



S-STEM: Scholarships in Science, Technology, Engineering, and Mathematics

- **Student citizenship status** [Citizen or permanent resident]
- **Student characteristics** [Financial need and Academic ability]
- **Degree level** [Students enrolled in a program leading to an Associate, Baccalaureate, or Graduate Degree in a STEM field.]
- **Maximum scholarship amount** [\$10,000]
- **AWARD:** \$125,000 per year for up to 5 years = \$600,000 maximum award (annual budget limited to \$225,000)

CCLI: Transforming Undergraduate Education in Science (TUES)

Creating Learning Materials and Strategies; Implementing New Instructional Strategies; Developing Faculty Expertise; Assessing and Evaluating Student Achievement; Conducting Research on Undergraduate STEM Education

- **Type 1 Project Awards:** Up to \$200,000 for 2 to 3 years (250,000 when 4-year and 2-year schools collaborate)
- **Type 2 Project Awards:** Up to \$600,000 for 2 to 4 years
- **Type 3 Project Awards:** \$5,000,000 for 5 years
- **Central Resource Project Awards:** Large Scale--Up to \$3,000,000 for 5 years; Workshops--Up to \$100,000 for 1 to 2 years



STEP: Science, Technology, Engineering and Mathematics Talent Expansion Program

Seeks to increase the number of students (U.S. citizens or permanent residents) receiving associate or baccalaureate degrees in STEM; Supports education research on associate or baccalaureate degree attainment in STEM.

- **Type 1 Project Awards:** \$500K, \$1 M, or \$2 M for 5 years; **1A** – For institutions with no prior STEP support; **1B** – For institutions that have been the lead on a previous Type 1 award; **1C** – Follow-on grants (1-3 years) for existing Type 1 awardees
- **Type 2 Project Awards:** \$1,500,000 for 2-4 years





ATE: Advanced Technological Education

Focuses on two-year colleges; Promotes improvement in the education of science and engineering technicians at the undergraduate level and the educators who prepare them.

- **Small Projects:** \$25,000-300,000 per year for 3 yrs)
- **Centers:**
 - National (\$5 million over 4 yrs)
 - Regional (\$3 million over 4 yrs)
 - Resource (\$1.6 million over 4 yrs)
- **Targeted Research** on Technician Education - \$100,000-\$300,000 per year for 4 yrs



I³: Innovation for Institutional Integration

- Increase synergy & collaboration among NSF/EHR-funded projects & between institutions
- Enhance sustainability
- Broaden participation, attend critical educational junctures, and/or provide for more globally engaged workforce
- Promote innovative programming, policies, and practices to encourage integration of STEM research and education
- **AWARDS:** Up to \$250,000 per year for 5 years



More Funding Opportunities

Program	Solicitation	Directorate	Division	Due Date
Research on Gender in Science and Engineering (GSE)	10-516	EHR	HRD	March 23, 2010 October 14, 2010
Research Experiences for Undergraduates (REU)	09-598	All	All	June 4, 2010 August 25, 2010
Faculty Early Career Development Program (CAREER)	08-557	All	All	July 20, 2010 July 21, 2010 July 22, 2010
Historically Black Colleges and Universities Undergraduate Program (HBCU-UP)	10-518	EHR	HRD	Letter of Intent: January 25, 2010 Full Proposal: March 18, 2010 March 13, 2010 March 22, 2010
Centers of Research Excellence in Science and Technology (CREST) and HBCU Research Infrastructure for Science and Engineering (HBCU-RISE)	10-519	EHR	HRD	
Presidential Awards for Excellence in Science, Mathematics and Engineering Mentoring (PAESMEM)	10-520	All	All	March 23, 2010 October 6, 2010
Integrative Graduate Education and Research Traineeship (IGERT) Program	10-523	All	All	Preliminary Proposal: March 29, 2010 Full Proposal: September 30, 2010



Research Experiences for Undergraduates (REU) Program

- Supports active research participation by undergraduate students in any of the areas of research funded by the National Science Foundation
- Two mechanisms for support of student research:
 - *REU Sites* are based on independent proposals to initiate and conduct projects that engage a number of students in research
 - *REU Supplements* may be requested for ongoing NSF-funded research projects or may be included as a component of proposals for new or renewal NSF grants
- **AWARDS:** \$800-\$1000 per week per student plus 25% administrative cost



Research on Gender in Science and Engineering (GSE) Program

- Supports efforts to understand and address gender-based differences in STEM and workforce participation through research, the diffusion of research-based innovations, and extension services in education
- Projects will contribute to the knowledge base addressing gender-related differences in learning and in the educational experiences that affect student interest, performance, and choice of careers; how pedagogical approaches and teaching styles, curriculum, student services, and institutional culture contribute to causing or closing gender gaps that persist in certain fields



