

# Graduate Research Fellowship Program (GRFP)

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## PROGRAM SOLICITATION

NSF 10-604

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### REPLACES DOCUMENT(S):

NSF 09-603

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#### National Science Foundation

Directorate for Education & Human Resources  
Division of Graduate Education

Directorate for Biological Sciences

Directorate for Computer & Information Science & Engineering

Directorate for Engineering

Directorate for Geosciences

Directorate for Mathematical & Physical Sciences

Directorate for Social, Behavioral & Economic Sciences

Office of Cyberinfrastructure

Office of Integrative Activities

Office of International Science and Engineering

Office of Polar Programs

#### Application Deadline(s) (due by 5 p.m. submitter's local time):

November 15, 2010

Interdisciplinary Fields of Study

November 16, 2010

Engineering

November 18, 2010

Mathematical Sciences; Computer and Information Sciences and Engineering; Chemistry;  
Physics and Astronomy

November 19, 2010

Social Sciences; Psychology; Geosciences; STEM Education and Learning

November 22, 2010

Life Sciences

## IMPORTANT INFORMATION AND REVISION NOTES

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1. Application deadlines have changed.
2. Fields of Study have been revised.
3. The description of eligibility requirements is clarified with respect to non-eligible fields of study.
4. The international options for Fellows have been revised.
5. The Fellowship conditions have changed. The NSF Graduate Research Fellowship cannot be accepted concurrently with another Federal fellowship.

## SUMMARY OF PROGRAM REQUIREMENTS

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### General Information

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Program Title:

**Synopsis of Program:**

The purpose of the NSF Graduate Research Fellowship Program (GRFP) is to help ensure the vitality and diversity of the scientific and engineering workforce in the United States. The program recognizes and supports outstanding graduate students who are pursuing research-based master's and doctoral degrees in fields within NSF's mission. The GRFP provides three years of support for the graduate education of individuals who have demonstrated their potential for significant achievements in science and engineering research. The ranks of NSF Fellows include individuals who have made transformative breakthroughs in science and engineering research and have become leaders in their chosen careers and Nobel laureates.

**Cognizant Program Officer(s):**

*Please note that the following information is current at the time of publishing. See program website for any updates to the points of contact.*

- Applications, contact: GRF Operations Center, telephone: (866) 673-4737, email: [info@nsfgrfp.org](mailto:info@nsfgrfp.org)
- Gisele Muller-Parker, telephone: (703) 292-8694, email: [grfp@nsf.gov](mailto:grfp@nsf.gov)
- Carmen Sidbury, telephone: (703) 292-8694, email: [grfp@nsf.gov](mailto:grfp@nsf.gov)
- Sheryl Tucker, telephone: (703) 292-8694, email: [grfp@nsf.gov](mailto:grfp@nsf.gov)
- Doris Carver, telephone: (703) 292-8694, email: [grfp@nsf.gov](mailto:grfp@nsf.gov)

**Applicable Catalog of Federal Domestic Assistance (CFDA) Number(s):**

- 47.041 --- Engineering
- 47.049 --- Mathematical and Physical Sciences
- 47.050 --- Geosciences
- 47.070 --- Computer and Information Science and Engineering
- 47.074 --- Biological Sciences
- 47.075 --- Social Behavioral and Economic Sciences
- 47.076 --- Education and Human Resources
- 47.078 --- Office of Polar Programs
- 47.079 --- Office of International Science and Engineering
- 47.080 --- Office of Cyberinfrastructure

**Award Information**

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**Anticipated Type of Award:** Fellowship

**Estimated Number of Awards:** 2,000 new Fellowships will be offered pending availability of funds.

**Anticipated Funding Amount:** \$158,240,000 Each Fellowship consists of three years of support usable over a five- year period. For each year of support, NSF provides a stipend of \$30,000 to the Fellow and a cost-of-education allowance of \$10,500 to the degree-granting institution.

**Eligibility Information**

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**Organization Limit:** Fellowship applications must be submitted by the prospective Fellow. Applicants must register with Fastlane (<https://www.fastlane.nsf.gov/>) prior to submitting an application and must enroll in an accredited United States university, college, or non-profit academic institution of higher education offering advanced degrees in science and engineering by Fall 2011. Confirmation of acceptance in an NSF-approved graduate degree program is required at the time of fellowship acceptance, by May 1, 2011.

**Applicant Eligibility:**

Refer to Section IV. Additional Eligibility Information.

**Limit on Number of Applications per Applicant:** 1

- Applicants are limited to only one application in this competition.

**Applicant Preparation and Submission Instructions**

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**A. Application Preparation Instructions**

- **Letters of Intent:** Not Applicable
- **Preliminary Proposal Submission:** Not Applicable
- **Application Instructions:** This solicitation contains information that deviates from the standard Grant Proposal Guide (GPG) proposal preparation guidelines. Please see the full text of this solicitation for further information.

**B. Budgetary Information**

- **Cost Sharing Requirements:** Cost Sharing is not required under this solicitation.

- **Indirect Cost (F&A) Limitations:** No indirect costs are allowed.
- **Other Budgetary Limitations:** Other budgetary limitations apply. Please see the full text of this solicitation for further information.

### C. Due Dates

- **Application Deadline(s)** (due by 5 p.m. submitter's local time):

November 15, 2010

Interdisciplinary Fields of Study

November 16, 2010

Engineering

November 18, 2010

Mathematical Sciences; Computer and Information Sciences and Engineering; Chemistry; Physics and Astronomy

November 19, 2010

Social Sciences; Psychology; Geosciences; STEM Education and Learning

November 22, 2010

Life Sciences

## Application Review Information Criteria

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**Merit Review Criteria:** National Science Board approved Merit Review Criteria (Intellectual Merit and Broader Impacts) apply.

## Award Administration Information

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**Award Conditions:** Fellowships are made subject to the provisions (and any subsequent amendments) contained in the document *NSF Graduate Research Fellowship Program (GRFP) Guide for Fellows and GRFP Coordinating Officials*.

