



Directorate for Education and Human Resources (EHR)

An Overview

NSF Grants Conference

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Colorado State University

Denver, Colorado

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National Science Foundation

Ensuring the Health and Vitality of our Nation's STEM Education Enterprise



Contributing to the Administration goal of producing one million additional college graduates with degrees in science, technology, engineering, and mathematics and preparing 100,000 excellent math and science teachers over the next decade.



Directorate for Education and Human Resources (EHR)

Vision: a healthy and vital national science, technology, engineering, and mathematics (STEM) enterprise

Mission: to support the preparation of a diverse, globally competent STEM workforce and a STEM-literate citizenry through investment in research and development on STEM education and learning



Directorate for Education and Human Resources (EHR)

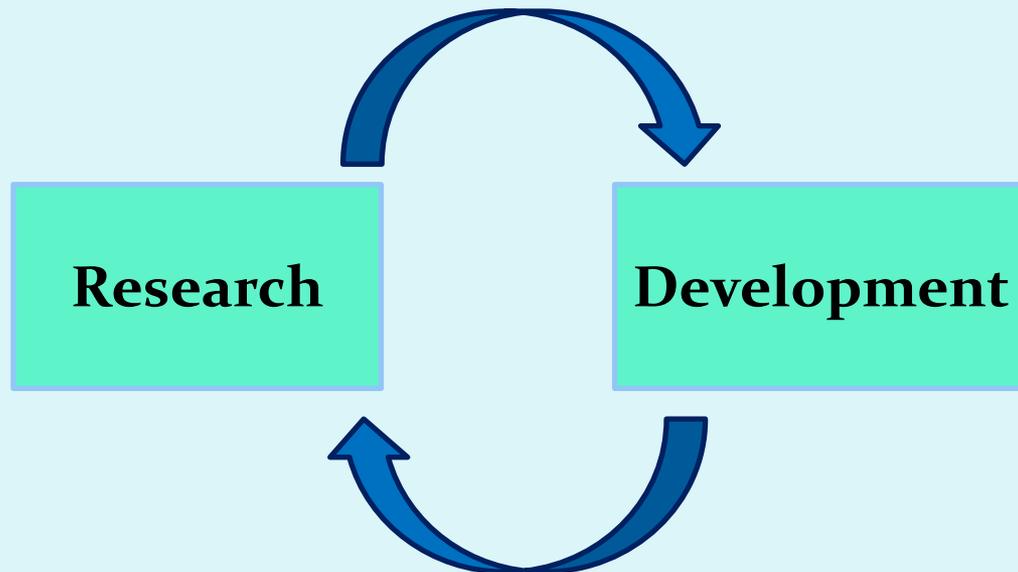
Investments that accumulate and build upon knowledge, through evidence-improving and evidence-amassing processes, to

- Prepare the next generation of STEM professionals
- Develop a robust research community in STEM education
- Increase technological, scientific, and quantitative literacy of all Americans
- Broaden participation in all STEM fields



Research and Development (R&D) in STEM Education

Investments where research questions inform development and in turn, development fosters research questions



This concept is the basis for EHR's Core Research and Development (ECR) initiative



