

# New Developments in the Division of Graduate Education



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Lead Program Director



# Division of Graduate Education

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## Focus

- Supports U.S. graduate students and innovative graduate programs to prepare tomorrow's leaders in STEM
- Provides leadership for the use and conduct of research to inform implementation of approaches, practices, and models for STEM professional workforce development





# Division of Graduate Education Portfolio

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Graduate Research  
Fellowship  
Program

NSF Traineeship  
Program

CyberCorps  
Scholarship for  
Service

EHR Core  
Research:  
Workforce  
Development

Project and  
Program  
Evaluation



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# Graduate Research Fellowship Program



[www.nsf.gov/grfp](http://www.nsf.gov/grfp) or [www.nsfgrfp.org](http://www.nsfgrfp.org)

## GOALS:

To select, recognize, and financially support individuals who have demonstrated the potential to be high achieving scientists and engineers, early in their careers.

To broaden participation in science and engineering of underrepresented groups, including women, minorities, persons with disabilities and veterans.

2,000 awards per year; \$34,000/year  
COE (\$12,000/year)





# Graduate Research Fellowship Program

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## CAREER-LIFE BALANCE INITIATIVE (CLB)

- Supplemental Funding Requests to GRP Awards ; sustain research while on family leave (\$12,000 + overhead)

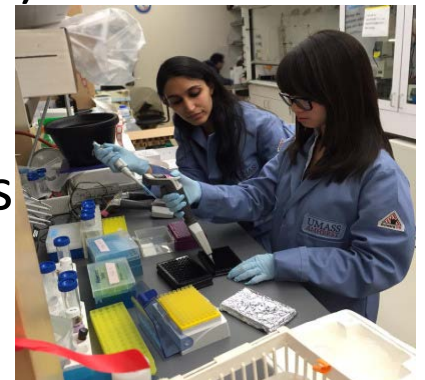
## PROFESSIONAL DEVELOPMENT OPPORTUNITIES

### GROW (Graduate Research Opportunities Worldwide)

- conduct research in partner countries (\$5,000)

### GRIP (Graduate Research Internship program)

- conduct research in federal agencies/facilities





## Graduate Research Opportunities Worldwide

Provides international travel allowance to **GRFP Fellows** to engage in research collaborations with investigators in partner countries

**Host Countries:** Australia, Austria, **Brazil**, Chile, **Colombia**, Denmark, Finland, France, **India**, **Indonesia**, Ireland, Japan, Korea, Mexico, the Netherlands, Norway, **Philippines**, **Senegal**, Singapore, **South Africa**, Sweden, Switzerland.

Agreements between NSF and counterpart agencies or **USAID**  
(United States Agency for International Development)



## Graduate Research Internship Program

Fellows will conduct mission-related, collaborative research projects at federal facilities and national laboratories.

### ***Partner Agencies:***

Office of Naval Research

Smithsonian Institution

Department of Homeland Security

Federal Bureau of Investigation

Environmental Protection Agency

National Oceanic and Atmospheric Administration

U.S. Census Bureau





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# NSF Research Traineeship ([NRT](#)) Program

*Research and Capacity Building & Student Support*

## 2014 Update


- The first 8 NRT awards announced
- 258 NRT proposals received from 48 states and Puerto Rico
- 65% on data-enabled science and engineering theme
- 63.6% from research universities with very high research activity

## [2015 Solicitation](#) – New Tracks:

- **Traineeship Track**
- **Innovations in Graduate Education (IGE) Track**

Press Release 15-032  
**NSF announces first NSF Research Traineeship awards**

Each project addresses an interdisciplinary topic of national importance




Ehsan Hoque has created an automated conversation assistant that senses body language and emotion.  
[Credit and Larger Version](#)


April 6, 2015

The National Science Foundation (NSF) is pleased to announce the first awardees for the recently launched NSF Research Traineeship (NRT) program.