**Reporting Requirements:** See reporting requirements in full text of solicitation and *NSF Graduate Research Fellowship Program (GRFP) Guide for Fellows and Coordinating Officials*.

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## I. INTRODUCTION

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The NSF Graduate Research Fellowship Program (GRFP) provides fellowships to individuals selected early in their graduate careers based on their demonstrated potential for significant achievements in science and engineering. Three years of support is provided by the program for graduate study that is in a field within NSF's mission and leads to a research-based master's or doctoral degree.

GRFP is a critical program in NSF's overall strategy in developing the globally-engaged workforce necessary to ensure the Nation's leadership in advancing science and engineering research and innovation. The ranks of NSF Fellows include individuals who have made transformative breakthroughs in science and engineering research and have become leaders in their chosen careers and Nobel laureates. A high priority for NSF and GRFP is increasing the diversity of the science and engineering workforce, including geographic distribution and the participation of women, underrepresented minorities, and persons with disabilities.

Applicants are urged to visit the NSF web page at <http://www.nsf.gov/> for more information and guidance about current and emerging themes for the NSF.

## II. PROGRAM DESCRIPTION

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The Graduate Research Fellowship Program awards fellowships for graduate study leading to research-based master's and doctoral degrees in the fields of science and engineering relevant to the mission of the National Science Foundation (See [Fields of Study](#)). This list provides applicants guidelines on appropriate fields and is used as an aid in placing applications in the most appropriate review panel.

NSF Graduate Research Fellowships are awarded to individuals in the early stages of their graduate study. All applicants are expected to have adequate preparation to begin graduate-level study and research by Summer or Fall of 2011. This is nearly always demonstrated by a bachelor's degree in a science and engineering field earned prior to Fall 2011. In addition, fellowship awardees must be enrolled in an accredited US university, college, or non-profit academic institution of higher education offering advanced degrees in science and engineering by Fall 2011. Confirmation of acceptance in an NSF-approved graduate degree program is required at the time of fellowship acceptance, by May 1, 2011.

Applicants may pursue research-based graduate study at an accredited institution located in the US which grants a graduate degree in an NSF-supported field. While applicants must enroll in a US-based institution, NSF encourages graduate students to establish collaborative relationships with international researchers. US graduate students should have the opportunity to take advantage of expertise, facilities, data, and field sites located abroad; to develop an international network of collaborators early in their career; to address problems of a global nature that require international cooperation; and to be prepared to operate successfully in international teams as they join the US science and engineering workforce. Fellows will receive instructions on how to apply for GRFP support for participating in international collaborative research opportunities via a subsequent Dear Colleague Letter.

GRFP supports individuals proposing a comprehensive holistic plan for graduate education that takes into account individual interests and competencies. Thus, an applicant must provide a detailed profile of her or his relevant educational and research experiences and plans for graduate education in such a way as to demonstrate potential for significant achievements in science and engineering.

Prospective applicants are advised that submission of an application implies a commitment to the pursuit of graduate study in a research-based program in a science and engineering field supported by NSF (See [Fields of Study](#)). Acceptance of a fellowship award is an explicit agreement that the Fellow will be duly enrolled in an NSF-approved graduate degree program in the field of study indicated in their application by the beginning of the following academic year. Changes in field of study that may occur later in the graduate career require NSF approval for continued fellowship support.

## III. AWARD INFORMATION

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The NSF expects to award 2,000 Graduate Research Fellowships under this program solicitation pending availability of funds.

For each matriculated Fellow, the institution receives up to a \$40,500 award per Fellow tenure year (12-month increments) to cover the costs described below.

The Graduate Research Fellowship stipend is currently \$30,000 for a 12-month tenure period, prorated in whole month increments of \$2,500.

The cost-of-education allowance to the institution is currently \$10,500 per tenure year and is to be used by the institution toward the costs of educating the Fellow during that time period. During tenure, the institution is required to exempt Fellows from paying tuition and fees normally charged to students of similar academic standing, unless such charges are optional or are refundable (i.e., the institution is responsible for tuition and required fees in excess of the cost of education allowance). Refer to the *NSF Graduate Research Fellowship Program (GRFP) Guide for Fellows and GRFP Coordinating Officials* for restrictions on the use of the cost-of-education allowance.

Fellows will receive announcements about GRFP support of their participation in international opportunities.

Fellows are provided enhanced access to cyberinfrastructure resources, including supercomputing time, through the TeraGrid. Please refer to <http://www.teragrid.org> for more information on cyberinfrastructure resources.

All fellowships will be for a maximum of three years (in 12-month allocations, starting in summer or fall) usable over a five-year period. The anticipated announcement date for the fellowships is early April 2011.

### Honorable Mention

The NSF accords Honorable Mention to meritorious applicants who do not receive fellowship awards. This is considered a significant national academic achievement and provides access to cyberinfrastructure resources through the TeraGrid. Please refer to <http://www.teragrid.org> for more information on cyberinfrastructure resources.

## IV. ELIGIBILITY INFORMATION

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**Organization Limit:** Fellowship applications must be submitted by the prospective Fellow. Applicants must register with Fastlane (<https://www.fastlane.nsf.gov>) prior to submitting an application and must enroll in an accredited United States university, college, or non-profit academic institution of higher education offering advanced degrees in science and engineering by Fall 2011. Confirmation of acceptance in an NSF-approved graduate degree program is required at the time of fellowship acceptance, by May 1, 2011.

### Applicant Eligibility:

Refer to Section IV. Additional Eligibility Information.

### Limit on Number of Applications per Applicant: 1

- Applicants are limited to only one application in this competition.

### Additional Eligibility Info:

Described in detail below are the three eligibility requirements for the Graduate Research Fellowship Program: (1) citizenship, (2) graduate plan of study degree requirements, **and** (3) field of study. Applicants are advised to read the entire program solicitation carefully to be sure that the requirements are interpreted properly. Applicants must exercise judgment in assessing eligibility.

Eligibility will be determined only by review of a complete, submitted application.

