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# Graduate Research Fellowship Program (GRFP)

## PROGRAM SOLICITATION
NSF 15-597

## REPLACES DOCUMENT(S):
NSF 14-0590

**National Science Foundation**

Directorate for Biological Sciences

Directorate for Computer & Information Science & Engineering

Directorate for Education & Human Resources
Division of Graduate Education

Directorate for Engineering

Directorate for Geosciences

Directorate for Mathematical & Physical Sciences

Directorate for Social, Behavioral & Economic Sciences

Office of Integrative Activities

Office of International Science and Engineering

**Application Deadline(s)** (received by 8 p.m. Eastern Standard Time):

October 26, 2015

Geosciences; Life Sciences

October 27, 2015

Computer and Information Science and Engineering; Engineering; Materials Research

October 29, 2015

Psychology; Social Sciences; STEM Education and Learning

October 30, 2015

Chemistry; Mathematical Sciences; Physics and Astronomy

## IMPORTANT INFORMATION AND REVISION NOTES

1. Application and reference writer deadlines have changed.
2. The number of statements required from all applicants is limited to two.

## SUMMARY OF PROGRAM REQUIREMENTS

### General Information

**Program Title:**

NSF Graduate Research Fellowship Program (GRFP)

**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 of the United States. The program recognizes and supports outstanding graduate students who are pursuing research-based master's and doctoral degrees in science, technology, engineering, and mathematics (STEM) and in STEM education. The GRFP provides three years of support for the graduate education of individuals who have demonstrated their potential for significant research achievements in STEM and STEM education. NSF especially encourages women, members of underrepresented minority groups, persons with disabilities, and veterans to apply. NSF also encourages undergraduate seniors to apply.

**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
- Gisele Muller-Parker, telephone: (866) 673-4737, email: info@nsfgrfp.org
- Joerg Schlatterer, telephone: (866) 673-4737, email: info@nsfgrfp.org
- Susan Brennan, telephone: (866) 673-4737, email: info@nsfgrfp.org
- Erick Jones, telephone: (866) 673-4737, email: info@nsfgrfp.org

**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
- 47.079 --- Office of International Science and Engineering
- 47.083 --- Office of Integrative Activities (OIA)

## Award Information

**Anticipated Type of Award:** Fellowship

**Estimated Number of Awards:** 2,000

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

**Anticipated Funding Amount:** $337,500,000

For new and continuing awards, pending the availability of funds.

Each Fellowship consists of three years of support during a five-year fellowship period. NSF provides a stipend of $34,000 to the Fellow and a cost-of-education allowance of $12,000 to the graduate degree-granting institution for each Fellow who uses the fellowship support in a fellowship year.

## Eligibility Information

**Organization Limit:**

Fellowship applications must be submitted by the prospective Fellow. Applicants must register with FastLane (https://www.fastlane.nsf.gov/fastlane.jsp) prior to submitting an application. Confirmation of acceptance in a graduate degree program in science or engineering is required at the time of Fellowship acceptance, no later than May 1, 2016. Prospective Fellows must enroll in a university, college, or non-profit academic institution of higher education accredited in, and having a campus located in, the United States, its territories, or possessions, or the Commonwealth of Puerto Rico that offers advanced degrees in STEM or STEM education no later than fall 2016. All Fellows from the date of Acceptance through Completion or Termination of the Fellowship must be affiliated with a graduate degree-granting institution accredited in, and having a campus located in, the United States, its territories, or possessions, or the Commonwealth of Puerto Rico. NSF especially encourages women, members of underrepresented minority groups, persons with disabilities, and veterans to apply. NSF also encourages undergraduate seniors to apply.

**Applicant Eligibility:**

See details provided below in Additional Eligibility Info.

**Applicants must self-certify that they are eligible to receive the Fellowship.**

Categories of applicants that are ineligible:

- Those who do not hold United States citizenship, national, or permanent resident status by the application deadline.
- Those who were previously awarded a Fellowship from the NSF Graduate Research Fellowship Program and accepted it.
- Those who did not accept the NSF Graduate Research Fellowship and failed to notify NSF by the published deadline for accepting the Fellowship.
- Those who have completed the requirements for any graduate or professional degree by August 1, 2015, except 1) applicants who have completed a joint baccalaureate-master's (BS/MS) program and have not completed any further graduate study outside the joint program unless the graduate coursework was required to establish or maintain credentials in a profession such as teaching; or 2) applicants that have had an interruption in graduate study of at least two consecutive years prior to November 1, 2015 and have completed no additional graduate study as of August 1, 2015.
- Current NSF employees.

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

An eligible applicant may submit only one application per annual competition.

## Application Preparation and Submission Instructions

**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:** Inclusion of voluntary committed cost sharing is prohibited.
- **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)** (received by 8 p.m. Eastern Standard Time):

  October 26, 2015

  Geosciences; Life Sciences

  October 27, 2015

  Computer and Information Science and Engineering; Engineering; Materials Research

  October 29, 2015

  Psychology; Social Sciences; STEM Education and Learning

  October 30, 2015

  Chemistry; Mathematical Sciences; Physics and Astronomy

## Application Review Information Criteria

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

## Award Administration Information

**Award Conditions:** Fellowships are made subject to the provisions (and any subsequent amendments) contained in *NSF 13-085: NSF Graduate Research Fellowship Program Administrative Guide for Fellows and Coordinating Officials*.

