National Science Foundation (NSF)  
Directorate for Education and Human Resources (EHR)

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NSF Day  
Indiana University of Pennsylvania  
September 21, 2011
EHR’s Organizational Structure

Office of the Assistant Director

- Division of Graduate Education (DGE)
- Division of Human Resource Development (HRD)
- Division of Research on Learning in Formal and Informal Settings (DRL)
- Division of Undergraduate Education (DUE)
Visiting the EHR Website
What Does EHR Seek to Achieve?

- Build a globally competitive, diverse STEM workforce
- Inspire and engage the public as science learners
- Advance understanding and anticipate the form and value of tomorrow’s learning
- Innovate to meet societal challenges.
Myths About EHR

- EHR does not accept RAPID or EAGER proposals.
- EHR does not accept CAREER proposals.
- Graduate Research Fellowships do not include STEM education as a field of study.
- EHR does not fund international activity
The EHR *Enterprise* at NSF:

- Investments across STEM fields to support:
  - Teacher Development, Capacity Building and Partnerships in K-12 Education
  - Undergraduate Education in STEM including Career Prep
  - Innovation in Graduate Education
  - Broadening Participation; Support for Minority Serving Institutions
  - Public Engagement with Science
  - Education Research, Development, Evaluation
Teacher Development, Capacity Building and Partnerships in K-12 Education

Innovative Technology Experiences for Students and Teachers (ITEST) program supports research about the growing demand for professionals and information technology workers in the U.S. and seeks solutions to help ensure the breadth and depth of the STEM workforce.

Robert Noyce Teacher Scholarship (NOYCE) program encourages talented STEM majors and professionals to become mathematics and science teachers and provides scholarships and stipends for students holding STEM degrees who earn a teaching credential and commit to teaching in high-need K-12 school districts. It also serves the needs of those seeking career change into STEM or become Master Teachers.
Math and Science Partnership (MSP) program is a major R&D effort supporting innovative partnerships to improve K-12 student achievement in math and science. MSP projects contribute to what is known in math and science education and serve as models that have a sufficiently strong evidence/research base to improve student outcomes.
Advanced Technological Education (ATE) focuses on education of technicians for high-technology fields that drive our nation's economy. Partnerships among academia and industry are prominent features.

STEM Talent Expansion Program (STEP) supports projects leading to an increase in the number of students earning STEM degrees. Educational research projects on degree attainment in STEM are encouraged.

NSF Scholarships in STEM (S-STEM) makes grants to institutions of higher education to support scholarships for academically talented, financially needy students for an associate, baccalaureate, or graduate level degree.
Federal Cyber Service: Scholarship for Service (SFS) supports scholarships and capacity building activities designed to increase the number of qualified students entering the fields of information assurance and computer security.

Transforming Undergraduate Education in STEM (TUES) supports efforts to create, adapt, and disseminate new learning materials and teaching strategies, develop faculty expertise, implement educational innovations, assess learning and evaluate innovations, and conduct research on STEM teaching and learning.
Innovation in Graduate Education

Integrative Graduate Education and Research Traineeship (IGERT) supports education of U.S. Ph.D. scientists and engineers with the deep interdisciplinary knowledge and technical, professional, and personal skills to become leaders and creative agents for change.

IGERT-funded researcher develops hand-held terahertz spectrometer.
Graduate Research Fellowships (GRF) awards support for graduate study leading to research-based masters or doctoral degrees. Provides three years of support within a five-year period, which may be used at any accredited U.S. institution.
Large-Scale Programs for Broadening Participation

**Tribal Colleges and Universities (TCUP)** program enhances the quality of STEM instructional and outreach programs at Tribal, Alaska Native-serving, and Native Hawaiian-serving institutions.

**Centers of Research Excellence in Science and Technology (CREST)** enhances research capabilities of minority serving institutions and their faculty through effective integration of education and research, and expands the presence of students historically underrepresented in STEM disciplines.

**Historically Black Colleges and Universities—Undergraduate Program (HBCU-UP)** seeks to increase the quality of STEM education at Historically Black Colleges and Universities, addressing their STEM needs goals and mission.
Large-Scale Programs for Broadening Participation

Alliances for Graduate Education and the Professoriate (AGEP) aims to increase the number of underrepresented minorities receiving PhD degrees in STEM.
Increasing the Participation and Advancement of Women in Academic Science and Engineering Careers (ADVANCE) develops systematic approaches to increase the representation and advancement of women in academic science and engineering careers.