Categories of applicants that are always ineligible:

- Those who do not have US citizen, US national or permanent resident alien status by the application deadline.
- Those who were previously awarded a fellowship from the NSF Graduate Research Fellowship Program and accepted it.
- Those who have declined the offer of the NSF Graduate Research Fellowship and who did not notify NSF by the published deadline for accepting the fellowship.
- Those who have earned a PhD in a science or engineering field, or any medical degree, such as an MD, DDS or DVM.
- Current NSF employees.

#### 1. Citizenship

Applicants must be United States citizens or nationals, or permanent resident aliens of the United States by the application deadline.

The term "national" designates a native resident of a commonwealth or territory of the United States, such as American Samoa, Guam, Puerto Rico, US Virgin Islands, or the Northern Mariana Islands. It does not refer to a citizen of another country who has applied for US citizenship.

#### 2. Degree Requirements

Fellowships are awarded to individuals in the early stages of their graduate study. Below are general guidelines for determining eligibility according to the degree requirements criterion.

- Applicants are expected to have adequate preparation to begin graduate study and research by summer or fall 2011. This is nearly always demonstrated by receipt of a bachelor's degree in a science or engineering field earned prior to Fall 2011.
- Individuals are typically eligible to apply:
  - During the senior year of college
  - After graduating from college and prior to entering graduate school
  - During the first year of graduate school
  - Prior to completing the Fall term of the second year of graduate school.
- Applicants must have, completed no more than 12 months of full-time graduate study or its equivalent as of August 1, 2010. Full-time graduate study is as defined by the universities attended.
- Applicants who have completed part-time graduate study must have completed no more than 24 semester hours or 36 quarter hours or their equivalent as of August 1, 2010. This credit hour limit applies only to part-time graduate students; there is no credit hour limit for full-time students.
- All post-baccalaureate, graduate-level study in any NSF-supported field of study (See [Fields of Study](#)) is counted toward the allowed 12 months of completed graduate study. This includes all Master's and doctoral programs in these disciplines.

Applicants in joint BS/MS programs are typically eligible to apply prior to completion of any further graduate study.

- In four-year joint programs, applicants may apply in the fourth year and after completion of the program. Completion of any graduate study outside of the joint program will disqualify an applicant.
- In five-year joint programs, applicants may apply in the fourth and fifth years of the program and after completion of the program. Completion of any further graduate study outside of the joint program will disqualify an applicant.

#### Definition of Completed Graduate Study and Extenuating Circumstances

Applicants may have completed no more than 12 months of full-time graduate study or its equivalent by August 1, 2010. Pre-graduate participation in summer activities (e.g., bridge programs, field studies, lab rotations, etc.) offered by a graduate program prior to the start of the Fall Graduate Program are not included in this total.

All post-baccalaureate, graduate level graduate study in any NSF-supported field is counted towards the allowed 12 months of graduate study. This includes the following:

- All Master's programs (including research-based or coursework-based programs, and "terminal" programs as well as those that are contiguous with a Ph.D. program)
- All Doctoral programs
- Post-baccalaureate, graduate-level coursework in any NSF-supported field completed outside a degree program
- Post-baccalaureate, graduate-level coursework in a non-NSF-supported field that is nevertheless related to the proposed graduate program (i.e., that does not represent a significant change of field). A "significant change of field" is a primary field of study change (e.g., higher level categories listed in bold, such as Chemistry, Physics, etc. in the Fields of Study, see [Appendix](#)).
- Both full-time and part-time graduate programs

Research-based work experience in an academic or similar environment that is closely related to the current or proposed program of graduate study may be considered equivalent to graduate coursework for eligibility purposes. A combination of relevant work experience and completed coursework may render an applicant ineligible.

### Extenuating Circumstances

In some cases, applicants who have completed more than twelve months of graduate study may be considered eligible if there are certain extenuating circumstances. Acceptable extenuating circumstances typically place an applicant who has completed more than twelve months of graduate study in a position equivalent to that of an individual who has completed no more than twelve months of graduate study in the proposed field.

Extenuating circumstances may include:

- An interruption in graduate study of more than two years prior to November 2010 due to medical or personal reasons.
  - If the interruption includes workplace research experience that is related to the proposed graduate study, it might not be considered an extenuating circumstance.
- A significant change of field
  - A "significant change of field" is a primary field of study change (e.g., higher level categories listed in bold, such as Chemistry, Physics, etc. in the Fields of Study, see [Appendix](#)).

The following are **not** considered significant changes of field:

- Changing focus within the same primary (higher level) field of study
- Starting a new graduate program at a new institution or with a new advisor, and continuing in the same primary field of study as in the previous graduate study
- Changing from a non-NSF-supported field or program (e.g. public health or clinical psychology) to an NSF-supported program when there is demonstrable continuity between the previous and proposed graduate study (i.e., the change is not at the level of the primary [higher level] categories listed in the Fields of Study, see [Appendix](#)).
- Changing primary fields of study but with demonstrable continuity between the previous and proposed graduate study. Interdisciplinary programs of study may qualify as a significant change if the new program of study includes a majority of effort in fields other than those in the previous program of study.

All extenuating circumstances are considered on a case-by-case basis and are determined only upon review of a complete, submitted application. Applicants who may be in this category should complete the eligibility essay.

### 3. Field of Study

Fellowships are awarded for graduate study leading to research-based master's and doctoral degrees in the fields and programs of science and engineering supported by the National Science Foundation (See [Fields of Study](#), see [Appendix](#) and the NSF Proposal and Awards Policies and Procedures Guide, [NSF 11-001](#)). The guidelines below should be used to assess eligibility according to the field of study criterion.