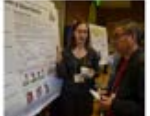
All of the NRT projects address an interdisciplinary topic of national importance, and six of the eight NRT projects strongly emphasize Data Enabled Science and Engineering, including analytics and Big Data. Innovative approaches to graduate training used across these projects include industry internships, international experiences, citizen science engagement,



Graduate student Emily Hoff exposes a superhydrophobic surface to complete submersion in water.  
[Credit and Larger Version](#)



Berkeley's NRT will advance research at the intersection of social, natural, and data science.  
[Credit and Larger Version](#)



Graduate student Julie Gerard discussing her research on child language learning at UNL.  
[Credit and Larger](#)



# Traineeship Key Features

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- Advancement of interdisciplinary research
- Development and testing of potentially transformative and scalable models
- Broad training for academic and non-academic careers
- Robust assessment that informs and improves practice; facilitates dissemination of effective models
- **Expanded Student Focus:** research-based STEM MS and PhD students
- **Revised Definition of Trainee:** students who complete program elements irrespective of funding source

***Awards:*** Up to \$3M; 5 yr (10 awards in FY 2015)

***Deadlines:*** Full Proposals: **May 6, 2015** (next: Feb 22, 2016)



# IGE Key Features

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- Catalyze rapid advances in STEM education broadly, as well as respond to disciplinary or interdisciplinary graduate education needs
- Development of test-bed projects that are informed by learning sciences and body of knowledge about STEM master's and doctoral graduate education
- Advancement of strategic collaborations and innovations that advance STEM graduate education to originate inside and outside the university

***Awards:*** \$300,000-\$500,000; 2-3 yr (14-20 awards FY 2015)

***Deadlines:*** Full Proposals: **May 6, 2015** (next: Feb 22, 2016)



# FY 2014 NRT Awards

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- **Generating, Analyzing, and Understanding Sensory and Sequencing Information**
- **Training in Data-Driven Discovery**
- **Computational Materials Education and Training**
- **Education Model Program on Water-Energy Research**
- **Environment and Society: Data Science for the 21<sup>st</sup> Century**
- **Flexibility in Language Processes and Technology**
- **Experimental, Theoretical, and Computational Competencies for Complex Interfaces**
- **Graduate Training in Data-Enabled Research into Human Behavior and its Cognitive and Neural Mechanisms**



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# CyberCorps<sup>®</sup>

## Scholarship for Service (SFS)

### Goals:

- Increase the number of **qualified students** entering the fields of information assurance and computer security
- Increase the **capacity of the US higher education enterprise** to continue to produce professionals in these fields to meet the needs of our increasingly technological society





# CyberCorps<sup>®</sup>: Scholarship for Service (SFS)

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## Scholarship Track

*\$1-5M/Scholarship grant to colleges and universities*

- **Funding:** full tuition, fees plus stipends (\$20K/\$32K per year)
- **Length:** 2-3 year scholarship for undergraduate or graduate (master's or doctoral) education
- **Obligation:** Summer internship, post-graduation service requirement (work in Federal/State/Local/Tribal agency equal to scholarship length)
- **Students Eligibility:**
  - U.S. Citizen, Enrolled in Cybersecurity program
  - Eligible for Federal employment (must acquire security clearance)

## Capacity Building Track

*\$300-900K per Capacity Building project*



- Supports efforts related to curriculum, outreach, faculty, institutional, and/or partnership development.





# CyberCorps<sup>®</sup>: Scholarship for Service (SFS)

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## Statistics

- 2,359 SFS scholarship recipients: 1,759 have graduated and 529 enrolled currently in academic programs.
- 70% - Master's level; 25% undergrads; 5% doctoral students
- SFS graduates serve in more than 140 federal departments, agencies and branches as well as in state, local, and tribal governments.