EHR FY2014 Strategic Framework

Learning and Learning Environments



Broadening Participation in STEM



STEM Professional Workforce



ECR Core Areas

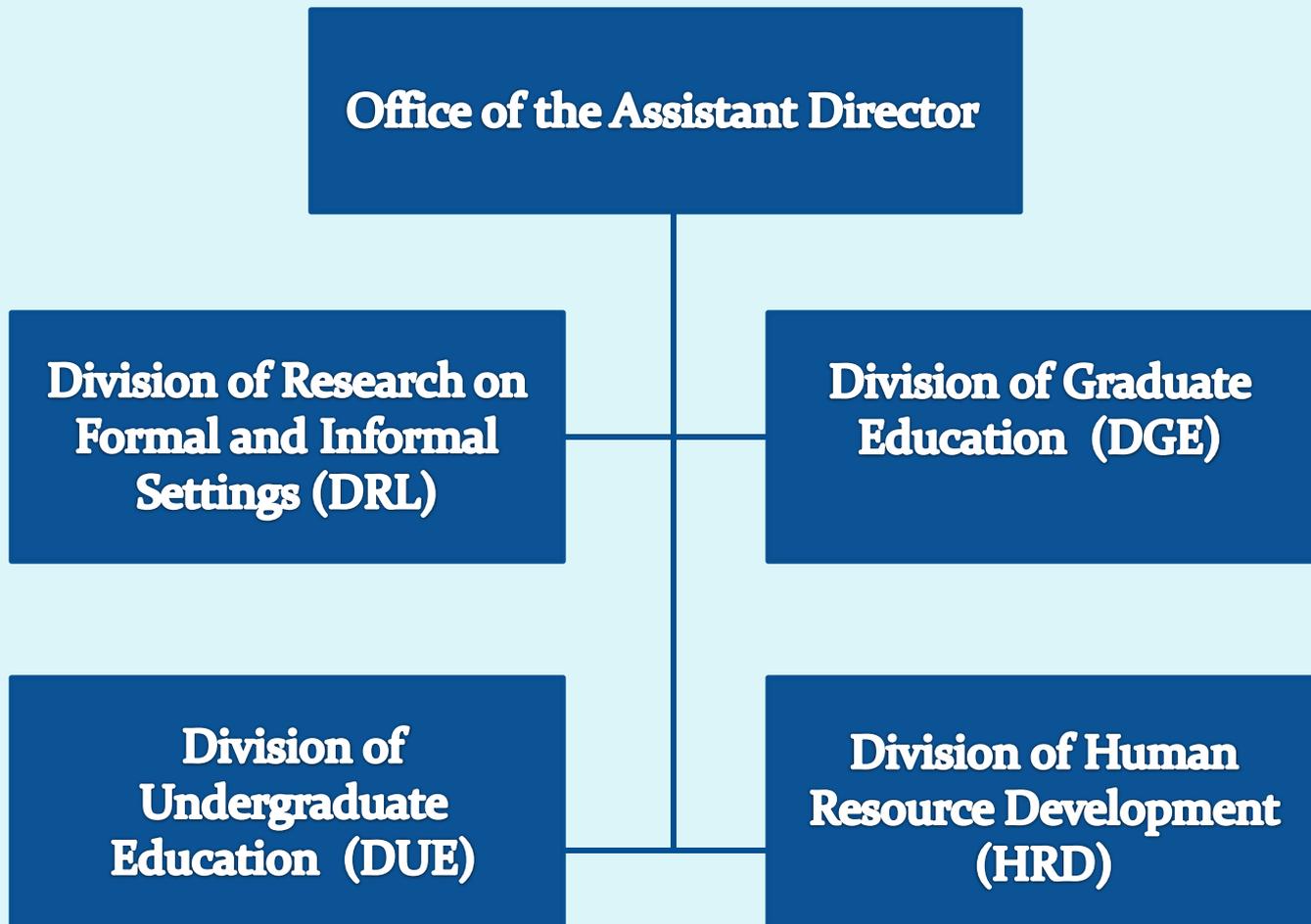
STEM Learning: discipline-based learning; learning and engagement (formal and informal); dissemination of knowledge and learning; integration of knowledge; impacts of persistence and identity on learning; big data

STEM Learning Environments: emerging learning environments (e.g. cyberspace); evidence-based approaches to undergraduate STEM instruction including blended instruction; virtual reality; personalized learning environments

STEM Workforce Development: diverse, globally-prepared, highly-skilled STEM workforce (and teachers); entire STEM workforce continuum; retention and degree completion; academic and non-academic STEM career pathways; connecting workplace expectations to designs of interventions

Broadening Participation in STEM: evidence gathering on practices that enhance the participation, retention and success of URGs in STEM; academic transition points; access to and impacts of technology on diverse population; metrics to assess outcomes of broadening participation and institutional capacity