- Categories and programs of study that are always ineligible:
  - Practice-oriented professional degree programs, joint professional degree-science programs (MD/PhD and JD/PhD), or medical, dental, law, and public health programs. Examples of typical ineligible degree programs include MBA, MPH, MSW, ED, etc.
  - Clinical (see below), counseling, business administration or management programs, social work, education (except in science and engineering education in an NSF-supported discipline), or history (except in history of science).
- Clinical and counseling psychology programs are not supported in this program. Clinical study includes patient-oriented research, epidemiological and behavioral studies, outcomes research and health services research. Clinical study includes, for example, investigations to provide evidence leading to a scientific basis for consideration of a change in health policy or standard of care, and includes pharmacologic, non-pharmacologic, and behavioral interventions for disease prevention, prophylaxis, diagnosis, or therapy. Community- and other population-based intervention trials are also included. Applicants in clinical or counseling psychology graduate programs are ineligible even if the proposed graduate research may be classified under one of the NSF-supported fields of psychology.
- Research and programs of study with disease-related goals, including work on the etiology, diagnosis or treatment of physical or mental disease, abnormality, or malfunction in human beings or animals, are not supported. Animal models of such conditions or the development or testing of drugs or other procedures for their treatment also are not eligible for support. However, applicants in eligible programs may conduct research in bioengineering, with diagnosis- or treatment-related goals, that applies engineering principles to problems in biology and medicine while advancing engineering knowledge. Applicants in eligible programs may also conduct bioengineering research to aid persons with disabilities. For further information about the National Science Foundation, see the Proposal & Award Policies & Procedures Guide Introduction Section A, About the National Science Foundation.

**The Graduate Research Fellowship Operations Center is responsible for processing applications and responding to questions about the program. For questions concerning these guidelines, contact the Graduate Research Fellowship Operations Center, (866) 673-4737, international (202) 331-3542, or [info@nsgrfp.org](mailto:info@nsgrfp.org). A final eligibility decision will be determined only on the basis of a completed submitted**

## application.

### Women in Engineering Awards

The Directorate for Engineering will continue The Women in Engineering program and make awards to women who intend to pursue graduate research degrees in Engineering. Eligibility, application, and review criteria are the same as for applicants in other fields.

## V. APPLICATION PREPARATION AND SUBMISSION INSTRUCTIONS

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### A. Application Preparation Instructions

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Fellowship applications and three reference letters must be submitted electronically using the NSF FastLane Graduate Research Fellowship Program Application Module at <http://www.fastlane.nsf.gov/grfp/> according to the Field of Study deadline. An applicant must first register as a FastLane user at that web site. The *official* transcript(s) is (are) due by the relevant Field of Study deadline and must be submitted to the GRF Operations Center at the address shown in this section. See the **Applicant User Guide** for instructions on completing and submitting an application.

The **FastLane GRFP Application Module** includes the following information: Personal Profile, Education and Work Experience, Planned Graduate Program, Personal Statement, Previous Research Experience, Proposed Plan of Research, and References. Do not send other extraneous information or materials such as CDs, manuscripts, resumes, medical reports, or news clippings. These items will not be reviewed with your application. No additional information may be provided by links to web pages within the proposal, except as part of citations in the References Cited section. Images may be included in the page limits but will be reproduced only in black and white. Review of the application is based solely on materials received by the application deadline.

**Applicants must follow the instructions in the user guide and application module for completing each section of the application. The essays must be written using standard 8.5" x 11" page size, 12-point, Times New Roman font, 1" margins on all sides, and must be single spaced or greater. Only references and footnotes may be a smaller font, no less than 10-point Times New Roman. The Personal Statement, Previous Research Experience, and Proposed Plan of Research essays each have a maximum length of two pages, including all references, citations, charts, figures, and images. The optional Program Eligibility essay is limited to one page. Failure to comply fully with these requirements will eliminate the application from consideration by review panels. Additionally, applications that are incomplete (missing required transcripts and/or reference letters, or that do not have "submitted" status by the application deadline) are ineligible for panel review. Applicants are advised to submit applications early to avoid possible FastLane system delays on the deadline dates.**

Supplemental Application Materials are described below.

- **Official Academic Transcripts (Must be received by Field of Study deadline)**

Academic transcripts are required for all institutions listed by the applicant in the FastLane GRFP Application Module, excluding Fall 2010. Required transcripts include academic transcripts from the baccalaureate institution and transcripts for all completed graduate work. Transcripts must be received by the Field of Study application deadline and submitted to the GRF Operations Center in hard copy via postal mail, express service, or courier to:

GRF Operations Center  
1818 N Street NW  
Suite 600  
Washington, DC 20036  
Telephone: 866-673-4737

- **Three Reference Letters (Must be received by Field of Study deadline)**

Applications must include a total of three reference letters from non-family members to be eligible for review. Applicant-nominated reference writers submit their letters through the FastLane GRFP Application Module. They should incorporate letterhead, if possible, and include the following information: name and title of reference writer, department, and institution or organization. The reference letter should provide details explaining the nature of the relationship to the applicant, comments on the applicant's potential for contributing to a globally-engaged United States science and engineering workforce, statements about the applicant's academic potential and prior research experiences, statements about the applicant's proposed research, and any other information to enable review panels to evaluate the application according to the NSF Merit Review Criteria of Intellectual Merit and Broader Impacts. Reference writers should provide an appropriate e-mail address for the applicant to enter into the FastLane GRFP Application Module. An exact e-mail address is crucial to matching the reference writer and the applicant in the FastLane GRFP Application Module. Applicants should ask reference writers well in advance of the application deadline and it is recommended they provide copies of their application materials to the writers.

#### Application Completion Status

The FastLane GRFP Application Module will display the completion status of the fellowship application. The status function will indicate whether the application and the supplemental information, such as transcripts and reference letters have been received. Applicants are strongly encouraged to make use of this feature to ensure all application materials have been received. Applicants must use the FastLane user ID and password to access this information. For FastLane user support, call the FastLane Help Desk at 1-800-673-6188 or e-mail [fastlane@nsf.gov](mailto:fastlane@nsf.gov).

