



NATIONAL SCIENCE FOUNDATION

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Program Director
Division of Graduate Education
Directorate for Education and Human Resources

Division of Graduate Education

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

Graduate
Research
Fellowship
Program

NSF Traineeship
Program

CyberCorps
Scholarship for
Service

EHR Core
Research:
Workforce
Development

Project and
Program
Evaluation



Graduate Research Fellowship Program (GRFP)

GOALS

- To select, recognize, and financially support individuals with the demonstrated 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

GRFP Key Elements

Five Year Award – \$132,000

- Three years of support
 - \$32,000 Stipend per year
 - \$12,000 Educational allowance to institution
- Professional Development Opportunities:
 - GROW: International Research
 - GRIP: Internships
- Supercomputer access: XSEDE
- Career Life Balance (family leave)



GRFP Unique Features

- Awarded to individual
- **Flexible:** choice of project, advisor & program
- **Unrestrictive:** No service requirement
- **Portable:** Any accredited U.S. institution
 - MS, MS and PhD, PhD
- **2010 - 2014:** 2,000 Fellowships each year
 - 2014: 14,000 Applications - ~14% success rate
 - 2015: 16,530 Applications

GRFP Eligibility

- U.S. citizens and permanent residents
- Early-career: undergrad & grad students
- Pursuing research-based MS and PhD
- Science and Engineering fields
- Enrolled in accredited institution in US by Fall



Academic Levels

- **1:** Seniors/baccalaureates; no graduate study
- **2:** First-year graduate students
- **3:** Second-year grad students
 - ≤ 12 months of graduate study by August
- **4:** >12 months graduate study
 - Interruption in graduate study of 2+ years (can have MS degree)



GRFP Resources

- NSF GRFP Website (nsf.gov/grfp)
 - Solicitation and links
- NSF GRFP FastLane Website (fastlane.nsf.gov/grfp)
 - Application, guides, announcements
- GRFP Website (www.nsfgrfp.org)
- Graduate Research Opportunities Worldwide (GROW) www.nsf.gov/grow
- Graduate Research Internship Program (GRIP) www.nsf.gov/grip or http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505127
- Current & former fellows
- Phone & e-mail
 - 866-NSF-GRFP (673-4737)
 - info@nsfgrfp.org



NSF RESEARCH TRAINEESHIP PROGRAM (NSF 15-542)

GOALS

- Catalyze and advance cutting-edge interdisciplinary research in high priority areas.
- Prepare STEM graduate students more effectively for successful careers within or outside academe.
- Develop models and knowledge that will promote transformative improvements in graduate education.



NRT Key Features

- Development and testing of potentially transformative and scalable models for STEM graduate education
- Extension of benefits to STEM graduate students across the institution and broad dissemination of successful models
- Facilitation/advancement of interdisciplinary research in areas of high national importance
- Broad training of STEM graduate students for both research and research-related careers



NRT Key Features (cont)

- Evidence-based strategies to broaden participation of students from diverse backgrounds
- Robust formative assessment that is central to the traineeship and routinely informs and improves practice



NRT Research Themes

- Data-Enabled Science and Engineering (DESE) theme
 - Address fundamental challenges in data-enabled science and engineering
 - Provide for educating the next generation of researchers and workers in this space
- Other crosscutting, interdisciplinary theme
 - Align with national STEM priority research areas
 - Have high potential for development of innovative practices of graduate education



NRT Program Tracks

- Trainee Track
 - Comprehensive traineeship model that is innovative, evidence-based, aligned with changing workforce needs, and scalable.
 - Priority interdisciplinary research theme
- Innovations in Graduate Education (IGE) Track
 - Piloting, testing, and evaluating novel, innovative, and potentially transformative approaches to graduate education
 - Test-bed projects with high potential to enrich, improve, and extend the knowledge base with attention to transferability and innovation



Funding Limitations

- Traineeship Track: Up to \$3,000,000 for five years
- IGE Track: \$300,000 - \$500,000 for 2-3 years
- Stipend requirements
 - For trainees whose research is aligned with the project's research theme
 - Minimum of \$32,000 for 12-month appointment
 - No charge for tuition and any other required costs of education while receiving NRT stipend



Proposal Content – Traineeship Track

- Comprehensive traineeship approach that is innovative, evidence-based, aligned with changing workforce and research needs, and scalable
- List of core participants, including evaluator
- Description of theme, vision, and goals
 - Integration of research and training elements
 - Potential to provide added value to current degree programs and methods of graduate training
 - Graduate training needs in thematic research field at host institution(s) and nationally
 - Scalability potential for proposed approaches