EHR's Organizational Structure



Program Focus In the EHR Directorate

EHR Division	Learning and Learning Environment	Broadening Participation in STEM	STEM Professional Workforce
Research on Learning (DRL)	*ECR -(Learning) DR-K12 AISL *ECR + REAL =FY2015	*REAL <ul style="list-style-type: none"> • Research on Gender in Science and Engineering (GSE) • Research in Disabilities Education (RDE) 	STEM-C Partnerships for the 21st Century (SCP)- [formerly Math and Science Partnership]
Graduate Education (DGE)	Project and Program Evaluation	*ECR- (STEM Professional Workforce) CyberCorps: Scholarship for Service (SFS) Graduate Research Fellowship (GRF) National Research Traineeship (NRT)	
Human Resource Development (HRD)	ADVANCE AGEP HBCU-UP TCUP	*ECR-(Broadening Participation and Capacity Building) LSAMP	Excellence Awards in Science and Engineering (EASE: PAEMST & PAESMEM) CREST
Undergraduate Education (DUE)	*ECR-(Learning Environment) Improving Undergraduate STEM Education (IUSE)		Advanced Technological Education (ATE) Robert Noyce Teacher Scholarship Program

Program Focus In DRL

EHR Division	Learning and Learning Environment	Broadening Participation in STEM	STEM Professional Workforce
<p>Research on Learning in Formal and Informal Settings (DRL)</p>	<p>Core Research & Development (ECR)</p> <p>DR-K12- (Discovery Research K-12)</p> <p>AIISL- Advancing Informal STEM Learning</p>	<p>*Research on Education and Learning (REAL)</p> <ul style="list-style-type: none"> • Research on Gender in Science and Engineering (GSE) • Research in Disabilities Education (RDE) <p>*REAL + ECR = FY2015</p>	<p>STEM-C Partnerships for the 21st Century (SCP)- [formerly Math and Science Partnership]</p>

Program Focus In DGE

EHR Division	Learning and Learning Environment	Broadening Participation in STEM	STEM Professional Workforce
Graduate Education (DGE)	<p>Project and Program Evaluation (PPE)/Promoting Research and Innovation in Methodologies for Evaluation (PRIME)</p>	<p>Core Research & Development (ECR)*</p> <p>SFS- CyberCorps: Scholarship for Service</p> <p>GRF - Graduate Research Fellowship</p> <p>NRT- National Research Traineeship</p> <p>INSPIRE-Integrated NSF Support Promoting Interdisciplinary Research and Education</p> <p>NSF Innovation Corps (I-Corps)</p>	

Program Focus In HRD

EHR Division	Learning and Learning Environment	Broadening Participation in STEM	STEM Professional Workforce
<p>Human Resource Development (HRD)</p>	<p>ADVANCE-Increasing the Participation and Advancement of Women in S & E careers</p> <p>AGEP-Alliances for Graduate Education and the Professoriate</p> <p>HBCU-UP- Historically Black Colleges and Universities Undergraduate Program</p> <p>TCUP- Tribal Colleges and Universities Programs</p>	<p>*Core Research & Development (ECR)</p> <p>LSAMP- Louis Stokes Alliances for Minority Participation</p>	<p>EASE- Excellence Awards in Science and Engineering</p> <p>1. PAEMST- Presidential Awards for Excellence in Mathematics and Science Teaching</p> <p>2. PAESMEM- Presidential Award for Excellence in Science, Mathematics and Engineering Mentoring)</p> <p>CREST- Centers of Research Excellence in Science and Technology</p>

