NSF Days
Directorate for Education and Human Resources (EHR)
November 2-3, 2015
Arlington, Virginia

David B. Campbell, Ph.D.
Program Director
Division of Research on Learning in Formal and Informal Settings
Directorate for Education and Human Resources
National Science Foundation
EHR is committed to building the STEM workforce of tomorrow and a STEM literate public by improving STEM learning.
EHR is committed to a healthy and vital national STEM enterprise.

$866 million FY 2015 estimation

97% funds research, education and related activities

4,049 proposals

701 awards funded

481 EHR-funded Institutions

145,000 EHR-supported individuals

All S&E disciplines funded

Funds research into STEM education

43 former GRF fellows received Nobel Prize

Other than the FY 2015 estimation, numbers shown are based on FY 2014 activities.

DIRECTORATE FOR EDUCATION AND HUMAN RESOURCES
Federal Science, Technology, Engineering, and Mathematics (STEM) Education 5-Year Strategic Plan

Priority Areas

• P-12 STEM education
• Undergraduate education
• Graduate education
• Broadening participation
• Public engagement
• Coordination and evaluation
Directorate for Education and Human Resources

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
EHR’s organizational structure

Office of the Assistant Director (OAD)

- Division of Research on Formal and Informal Settings (DRL)
- Division of Graduate Education (DGE)
- Division of Undergraduate Education (DUE)
- Division of Human Resource Development (HRD)
## Program Focus in the EHR Directorate

<table>
<thead>
<tr>
<th>EHR Division</th>
<th>Learning and Learning Environment</th>
<th>Broadening Participation in STEM</th>
<th>STEM Professional Workforce</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research on Learning (DRL)</td>
<td>ECR - Learning DR-K12 AISL</td>
<td>ECR includes:</td>
<td>STEM+C Partnerships for the 21st Century formerly Math and Science Partnership</td>
</tr>
<tr>
<td></td>
<td>ECR + REAL =FY2015</td>
<td>• Research on Gender in Science and Engineering (GSE)</td>
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<td></td>
<td></td>
<td>• Research in Disabilities Education (RDE)</td>
<td>ITEST - Innovative Technology Experiences for Students and Teachers</td>
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<tr>
<td>Graduate Education (DGE)</td>
<td>Project and Program Evaluation (PPE) Building Community &amp; Capacity in Data (BCC)</td>
<td>ECR- <strong>STEM Professional Workforce</strong> CyberCorps: Scholarship for Service (SFS) Graduate Research Fellowship (GRF) National Research Traineeship (NRT)</td>
<td></td>
</tr>
<tr>
<td>Human Resource Development (HRD)</td>
<td>ADVANCE AGEP HBCU-UP TCUP</td>
<td>ECR- <strong>Broadening Participation and Capacity Building</strong> LSAMP</td>
<td></td>
</tr>
<tr>
<td>Undergraduate Education (DUE)</td>
<td>ECR-Learning Environment Improving Undergraduate STEM Education (IUSE)</td>
<td>Excellence Awards in Science and Engineering - PAEMST &amp; PAESMEM CREST</td>
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<tr>
<td></td>
<td></td>
<td>Advanced Technological Education (ATE) Robert Noyce Teacher Scholarship Program S-STEM Scholarship Program</td>
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ECR includes:
- Research on Gender in Science and Engineering (GSE)
- Research in Disabilities Education (RDE)
EHR Core Research (ECR) across all themes: EHR invests in foundational research for the strategic improvement of STEM education.
# Program Focus in DRL

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<td>Core Research &amp; Development (ECR)</td>
<td>ECR* includes:</td>
<td>STEM+C Partnerships for the 21st Century</td>
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<td>DR-K12- (Discovery Research K-12)</td>
<td>• Research on Gender in Science</td>
<td>formerly Math and Science Partnership</td>
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<td>AISL- Advancing Informal STEM Learning</td>
<td>and Engineering (GSE)</td>
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<td>• Research in Disabilities</td>
<td>ITEST - Innovative Technology</td>
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<td>Education (RDE)</td>
<td>Experiences for Students and Teachers</td>
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<td>*ECR + REAL= FY2015</td>
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## Program Focus in DGE