#### Interdisciplinary Applications

NSF welcomes applications for interdisciplinary programs of study and research. Interdisciplinary research is defined as "a mode of research by teams or individuals that integrates information, data, techniques, tools, perspectives, concepts, and/or theories from two or more disciplines or bodies of specialized knowledge to advance fundamental understanding or to solve problems whose solutions are beyond the scope of a single discipline or area of research practice" (National Academy of Sciences 2004 report: Facilitating interdisciplinary research). To accommodate the special review needs of interdisciplinary applications, applicants must indicate the relative effort for each field of study represented in their application. Interdisciplinary applications in which no one field of study



predominates should be classified as "Interdisciplinary Fields of Study" and submitted by the Interdisciplinary Fields of Study deadline of November 15, 2010. The applicant should, nonetheless, list all of the disciplines represented in their application along with relative effort for each discipline. For applications in which one major discipline predominates, applicants are instructed to identify that one as the primary field of study in the FastLane GRFP Application Module along with all other fields of study represented in their application, and to submit their application by the deadline for the primary field of study. Proper response to these instructions will help insure that applications are evaluated by the most appropriate panel(s) of reviewers.

## B. Budgetary Information

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**Cost Sharing:** Cost sharing is not required under this solicitation.

**Indirect Cost (F&A) Limitations:** No indirect costs are allowed.

**Other Budgetary Limitations:** NSF awards \$40,500 each year to the affiliated institution to cover the Fellow stipend and cost-of-education allowance for each NSF Graduate Research Fellow "On Tenure" at that institution.

The NSF Graduate Research Fellowship Program fellowship stipend currently is \$30,000 for a 12-month tenure period, prorated in monthly increments of \$2,500.

The institutional cost-of-education allowance currently is \$10,500 per tenure year per fellow.

## C. Due Dates

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- **Application Deadline(s)** (due by 5 p.m. submitter's local time):

November 15, 2010

Interdisciplinary Fields of Study

November 16, 2010

Engineering

November 18, 2010

Mathematical Sciences; Computer and Information Sciences and Engineering; Chemistry; Physics and Astronomy

November 19, 2010

Social Sciences; Psychology; Geosciences; STEM Education and Learning

November 22, 2010

Life Sciences

## D. Fastlane Requirements

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Applicants are required to prepare and submit all applications for this program solicitation through the FastLane system. Detailed instructions for application preparation and submission via FastLane are available at: <http://www.fastlane.nsf.gov/a1/newstan.htm>. For FastLane user support, call the FastLane Help Desk at 1-800-673-6188 or e-mail [fastlane@nsf.gov](mailto:fastlane@nsf.gov). The FastLane Help Desk answers general technical questions related to the use of the FastLane system. Specific questions related to this program solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this solicitation.

## VI. APPLICATION REVIEW INFORMATION

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### A. NSF Application Review Process

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Applications will be reviewed by panels of disciplinary and interdisciplinary scientists and engineers and other professional graduate education experts. Applications will be assigned to panels based on the applicant's chosen Field(s) of Study and the discipline(s) represented. Thus, applicants are advised to select the Field of Study in the FastLane GRFP Application module that is most closely aligned with the proposed graduate program of study and research plan.

Each application will be reviewed independently in accordance with the NSF Merit Review Criteria using all available information in the completed application. In considering applications, reviewers are instructed to address the two Merit Review Criteria as approved by the National Science Board - Intellectual Merit and Broader Impacts (NSF Proposal and Awards Policies and Procedures Guide, [NSF 11-001](#)). **Therefore, applicants must address explicitly each criterion in their written statements in order to provide reviewers with the information necessary to evaluate the application with respect to both Criteria as detailed below.**

**What is the intellectual merit of the proposed activity?**

How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields? How well qualified is the proposer (individual or team) to conduct the project? (If appropriate, the



reviewer will comment on the quality of prior work.) To what extent does the proposed activity suggest and explore creative, original, or potentially transformative concepts? How well conceived and organized is the proposed activity? Is there sufficient access to resources? If international activities are proposed, are the proposed activities relevant and do they benefit the applicant?

**For example, panelists may consider the following with respect to the Intellectual Merit Criterion: the strength of the academic record, the proposed plan of research, the description of previous research experience or publication/presentations, references, and the appropriateness of the choice of institution relative to the proposed plan for graduate education and research.**

**What are the broader impacts of the proposed activity?**

How well does the activity advance discovery and understanding while promoting teaching, training, and learning? How well does the proposed activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.)? To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks, and partnerships? Will the results be disseminated broadly to enhance scientific and technological understanding? What may be the benefits of the proposed activity to society?

Background information and examples of Broader Impacts activities are available at <http://www.nsf.gov/pubs/gpg/broaderimpacts.pdf>

**For example, panelists may consider the following with respect to the Broader Impacts Criterion: the personal, professional, and educational experiences, the future plans and prior accomplishments in the integration of research and education, and the potential to reach diverse audiences and benefit society.**

## B. Application Review and Selection Process

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Applications submitted in response to this program solicitation will be reviewed by Panel Review.

The application evaluation involves the review, rating, and ranking of applications by disciplinary and interdisciplinary scientists and engineers, and other professional graduate education experts.

The primary responsibility of each panel is to evaluate the merit of eligible GRFP applications by applying the National Science Board-approved Merit Review Criteria of Intellectual Merit and Broader Impacts, and to subsequently recommend applicants for NSF Graduate Research Fellowships. Panelists are instructed to review the applications holistically in the context of applying NSF's Merit Review Criteria and the GRFP emphasis on demonstrated potential for significant achievements in science and engineering. NSF determines the successful applicants from these recommendations, with fellowships and honorable mention offered based on the GRFP portfolio within the context of NSF's mission.

After NSF fellowship offers are made, applicants are able to view the verbatim reviewer comments, excluding the names of the reviewers, through a secure website at the GRFP Operations Center.

## VII. AWARD ADMINISTRATION INFORMATION

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### A. Notification of the Award

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The Division of Graduate Education generally notifies applicants within six months after the deadline of the outcome of their applications. The NSF publishes lists of Fellowship and Honorable Mention recipients on the GRFP website at <http://www.fastlane.nsf.gov/grfp> in April 2011.

### B. Award Conditions

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An NSF Graduate Research Fellowship award consists of the notification letter that includes the applicable terms and conditions and fellowship management instructions. All Fellowships are made subject to the provisions (and any subsequent amendments) contained in the document *NSF Graduate Research Fellowship Program (GRFP) Guide for Fellows and GRFP Coordinating Officials*.