Louis Stokes Alliances for Minority Participation (LSAMP) seeks to increase the quality and quantity of students receiving baccalaureate degrees in STEM fields, and provides a “Bridge to the Doctorate” component.
Public Engagement in Science

Informal Science Education (ISE) program supports innovation in anywhere, anytime, lifelong learning, through investments in research, development, infrastructure, and capacity-building. ISE also supports PIs of NSF-funded research projects for Communicating Research to Public Audiences.

Climate Change Education (CCE) supports a broad range of efforts to enhance climate literacy and to enable individuals and communities to make informed, responsible decisions regarding actions affecting climate.
Discovery Research K-12 (DR-K12) enables advances in student and teacher learning of the STEM disciplines through research and development on innovative resources, models, and technologies.

Research and Evaluation on Education in S&E (REESE) advances research at the frontiers of STEM learning, education, and evaluation, and provides the foundational knowledge necessary to improve STEM teaching and learning at all educational levels and in all settings.

The Fostering Interdisciplinary Research on Education (FIRE) strand in the REESE program seeks proposals by which scholars can cross disciplinary boundaries and facilitate the development of innovative theoretical, methodological, and analytic approaches to STEM education issues of national importance.
Research on Gender in S&E (GSE) seeks to broaden the participation of girls and women in all fields of STEM education by supporting research, the diffusion of innovations, and extension services.

Research in Disabilities Education (RDE) seeks to increase the participation of persons with disabilities in STEM education and careers. Emphasis is placed on contributing to the knowledge base.

Undergraduate student teachers use SimSchool© module to learn to how to teach students with disabilities.
Promoting Research & Innovation in Methodologies for Evaluation (PRIME) supports research on evaluation; explores innovative new approaches for determining impacts and usefulness of STEM education activities.

Transforming STEM Learning (TSL) program invites interdisciplinary proposals to study prototypes for innovations like virtual schools; and design and conduct exploratory development of new, potentially transformative models for STEM learning environments.
Education Research Elsewhere at NSF

• Mathematics and Physical Sciences Directorate [Education and Interdisciplinary Research]

• Engineering Directorate [Innovations in Engineering Education, Curriculum, and Infrastructure program]

• Computer and Information Science and Engineering Directorates [Proposed FY2011 Program in Cyberlearning for Transforming Education (CISE/EHR/SBE/OCI); a new planning effort underway for a program on research on learning in the context of computing education]

• Social and Behavioral Sciences Directorate [Science of Learning Centers, Developmental and Learning Sciences, Social Psychology, and Linguistics]
NSF Collaboration with other Federal Agencies
Glossary of EHR Programs

- AGEP: Alliances for Graduate Education and the Professoriate
- ATE: Advanced Technological Education
- CREST: Centers of Research Excellence in Science and Technology
- Federal Cyber Service: Scholarship for Service (SFS)
- GRF: Graduate Research Fellowships
- GSE: Research on Gender in Science and Engineering
- HBCU-UP: Historically Black Colleges and Universities, Undergraduate Program
- ISE: Informal Science Education
- ITEST: Innovative Technology Experiences for Students and Teachers
- LSAMP: Louis Stokes Alliances for Minority Participation
Glossary of Principal EHR Programs

- **MSP:** Math and Science Partnership

- **S-STEM:** NSF Scholarships in STEM

- **NOYCE:** Robert Noyce Teacher Scholarship Program

- **REESE:** Research and Evaluation on Education in Science and Engineering

- **RDE:** Research in Disabilities Education

- **STEP:** Science, Technology, Engineering, and Mathematics Talent Expansion

- **TCUP:** Tribal Colleges and Universities Program

- **TUES:** Transforming Undergraduate Education in STEM
Glossary of EHR Activities

- **TSL**: Transforming STEM Learning

- **EASE**: Excellence Awards in Science and Engineering [A composite activity representing the NSF Presidential Awards for Excellence in Math and Science Teaching (PAEMST) and the Presidential Awards for Excellence in Science, Mathematics, and Engineering Mentoring]


- **PRIME**: Promoting Research and Innovation in Methodologies for Evaluation

- **Fostering Interdisciplinary Research on Education (FIRE)**
Selected *Cross-Cutting* Programs with EHR Participation

- Networking and Information Technology R&D

*Housed in EHR, Managed for NSF.*