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| Graduate Education (DGE) | Project and Program Evaluation (PPE)/Promoting Research and Innovation in Methodologies for Evaluation (PRIME) | • EHR Core Research: Workforce Development (ECR)*  
• SFS- CyberCorps: Scholarship for Service  
• GRF - Graduate Research Fellowship  
• NRT- National Research Traineeship  
• INSPIRE-Integrated NSF Support Promoting Interdisciplinary Research and Education  
• NSF Innovation Corps (I-Corps) |
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| Human Resource Development (HRD) | • ADVANCE-Increasing the Participation and Advancement of Women in S & E careers  
• AGEP-Alliances for Graduate Education and the Professoriate  
• HBCU-UP-Historically Black Colleges and Universities Undergraduate Program  
• TCUP- Tribal Colleges and Universities Programs | *Core Research & Development (ECR)  
LSAMP- Louis Stokes Alliances for Minority Participation | • PAEMST- Presidential Awards for Excellence in Mathematics and Science Teaching  
• PAESMEM- Presidential Award for Excellence in Science, Mathematics and Engineering Mentoring  
• CREST- Centers of Research Excellence in Science and Technology |
## Program Focus in DUE

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<td>Advanced Technological Education (ATE)</td>
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<td>IUSE- Improving Undergraduate STEM Education</td>
<td>Robert Noyce Teacher Scholarship Program (NOYCE)</td>
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<td></td>
<td></td>
<td>S-STEM = Scholarship in STEM Program</td>
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EHR is continuing a thematic emphasis.

- **Learning & Learning Environments**
- **Broadening Participation & Institutional Capacity**
- **Workforce Development**
Research, Development, and Model-Building for STEM Learning:

A Core Knowledge
- Foundational Research
- Early Stage and Exploratory Research

B Design and Development Projects

Knowledge and Evidence Resources

C Impact: Studies
- Efficacy Studies
- Effectiveness Studies
- Scale-up Studies

Common Guidelines for Education Research & Development
Prospective Principal Investigators

- Engage with NSF
- Answer fundamental questions
- Seek Collaborations
- Strengthen Interdisciplinary Partnerships
- Communicate – early and often!
Engage with NSF

• Submit Proposals
• Serve as Reviewers & 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.

Contact NSF Program Directors for questions and suggestions
<table>
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<th>Answer fundamental questions</th>
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<tr>
<td><strong>Goals</strong></td>
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<tr>
<td>What are you trying to accomplish?</td>
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<tr>
<td>What will be the outcomes?</td>
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<tr>
<td><strong>Rationale</strong></td>
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<tr>
<td>Why do you believe that you have a good idea?</td>
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<tr>
<td>Why is the problem important?</td>
</tr>
<tr>
<td>How does it tie into previous literature/efforts?</td>
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<tr>
<td>Why is your approach promising?</td>
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<tr>
<td><strong>Evaluation</strong></td>
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<tr>
<td>How will you manage the project to ensure success?</td>
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<tr>
<td>How will you know if you succeed?</td>
</tr>
<tr>
<td><strong>Dissemination</strong></td>
</tr>
<tr>
<td>How will others find out about your work?</td>
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<tr>
<td>How will you interest them?</td>
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<tr>
<td>How will you excite them?</td>
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Stay connected with NSF

- Guide to Programs: [www.nsf.gov/funding/browse_all_funding.jsp](http://www.nsf.gov/funding/browse_all_funding.jsp)
- Award Information: [www.nsf.gov/awardsearch](http://www.nsf.gov/awardsearch)
- FastLane: [www.fastlane.nsf.gov](http://www.fastlane.nsf.gov)
- Funding Opportunities: [www.nsf.gov/funding](http://www.nsf.gov/funding)
Thank You!

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dcampbel@nsf.gov