NSF will award GRFP Fellowship Grants to the Institution providing funds for NSF Fellows who have "on tenure" status. The Institution will accept such grants, including any amendments to them and administer them in accordance with the terms of the Agreement and provisions (and any subsequent amendments) contained in the document *NSF Graduate Research Fellowship Program (GRFP) Guide for Fellows and GRFP Coordinating Officials*.

NSF Graduate Research Fellowship Program applicants will be notified in early April 2011 of their selection. The applicant must accept or decline the Fellowship within 30 days of notification by logging into the Graduate Research Fellowship Program link at: <http://www.fastlane.nsf.gov/grfp> with the applicant User ID and password. Failure to comply with the deadline and acceptance of award conditions by the deadline will result in revocation of the fellowship offer and render applicants ineligible to re-apply.

Other Opportunities for Fellowship Awardees and Honorable Mention Recipients

Fellows and Honorable Mention recipients may request cyberinfrastructure resources through the TeraGrid. Details on resources available are described at: <http://www.teragrid.org>. Requests must be for cyberinfrastructure resources in support of research undertaken toward completion of the graduate program of study.

Facilitation Awards for Scientists and Engineers with Disabilities (FASSED) provide funding for special assistance or equipment to enable persons with disabilities (students and faculty) to work on NSF-supported projects. Fellowship awardees and Honorable Mention recipients with disabilities may apply for assistance by contacting [grfp@nsf.gov](mailto:grfp@nsf.gov).

Award Conditions

Awardees must formally accept and agree to the terms and conditions of the award. Acceptance of a fellowship award is an explicit acceptance of this commitment and assurance that the Fellow will be duly enrolled in an NSF-approved graduate degree program in the field of study indicated in their application by the beginning of the following academic year. Awardees are expected to enroll in the program proposed in their application and follow the course of study in that program. Major changes in scope later in the graduate career require NSF approval. The *NSF Graduate Research Fellowship Program (GRFP) Guide for Fellows and GRFP Coordinating Officials* includes the terms and conditions that apply to the fellowship and subsequent institutional award, in addition to the eligibility requirements (citizenship, degree requirements and field of study) and Certifications in the application.

The GRFP fellowship cannot be accepted concurrently with another Federal fellowship.

#### Responsible Conduct of Research

Institutions are responsible for verifying that undergraduate students, graduate students, and postdoctoral researchers supported by NSF to conduct research have received training in the responsible and ethical conduct of research.

#### Research Involving Human Subjects

Projects involving research with human subjects must ensure that subjects are protected from research risks in conformance with the relevant federal policy known as the Common Rule (Federal Policy for the Protection of Human Subjects, 45 CFR 690). All projects involving human subjects must either (1) have approval from the organization's Institutional Review Board (IRB) before fellowship award or (2) must affirm that the IRB or an appropriate knowledgeable authority previously designated by the organization (not the Applicant) has declared the research exempt from IRB review, in accordance with the applicable subsection, as established in section 101(b) of the Common Rule. Applicants and Fellows are required to comply with this policy and adhere to the organization's protocol for managing research involving human subjects.

#### Proposals Involving Vertebrate Animals

Any project proposing use of vertebrate animals for research or education shall comply with the Animal Welfare Act [7 U.S.C. 2131 et seq.] and the regulations promulgated thereunder by the Secretary of Agriculture [9 CFR 1.1-4.11] pertaining to the humane care, handling, and treatment of vertebrate animals held or used for research, teaching or other activities supported by Federal awards. In accordance with these requirements, proposed projects involving use of any vertebrate animal for research or education must be approved by the submitting organization's Institutional Animal Care and Use Committee (IACUC) before an award can be made. For this approval to be accepted by NSF, the organization must have a current Public Health Service (PHS) Approved Assurance.

Projects involving the care or use of vertebrate animals at a foreign organization or foreign field site also require approval of research protocols by the U.S. grantee's IACUC. If the project is to be funded through an award to a foreign organization or through an individual fellowship award that will support activities at a foreign organization, NSF will require a statement of compliance that the activities will be conducted in accordance with all applicable laws in the foreign country and that the International Guiding Principles for Biomedical Research Involving Animals (see <http://www.cioms.ch>) will be followed.

#### Legal Rights to Intellectual Property

The National Science Foundation claims no rights to any inventions or writings that might result from its fellowship or traineeship grants. However, fellows and trainees should be aware that the NSF, another Federal agency, or some private party may acquire such rights through other support for particular research. Also, fellows and trainees should note their obligation to include an Acknowledgment and Disclaimer in any publication.

## C. Reporting Requirements

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#### Acknowledgment of Support

All publications and presentations based on work conducted during the fellowship must acknowledge the support of the NSF Graduate Research Fellowship Program (e.g., (name) is supported by a Graduate Research Fellowship from the National Science Foundation).

#### Annual Activity Report

Regardless of tenure status, Fellows are required to submit an Activity Report annually, using NSF's FastLane electronic fellowship management and reporting system. The system permits electronic submission and updating of activity reports, including information on research accomplishments and activities related to broader impacts, presentations, publications, teaching and research assistantships, awards and recognitions, and other scholarly and service accomplishments.

#### Annual Tenure Declaration

By the fellowship acceptance deadline individuals receiving the fellowship offer must be accepted by and duly enrolled in by the beginning of the following academic year, an NSF-approved graduate degree program. Fellows must declare their intent to utilize the fellowship for the following year annually using the NSF GRFP FastLane fellowship management and reporting system. Failure to declare intent by the established deadline violates the terms and conditions for NSF fellowship awards, resulting in revocation of the fellowship offer.

#### Program Evaluation

The Division of Graduate Education (DGE) is conducting an evaluation to determine how effectively the GRFP is achieving its aim of responding to the nation's need for a diverse, internationally competitive and globally-engaged science and engineering workforce. Additionally, it is highly desirable to have a structured means of tracking Fellows beyond graduation to gauge the extent to which they follow a career path consistent with the intent of the program and to assess the impact the NSF Graduate Research Fellowship has had on their graduate education experience. Accordingly, Fellows may be contacted during and after the completion of this fellowship for updates on various aspects of their employment history, professional activities and accomplishments, participation in international research collaborations, and other information helpful in evaluating the impact of the program. Fellows and their institutions agree to cooperate in program-level evaluations conducted by the NSF and/or contracted evaluators.