GSE Program

- **Research Project Awards:** \$525,000 over 3 years
- **Diffusion of Research Project Awards:** Pilot – \$125,000 per year for 1-3 years; **Scale-Up** – \$200,000 per year for 3-5 years; **Dissemination** – \$125,000 per year for 1-3 years
- **Extension Service Project Awards:** \$2,500,000 over 5 years

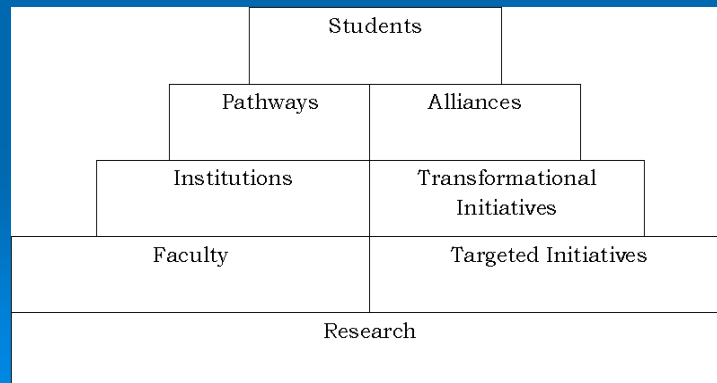
Comprehensive Broadening Participation in Undergraduate STEM

- A new approach at the NSF to broaden the participation in STEM for workforce development
- Will build on what has been learned from three of NSF programs – the Louis Stokes Alliances for Minority Participation (**LSAMP**), the Historically Black Colleges and Universities Undergraduate program (**HBCU-UP**) and Tribal Colleges and Universities Program (**TCUP**)
- Will draw on research and proven practice, about the most effective strategies for recruiting, retaining, and successfully preparing underrepresented minority students for the STEM workforce and STEM graduate study



Conceptual Picture of Comprehensive Program

Goal: to increase quality and quantity of the U.S. STEM workforce by strengthening educational and research capacity at institutions with strong track records of producing STEM graduates from underrepresented minority populations.





Components

- ❑ **Model Alliances**– pathways for students
- ❑ **Transformative Initiatives**– institutional capacity building
- ❑ **Targeted Initiatives**– faculty and academic program development focused on specific institutional opportunities
- ❑ **Research**– on issues that surround teaching and learning and increasing participation of underrepresented groups in STEM



Comprehensive Broadening Participation in Undergraduate STEM

- Program will create new, wider and more innovative pathways for students, including opportunities for research at the undergraduate level leading to entry to graduate school
- Combined investments will result in synergy, collaborations, and more effective institutional capacity-building
- Program will reflect co-funding and leveraging with other Directorates and Offices throughout the Foundation, and eventually other federal agencies
- Program will position the total broadening participation effort for increased investment and maximize impact on broadening participation in STEM

Comprehensive Broadening Participation in Undergraduate STEM

- New sets of alliances will be configured with science-rich entities, such as large-scale public and private centers, laboratories, and other institutions (e.g., marine and field laboratories, ERCs, STCs, DoE labs, research museums, etc.)
- Intellectual and fiscal resources will be leverage through partnerships and collaborations to allow the replication, implementation, and adaptation of productive practices to happen effectively at more institutions and in wider settings
- institutions would collaborate and cooperate across institutional types to learn from each other and create a community of scholars in sync with cultivating talent and increasing outputs and outcomes in STEM for all underrepresented minority students.



Still More Funding Opportunities

Program	Solicitation	Directorate	Division	Due Date
Geoscience Education (GeoEd)	10-512	GEO	AGS, EAR, OCE	March 8, 2010
Undergraduate Research and Mentoring in the Biological Sciences (URM)	10-531	BIO	DBI	April 26, 2010
Broadening Participation in Computing (BPC)	09-534	CISE	CGF, CNS, IIS	May 12, 2010
Workforce Program in the Mathematical Sciences	PD 08-7335	MPS	DMS	June 15, 2010
Research to Aid Persons with Disabilities (RAPD)	PD 10-5342	ENG	CBET	September 23, 2010
Interdisciplinary Training for Undergraduates in Biological and Mathematical Sciences (UBM)	08-510	BIO, EHR, MPS	DUE, DMS, OMA	February 10, 2011



Other Programs

Program	Solicitation	Directorate	Division	Due Date
Research and Evaluation on Education in Science and Engineering (REESE)	09-601	EHR	DRL	
Discovery Research K-12 (DR K-12)	09-602	EHR	DRL	
Math and Science Partnership (MSP)	09-507	EHR	DUE	
Innovative Technology Experiences for Students and Teachers (ITEST)	09-506	EHR	DRL	
Research in Disabilities Education (RDE)	09-508	EHR	HRD	
ADVANCE : Increasing the Participation and Advancement of Women in Academic Science and Engineering Careers	09-504	All	All	



Research and Evaluation on Education in Science and Engineering (REESE) Program

Advances research at the frontiers of STEM learning, education, and evaluation, and to provide the foundational knowledge necessary to improve STEM teaching and learning at all educational levels and in all settings.