Program Focus In DUE

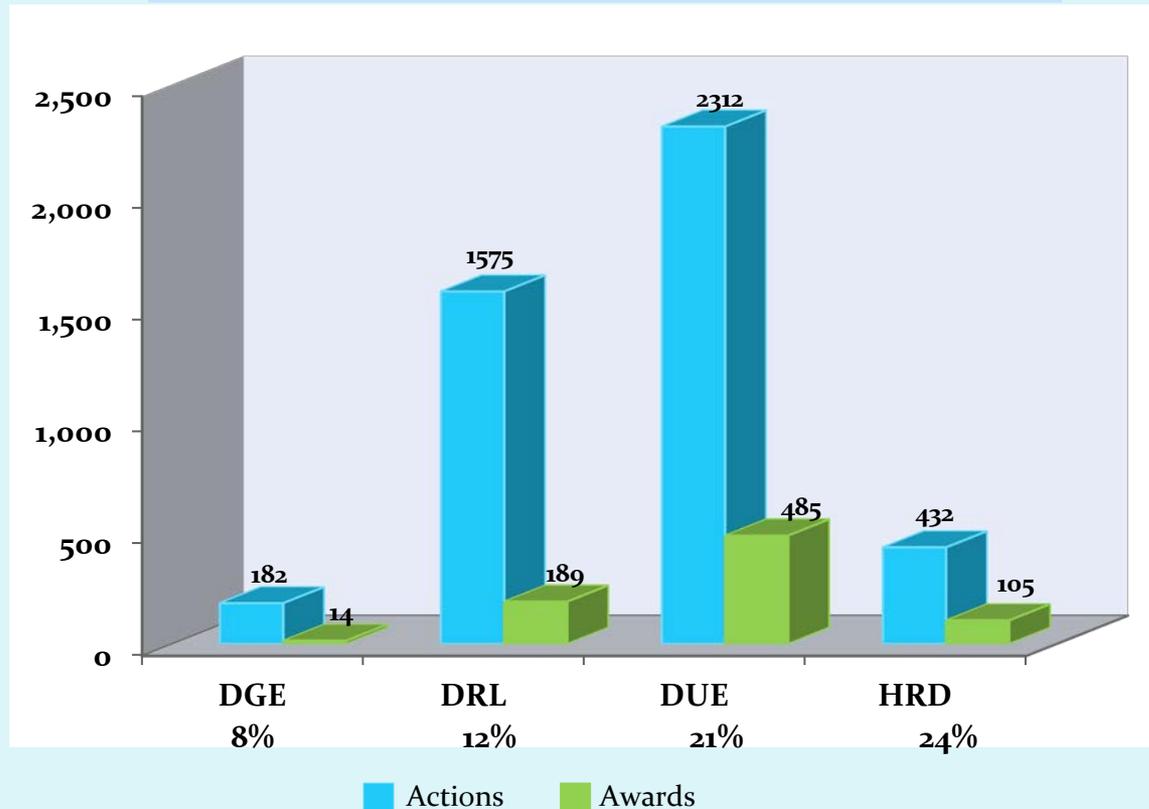
EHR Division	Learning and Learning Environment	Broadening Participation in STEM	STEM Professional Workforce
Undergraduate Education (DUE)	Core Research & Development (ECR) IUSE- Improving Undergraduate STEM Education		Advanced Technological Education (ATE) Robert Noyce Teacher Scholarship Program (NOYCE)

Cross-Cutting Initiatives

- Cyberlearning and Future Learning Technologies (Cyberlearning)
- Building Community and Capacity for Data-Intensive Research in the Social, Behavioral and Economic Sciences and in Education and Human Resources (BCC-SBE/EHR)
- Critical Techniques and Technologies for Advancing Big Data Science & Engineering (BIGDATA)
- National Science Foundation Research Traineeship (NRT) Program

EHR Funding Rate

Overall FY 2013 EHR funding rate: 18%



Answer FUNDAMENTAL Questions

What are you trying to accomplish?

What will be the outcomes?

} *Goals*

Why do you believe that you have a good idea?

Why is the problem important?

How does it tie into previous literature/efforts?

Why is your approach promising?

} *Rationale*

How will you manage the project to ensure success?

How will you know if you succeed?

} *Evaluation*

How will others find out about your work?

How will you interest them?

How will you excite them?

} *Dissemination*



VISITING THE NSF WEBSITE

http://www.nsf.gov/

The screenshot shows the top portion of the NSF website. At the top, a browser address bar displays "nsf.gov - National Science Foundation - US National S...". To the right of the address bar are icons for home, RSS, email, and printer, along with dropdown menus for "Page", "Safety", and "Tools". Below the address bar is a blue header banner. On the left side of the banner is the NSF logo, which consists of a globe with stars and the text "NSF National Science Foundation WHERE DISCOVERIES BEGIN". On the right side of the banner is a "QUICK LINKS" button and a search bar with the word "SEARCH" and a magnifying glass icon. Below the banner is a dark blue navigation menu with white text for "HOME", "FUNDING", "AWARDS", "DISCOVERIES", "NEWS", "PUBLICATIONS", "STATISTICS", "ABOUT NSF", and "FASTLANE".