## VIII. AGENCY CONTACTS

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Please note that the program contact information is current at the time of publishing. See program website for any updates to the points of contact.

General inquiries regarding this program should be made to:

- Applications, contact: GRF Operations Center, telephone: (866) 673-4737, email: [info@nsfgrfp.org](mailto:info@nsfgrfp.org)
- Gisele Muller-Parker, telephone: (703) 292-8694, email: [grfp@nsf.gov](mailto:grfp@nsf.gov)
- Carmen Sidbury, telephone: (703) 292-8694, email: [grfp@nsf.gov](mailto:grfp@nsf.gov)
- Sheryl Tucker, telephone: (703) 292-8694, email: [grfp@nsf.gov](mailto:grfp@nsf.gov)
- Doris Carver, telephone: (703) 292-8694, email: [grfp@nsf.gov](mailto:grfp@nsf.gov)

For questions related to the use of FastLane, contact:

- FastLane Help Desk, telephone: 1-800-673-6188; e-mail: [fastlane@nsf.gov](mailto:fastlane@nsf.gov).

The Graduate Research Fellowship Operations Center is responsible for processing applications and responding to requests for information. General inquiries regarding the Graduate Research Fellowship Program should be made to:

Graduate Research Fellowship Operations Center, telephone: 866-NSF-GRFP, 866-673-4737 (toll-free from the US and Canada) or 202-331-3542 (international). email: [info@nsfgrfp.org](mailto:info@nsfgrfp.org)

## IX. OTHER INFORMATION

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The NSF Website provides the most comprehensive source of information on NSF Directorates (including contact information), programs and funding opportunities. Use of this Website by potential proposers is strongly encouraged. In addition, National Science Foundation Update is a free e-mail subscription service designed to keep potential proposers and other interested parties apprised of new NSF funding opportunities and publications, important changes in proposal and award policies and procedures, and upcoming NSF Regional Grants Conferences. Subscribers are informed through e-mail when new publications are issued that match their identified interests. Users can subscribe to this service by clicking the "Get NSF Updates by Email" link on the [NSF web site](#).

Grants.gov provides an additional electronic capability to search for Federal government-wide grant opportunities. NSF funding opportunities may be accessed via this new mechanism. Further information on Grants.gov may be obtained at <http://www.grants.gov>.

## ABOUT THE NATIONAL SCIENCE FOUNDATION

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The National Science Foundation (NSF) is an independent Federal agency created by the National Science Foundation Act of 1950, as amended (42 USC 1861-75). The Act states the purpose of the NSF is "to promote the progress of science; [and] to advance the national health, prosperity, and welfare by supporting research and education in all fields of science and engineering."

NSF funds research and education in most fields of science and engineering. It does this through grants and cooperative agreements to more than 2,000 colleges, universities, K-12 school systems, businesses, informal science organizations and other research organizations throughout the US. The Foundation accounts for about one-fourth of Federal support to academic institutions for basic research.

NSF receives approximately 40,000 proposals each year for research, education and training projects, of which approximately 11,000 are funded. In addition, the Foundation receives several thousand applications for graduate and postdoctoral fellowships. The agency operates no laboratories itself but does support National Research Centers, user facilities, certain oceanographic vessels and Antarctic research stations. The Foundation also supports cooperative research between universities and industry, US participation in international scientific and engineering efforts, and educational activities at every academic level.

*Facilitation Awards for Scientists and Engineers with Disabilities* provide funding for special assistance or equipment to enable persons with disabilities to work on NSF-supported projects. See Grant Proposal Guide Chapter II, Section D.2 for instructions regarding preparation of these types of proposals.

The National Science Foundation has Telephonic Device for the Deaf (TDD) and Federal Information Relay Service (FIRS) capabilities that enable individuals with hearing impairments to communicate with the Foundation about NSF programs, employment or general information. TDD may be accessed at (703) 292-5090 and (800) 281-8749, FIRS at (800) 877-8339.

The National Science Foundation Information Center may be reached at (703) 292-5111.

The National Science Foundation promotes and advances scientific progress in the United States by competitively awarding grants and cooperative agreements for research and education in the sciences, mathematics, and engineering.

To get the latest information about program deadlines, to download copies of NSF publications, and to access abstracts of awards, visit the NSF Website at <http://www.nsf.gov>

- **Location:** 4201 Wilson Blvd. Arlington, VA 22230
- **For General Information** (NSF Information Center): (703) 292-5111

- **TDD (for the hearing-impaired):** (703) 292-5090
- **To Order Publications or Forms:**
  - Send an e-mail to: [nsfpubs@nsf.gov](mailto:nsfpubs@nsf.gov)
  - or telephone: (703) 292-7827
- **To Locate NSF Employees:** (703) 292-5111

## PRIVACY ACT AND PUBLIC BURDEN STATEMENTS

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The information requested on proposal forms and project reports is solicited under the authority of the National Science Foundation Act of 1950, as amended. The information on proposal forms will be used in connection with the selection of qualified proposals; and project reports submitted by awardees will be used for program evaluation and reporting within the Executive Branch and to Congress. The information requested may be disclosed to qualified reviewers and staff assistants as part of the proposal review process; to proposer institutions/grantees to provide or obtain data regarding the proposal review process, award decisions, or the administration of awards; to government contractors, experts, volunteers and researchers and educators as necessary to complete assigned work; to other government agencies or other entities needing information regarding applicants or nominees as part of a joint application review process, or in order to coordinate programs or policy; and to another Federal agency, court, or party in a court or Federal administrative proceeding if the government is a party. Information about Principal Investigators may be added to the Reviewer file and used to select potential candidates to serve as peer reviewers or advisory committee members. See Systems of Records, NSF-50, "Principal Investigator/Proposal File and Associated Records," 69 Federal Register 26410 (May 12, 2004), and NSF-51, "Reviewer/Proposal File and Associated Records," 69 Federal Register 26410 (May 12, 2004). Submission of the information is voluntary. Failure to provide full and complete information, however, may reduce the possibility of receiving an award.