Top 15 Universities (Students Enrolled 2009-2014)	
University of Tulsa	98
Carnegie Mellon University	72
Mississippi State University	60
California State, San Bernardino	58
Northeastern University	42
U of North Carolina at Charlotte	42
Naval Postgraduate School	41
NYU - Polytechnic	40
Idaho State University	39
<b>U of Illinois at Urbana Champaign</b>	<b>38</b>
Air Force Institute of Technology	36
North Carolina A & T	35
Dakota State University	34
U of Nebraska at Omaha	28
U of Texas at Dallas	28



# CyberCorps<sup>®</sup>: Scholarship for Service (SFS)

<b>Top 10 Placements (SFS Graduates 2009-14)</b>	
<b>National Security Agency</b>	<b>120</b>
<b>US Navy</b>	<b>66</b>
<b>Mitre Corporation</b>	<b>53</b>
<b>Department of Homeland Security</b>	<b>50</b>
<b>Federal Reserve System</b>	<b>35</b>
<b>State, Local, &amp; Tribal</b>	<b>34</b>
<b>Sandia Laboratory</b>	<b>32</b>
<b>Department of Defense</b>	<b>31</b>
<b>Software Engineering Institute</b>	<b>28</b>
<b>Central Intelligence Agency</b>	<b>27</b>



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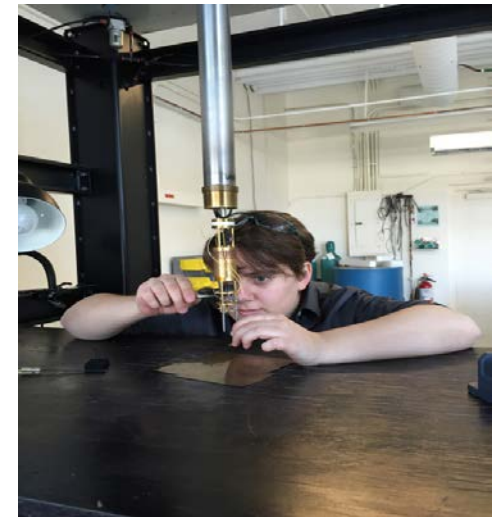


*Fundamental Research in Science, Technology, Engineering and Mathematics (STEM) Education*

- Provide a coherent foundation of theory and research evidence to guide and improve STEM learning
- Design of learning environments
- Research evidence to support STEM workforce development
- Broadening participation in STEM education

*Program Strands*

- STEM Learning/Learning Environments
- Broadening Participation and Institutional Capacity
- STEM Professional Workforce Development





# ECR Program Features

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- Perform fundamental research in critical areas that are essential, broad and enduring
- Synthesize, build and expand research foundations in graduate education
- Understand theory to explain and suggest interventions and innovations
- Address persistent challenges in STEM education, learning, participation and workforce development



# Projects funded by ECR

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- **Collaborative Research: Progressions of Skill Development in Biology Doctorates**
- **Collaborative Research: STEM Workforce Training: A Quasi-Experimental Approach Using the Effects of Research Funding**
- **Strategic Integration of MOOCs into Graduate and Professional STEM Programs in 21st Century Research Universities**



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# Promoting Research and Innovation in Methodologies for Evaluation (PRIME)

Solicitation [15-540](#)

- Supports research on evaluation of STEM education
- Three types support:
  - Exploratory Projects; proof-of-concept and feasibility studies
  - Full-Scale Projects
  - Conferences

Deadline: April 30, 2015





# Current Context for Graduate Education

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## NSF framework for graduate education

- NSF-wide efforts to develop a coherent agency strategy
- Interagency discussions about leveraging assets

## Goals

- Support training in areas of STEM incl. national priorities
- Catalyze development of innovative models of graduate education with potential for scalability
- Build the research knowledge base to inform improvements in graduate education
- Promote professional development of graduate students for academic and non-academic careers



# Working at NSF: How to apply for a Rotator position

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- Contact the relevant NSF program office
- Contact the Division of Human Resource Management
- Check <http://www.usajobs.gov>
  
- For more information:  
[http://www.nsf.gov/about/career\\_opps/rotators/](http://www.nsf.gov/about/career_opps/rotators/)





**Thank you!**