Proposal Content – Traineeship Track

- Education and training
 - Description of and rationale for traineeship model and components
 - Explicit approaches to provide training for academic and non-academic careers
 - Collaboration with non-academic partners
 - Timeline of logically phased, progressive training elements over the degree program
- Major research efforts
 - Potentially transformative research that NRT will catalyze
- Recruitment, mentoring and retention plans

CyberCorps®

The CyberCorps(R): Scholarship for Service (SFS) program seeks to **increase the number of qualified students** entering the fields of information assurance and computer security and to **increase the capacity of the United States higher education enterprise** to continue to produce professionals in these fields to meet the needs of our increasingly technological society.

The SFS program is composed of two tracks:

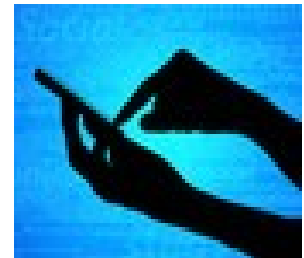
- **The Scholarship Track** provides funding to colleges and universities to award scholarships to students.
- **The Capacity Building Track** providing funds to support curriculum, outreach, faculty, institutional, and/or partnership development.

CyberCorps[®]: SFS Scholarship Track

- **Scholarship Component:**
 - Funding: tuition, fees, and stipends (\$20K/\$32K per year)
 - Length: 2-3 year scholarship for final years of undergraduate or graduate (master's or doctoral) education
 - Obligation: Summer internship, post-graduation service requirement (work in Federal agency equal to scholarship length)
- **Student Eligibility:**
 - U.S. Citizen
 - Enrolled in IA program, within 2-3 years of graduation
 - Eligible for Federal employment (must be able to acquire security clearance)
 - Awardee institutions set additional selection criteria
- **Institution Eligibility:**
 - National CAE/IAE designation or equivalent (DC3 Forensics, NSA Cyber Ops or alternative evidence)
 - Offer full-time program of study in IA field(s)

Funding Limitations

- CyberCorps®:Scholarship for Service
 - \$300,000 -900,000 per Capacity project
 - \$1-5M per Scholarship project



EHR CORE RESEARCH (ECR)

**FUNDAMENTAL RESEARCH IN SCIENCE,
TECHNOLOGY, ENGINEERING AND
MATHEMATICS (STEM) EDUCATION**

NSF 15-509

ECR Program Goal

Provide a coherent foundation of theory and research evidence to guide and improve STEM learning and the design of learning environments for all citizens, along with the research evidence to support STEM workforce development and broadening participation in STEM education and the workforce.



STEM Professional Workforce Development

Topics

- Impact of different funding models on undergraduate and graduate preparation for 21st century workforce
- Persistence in STEM majors and careers
- Influence of public/private partnerships on workforce preparation
- Use of big data for interpreting implications of labor market trends on STEM education and training



Proposal Types and Funding

Three levels

- Level I - \$500,000 – maximum of three years
- Level II - \$1,500,000 – maximum of three years
- Level III - \$2,500,000 – maximum of five years

Synthesis and conference/workshop proposals

Deadlines: February 3, 2015

September 10, 2015

Second Thursday in September Annually Thereafter



Promoting Research and Innovation in Methodologies for Evaluation (PRIME) NSF 15-540

- Supports research on evaluation
- Program Emphasis
 - Innovative approaches for determining the impacts and usefulness of STEM education projects and programs
 - Theoretical foundations for evaluating STEM education and workforce development initiatives
 - Building capacity and infrastructure for evaluation

PRIME Proposal Types

Deadline: April 30, 2015

- Exploratory Projects
 - Small-scale proof-of-concept and feasibility studies
 - \$250,000 for two years
- Full Scale Projects
 - Investigate pressing issues in the field
 - Build capacity for rigorous evaluations
 - \$800,000 for three years
- Conferences and workshops
 - Typically \$100,000 for three years



EHR Major Investments FY 2016

- Cyberinfrastructure Framework for 21st Century Science, Engineering, and Education (CIF21)
- Graduate Research Fellowship Program (GRF)
- NSF Innovation Corps (I-Corps)
- NSF INCLUDES
- Innovations at the Nexus of Food, Energy, and Water Systems (INFEWS)



EHR Major Investments FY 2016 cont'd

- Improving Undergraduate STEM Learning (IUSE)
- NSF Research Traineeship (NRT)
- Secure and Trustworthy Cyberspace (SaTC)
- Understanding the Brain (UtB)