An agency may not conduct or sponsor, and a person is not required to respond to, an information collection unless it displays a valid Office of Management and Budget (OMB) control number. The OMB control number for this collection is 3145-0023. Public reporting burden for this collection of information is estimated to average 12 hours per response, including the time for reviewing instructions. Send comments regarding the burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to:

Suzanne H. Plimpton  
 Reports Clearance Officer  
 Division of Administrative Services  
 National Science Foundation  
 Arlington, VA 22230

## X. APPENDIX

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### NATIONAL SCIENCE FOUNDATION GRADUATE RESEARCH FELLOWSHIPS

#### Fields of Study

Note: Applicants are reviewed in panels based on their primary Field of Study. The "other" field of study category should only be selected by applicants if the proposed field of study is not covered by one of the following fields, and should not be used to designate a field of study that is more specific than the fields listed.

#### CHEMISTRY

Analytical  
 Bio-inorganic  
 Bio-organic  
 Biophysical  
 Environmental  
 Inorganic  
 Materials  
 Organic  
 Physical  
 Polymer  
 Theoretical  
 Chemistry, other (specify)

#### COMPUTER AND INFORMATION SCIENCE AND ENGINEERING (CISE)

Artificial Intelligence (including Robotics, Computer Vision, and Human Language Processing)  
 Computer Architecture and Grids  
 Computer Science - Languages and Systems  
 Computer Science - Theoretical Foundations  
 Computer Systems Design (including Signal Processing)  
 Databases, Information Retrieval, and Web Search  
 Graphics and Visualization  
 Human Computer Interaction

Information Security and Assurance  
Information Technology and Organizations  
Networks and Communications  
Operating Systems and Middleware  
Scientific Computing and Informatics  
Software Engineering  
CISE, other (specify)

## **ENGINEERING**

Aeronautical and Aerospace  
Agricultural  
Bioengineering  
Biomedical  
Chemical Engineering  
Civil Engineering  
Computer Engineering  
Electrical and Electronic  
Energy  
Engineering Mechanics  
Engineering Science  
Environmental  
Industrial Engineering  
Materials  
Mechanical  
Metallurgical  
Nuclear  
Ocean  
Petroleum  
Polymer  
Systems Engineering  
Engineering, other (specify)

## **GEOSCIENCES**

Aeronomy  
Atmospheric Chemistry  
Chemical Oceanography  
Climate Dynamics  
Geochemistry  
Geology  
Geophysics  
Hydrologic Sciences  
Large-scale Dynamics Meteorology  
Magnetospheric Physics  
Marine Geology and Geophysics  
Mesoscale Dynamic Meteorology  
Paleoclimate  
Paleontology  
Physical Meteorology  
Physical Oceanography  
Solar - Terrestrial  
Geosciences, other (specify)

## **LIFE SCIENCES**

Agriculture  
Agronomy  
Anatomy  
Animal Behavior  
Animal Science  
Biochemistry  
Biological Oceanography  
Biophysics  
Botany (including Plant Physiology)  
Cell Biology  
Computational Biology  
Developmental Biology  
Ecology  
Population and community ecology  
Ecosystem ecology  
Entomology  
Environmental Sciences  
Evolutionary Biology  
Fish and Wildlife  
Forestry  
Genetics  
Horticulture  
Immunology  
Marine Biology  
Microbiology  
Molecular Biology  
Neurosciences  
Nutrition  
Pharmacology  
Physiology  
Plant Pathology

Soil Science  
Structural Biology  
Virology  
Zoology  
Life Sciences, other (specify)

#### **MATHEMATICAL SCIENCES**

Algebra or Number Theory  
Analysis  
Applications of Mathematics (including Biometrics and Biostatistics)  
Geometry  
Logic or Foundations of Mathematics  
Operations Research  
Probability and Statistics  
Topology  
Mathematics, other (specify)

#### **PHYSICS AND ASTRONOMY**

Astronomy  
Astrophysics  
Atomic and Molecular  
Condensed Matter Physics  
Nuclear  
Optics  
Particle Physics  
Physics of Fluids  
Plasma  
Solid State  
Theoretical Physics  
Physics, other (specify)

#### **PSYCHOLOGY**

Cognitive  
Cognitive Neuroscience  
Computational Psychology  
Developmental  
Experimental or Comparative  
Industrial/Organizational  
Neuropsychology  
Perception and Psychophysics  
Personality and Individual Differences  
Psycholinguistics  
Physiological  
Quantitative  
Social  
Psychology, other (specify)

#### **SOCIAL SCIENCES**

Cultural Anthropology  
Linguistic Anthropology  
Medical Anthropology  
Physical Anthropology  
Archaeology  
Cliometric History  
Communications  
Decision Making  
Demography  
Econometrics  
Economics (except Business Administration)  
Geography  
History of Science  
International Relations  
Law and Social Science  
Linguistics  
Philosophy of Science  
Political Science  
Public Policy  
Risk Analysis  
Science Policy  
Sociology (except Social Work)  
Urban and Regional Planning  
Social Sciences, other (specify)

#### **STEM EDUCATION AND LEARNING RESEARCH**

Science Education  
Technology Education  
Engineering Education  
Mathematics Education  
STEM Education and Learning Research, other (specify)

- Warning: Individuals pursuing research in a policy science are eligible for funding only if they are pursuing research-based master's or doctoral degrees.
- Warning: Research with disease-related goals is not eligible for support by NSF. Applicants in this field will be judged

ineligible if their Proposed Plan of Research has disease-related goals and/or is insufficiently focused on basic research questions.

- Warning: Individuals enrolled in clinical and counseling psychology programs are not eligible for this competition.
- Warning: Only research-focused STEM (science, technology, engineering and mathematics) education programs are eligible for funding; applicants will be judged ineligible if they propose to pursue a degree in a practice-oriented, professional program, such as an MEd or ED.

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