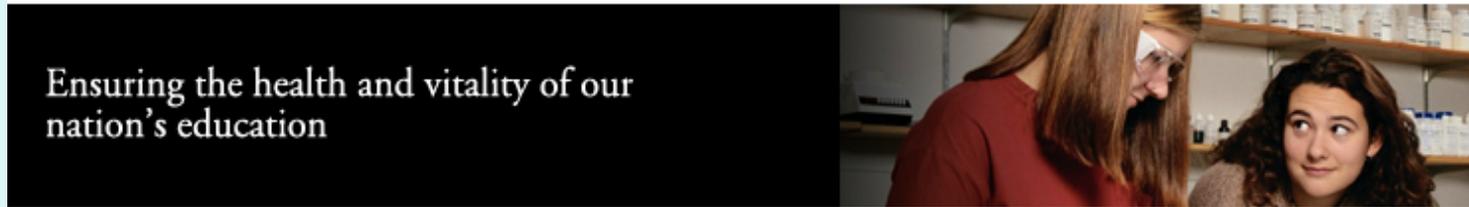
This banner features a photograph of a young woman with dark hair and a blue top standing next to an elderly man with glasses, a blue suit, and a patterned tie. They are both smiling. To the right of the photo is a dark grey box with white text that reads "Graduate research across generations". Below this text is a smaller grey button with white text that says "FULL STORY".

Advancing the Sciences

Funding & Supporting

Inspiring & Educating

× HIDE



- EHR Organizations
- [Graduate Education \(DGE\)](#)
- [Research on Learning in Formal and Informal Settings \(DRL\)](#)
- [Undergraduate Education \(DUE\)](#)
- [Human Resource Development \(HRD\)](#)

- About EHR
- [View EHR Staff Directory](#)
- [Search EHR Staff Directory](#)
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- [General Information About EHR](#)
- [Career Opportunities](#)
- [Advisory Committee](#)
- [Budget Excerpt](#)
- Proposals and Awards
- [Proposal and Award Policies and Procedures Guide](#)

WIDER Dear Colleague Letter Issued

The Directorate for Education and Human Resources announces an opportunity to seek funding for [Widening Implementation and Demonstration of Evidence-based Reforms](#).

Successful K-12 STEM Education Activities



"Successful K-12 STEM Education," a report produced by the National Research Council, and funded by NSF, is a response to a request from a member of Congress, Rep. Frank Wolf, to identify the characteristics of highly successful K-12 schools and programs in STEM. Information about activities associated with the report are available from [Successful STEM Education.org](#).

Special Announcements

NSF Announces [Science Across Virtual Institutes](#) Initiative

[STEM Education Resources](#)

[Innovation Through Institutional Integration \(I-3\)](#)

- [Get EHR Updates by Email](#)
- Additional EHR Resources
- 2013 EHR Budget Information
- Publications [See All](#)
- [Dear Colleague Letter for the Science, Engineering and Education for Sustainability \(SEES\)](#)
- [Dear Colleague Letter: Opportunity for Research Experiences for Undergraduates \(REU\) Sites Focusing on STEM Education Research](#)
- [Dear Colleague Letter: Science Across Virtual Institutes \(SAVI\)](#)
- [Dear Colleague Letter - Issuance of a new NSF Proposal & Award](#)

Stay Connected

- Submit Proposals
- Serve as Reviewers and Panelists
- Be Active as Workshop Participants and Organizers
- Consider Being a Rotator

http://www.nsf.gov/about/career_opps/rotators/index.jsp



For information on a particular EHR division and program, go to the EHR website and choose a division.

<http://www.nsf.gov/dir/index.jsp?org=EHR>

Contact NSF Program Directors for questions and suggestions.



Useful Resources

- NSF: www.nsf.gov
- PAPPG:
www.nsf.gov/pubs/policydocs/pappguide/nsf3001/index.jsp
- Guide to Programs:
www.nsf.gov/funding/browse_all_funding.jsp
- Award Information: www.nsf.gov/awardsearch
- FastLane: www.fastlane.nsf.gov
- Broader Impacts:
www.nsf.gov/pubs/gpg/broaderimpacts.pdf
- Data Management Plan:
www.nsf.gov/bfa/dias/policy/dmp.jsp
- Funding Opportunities: www.nsf.gov/funding



Questions???

THANK YOU



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