Goals:

- to catalyze discovery and innovation at the frontiers of STEM learning, education, and evaluation;
- to stimulate the field to produce high quality and robust research results through the progress of theory, method, and human resources; and
- to coordinate and transform advances in education, learning research, and evaluation





REESE Program

- **Pathways Project Awards:** \$250,000 over 2 years
- **Knowledge Diffusion Research Project Awards:** \$250,000 over 2 years
- **Empirical Research Project Awards:** \$1,500,000 over 3 years
- **Large Empirical Research Project Awards:** \$2,500,000 over 5 years



Discovery Research K-12 (DR K-12) Program

- ▶ Enables significant advances in preK-12 student and teacher learning of the STEM disciplines through development, study, and implementation of resources, models, and technologies for use by students, teachers, and policymakers
- ▶ Encourages proposals that challenge existing assumptions about learning and teaching within or across STEM fields, envision needs of learners in 10-15 years, and consider new and innovative ways to educate students and teachers

DR K-12 Program

AWARDS:

- (1) Exploratory projects up to \$450,000 with duration up to three years;
- (2) Full research and development projects up to \$3,500,000 with duration up to five years;
- (3) Projects that study scale-up of STEM education innovations up to \$5,000,000 with duration up to five years;
- (4) Synthesis projects up to \$250,000 with duration up to two years; and
- (5) Conference/Workshop projects up to \$100,000 for duration up to two years.



Still Other Programs

Program	Solicitation	Directorate	Division	Due Date
Opportunities for Enhancing Diversity in the Geosciences (OEDG)	08-605	GEO	AGS, EAR, OCE	
Research Initiation Grants to Broaden Participation in Biology (RIG)	09-501	BIO	DBI, DEB, IOS, MCB	
Broadening Participation Research Initiation Grants in Engineering (BRIGE)	10-509	ENG	CBET, CMMI, ECCS, EEC, IIP	
Partnerships for Research and Education in Materials (PREM)	09-518	MPS	DMR	
Partnerships in Astronomy & Astrophysics Research and Education (PAARE)	08-562	MPS	AST	
SBE Minority Postdoctoral Research Fellowships and Follow-up Research Starter Grants	09-595	SBE	BCS, SES	



NSF Website: www.nsf.gov

The screenshot shows the NSF website homepage with the following elements:

- Header:** NSF logo with the tagline "WHERE DISCOVERIES BEGIN". A search bar is located in the top right corner.
- Navigation:** A horizontal menu with links for HOME, FUNDING, AWARDS, DISCOVERIES, NEWS, PUBLICATIONS, STATISTICS, ABOUT, and FastLane.
- Main Banner:** A large graphic titled "Arctic Methane Imperils Climate" featuring molecular models and a globe with red arrows pointing upwards.
- Left Column:**
 - Funding Opportunities:** Includes links for "Find Funding Opportunities", "Upcoming Due Dates", "How to Prepare Your Proposal", and "Funding Trends".
 - Program Areas:** A dropdown menu labeled "Select One".
 - Quick Links:** Another dropdown menu labeled "Select One".
 - Search Funding Opportunities:** A search input field.
 - About NSF:** Links for "General Information About NSF", "Merit Review", "Broadening Participation/Diversity", and "View Staff Directory".
- Special Notices:** A section with several news items, including "NSF Information Related to the American Recovery and Reinvestment Act of 2009" and "Nominations for the 2010 National Medal of Science accepted through March 21, 2010".
- Latest News:** A section with two news items: "Take a Nanosize Break" (Released February 24, 2010) and "Fighting Crime With Math" (Released February 20, 2010).
- Right Column:**
 - Get NSF Updates by Email:** A subscription link.
 - Site Features:** Includes "NSF at a Glance", "News", "For the News Media", "Special Reports", "Discoveries from NSF Research", "Research Overviews", "Speeches & Lectures", "Multimedia Gallery", "NSF & Congress", "Classroom Resources", "NSF-Wide Investments", and "Science and Education Outreach".