**Reporting Requirements:**

See reporting requirements in full text of solicitation and *NSF 13-085: NSF Graduate Research Fellowship Program Administrative Guide for Fellows and Coordinating Officials*. Fellows are required to submit annual activity reports and to declare fellowship status by May 1 each year. Additional reporting requirements are presented in Section VII.C of this solicitation.

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## I. INTRODUCTION

The Graduate Research Fellowship Program (GRFP) is a National Science Foundation-wide program that provides Fellowships to individuals selected early in their graduate careers based on their demonstrated potential for significant research achievements in science, technology, engineering or mathematics (STEM) or in STEM education. Three years of support is provided by the program for graduate study that leads to a research-based master's or doctoral degree in STEM or STEM education (see Fields of Study in Appendix for examples).

The program goals are: 1) to select, recognize, and financially support, early in their careers, individuals with the demonstrated potential to be high achieving scientists and engineers, and 2) to broaden participation in science and engineering of underrepresented groups, including women, minorities, persons with disabilities, and veterans. NSF especially encourages women, members of underrepresented minority groups, persons with disabilities, and veterans to apply. NSF also encourages undergraduate seniors to apply. GRFP is a critical program in NSF's overall strategy to develop 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 numerous individuals who have made transformative breakthrough discoveries in science and engineering, become leaders in their chosen careers, and been honored as Nobel laureates.

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

## II. PROGRAM DESCRIPTION

The Graduate Research Fellowship Program (GRFP) awards Fellowships for graduate study leading to research-based master's and doctoral degrees in STEM or in STEM education. The Fields of Study listed in the Appendix are used to place applications in the most appropriate review panel and to track the disciplinary progress of Fellows and their career outcomes. Applicants who meet the degree eligibility criteria may select "other" if their Field of Study is not represented in the list.

All applicants are expected to have adequate preparation to begin graduate-level study and research by summer or fall of 2016. This is nearly always demonstrated by a bachelor's degree in a science or engineering field earned prior to fall 2016. Applicants should plan to enroll in a university, college, or non-profit academic institution of higher education accredited in, and having a campus located in, the United States, its territories, or possessions, or the Commonwealth of Puerto Rico that offers graduate degrees in eligible STEM and STEM education fields by fall 2016. Applicants offered the Fellowship award must confirm acceptance in a program which grants a graduate degree in an eligible science or engineering field at the time of Fellowship acceptance, by May 1, 2016. Applicants accepting an NSF GRFP Fellowship award must certify that they meet all of the eligibility requirements as described in this Program Solicitation. From the date of Acceptance through Completion or Termination of the Fellowship, applicants accepting the award (Fellows) must be affiliated with a graduate degree-granting institution accredited in, and having a campus located in, the United States, its territories, or possessions, or the Commonwealth of Puerto Rico.

GRFP supports individuals proposing a comprehensive holistic plan for graduate education that takes into account individual interests and competencies. A holistic plan describes the experiences, attributes, and academic achievements and, when considered in combination, shows how the applicant has **demonstrated potential** for significant research achievements in STEM or in STEM education. 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 this potential for significant achievements. Prospective applicants are advised that submission of an application implies a commitment to the pursuit of graduate study in a research-based program in STEM or STEM education. Acceptance of a Fellowship award is an explicit agreement that the Fellow will be duly enrolled in a graduate degree program consistent with the field of study indicated in their application by the beginning of the following academic year.

## III. AWARD INFORMATION

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

Fellowship funding will be for a maximum of three years of financial support (in 12-month allocations, starting in summer or fall) usable over a five-year fellowship period. The anticipated announcement date for the Fellowship awards is early April 2016.

For each Fellow, the institution receives up to a $46,000 award per Fellow who uses the fellowship support in a fellowship year. The Graduate Research Fellowship stipend is currently $34,000 for a 12-month tenure period, prorated in whole month increments of $2,833. The cost-of-education allowance to the institution is currently $12,000 per year of fellowship support. GRFP fellowship awards are eligible for supplemental funding for Facilitation Awards for Scientists and Engineers with Disabilities as described in the NSF Proposal and Award Policies and Procedures Guide (PAPPG; NSF 15-1), Chapter II.D.4., and for the Career-Life Balance Initiative (NSF 13-099).

During receipt of the fellowship support, 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 *NSF 13-085: NSF Graduate Research Fellowship Program Administrative Guide for Fellows and Coordinating Officials* for restrictions on the use of the cost-of-education allowance.

Over the course of the five-year GRFP fellowship period, Fellows are encouraged to take advantage of additional professional development opportunities offered through the program. GRFP offers two professional development opportunities that Fellows may apply to: Graduate Research Opportunities Worldwide, or GROW (http://www.nsf.gov/grow), and the Graduate Research Internship

Program, or GRIP (http://www.nsf.gov/grip). The GROW initiative enables Fellows 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 upon joining the United States science and engineering workforce to collaborate successfully in international teams. GROW provides funding for international research stays of 2-12 months. Current GROW partners include Australia, Austria, Brazil, Chile, Denmark, Finland, France, India, Ireland, Japan, Korea, Mexico, the Netherlands, Norway, Singapore, Sweden and Switzerland. GRIP gives Fellows the opportunity to participate for 10 weeks to up to 12 months in mission-related, collaborative research under the guidance of host research mentors at federal facilities and national laboratories. In addition to developing research expertise, Fellows can enhance their professional skills, develop new networks, and prepare for a wide array of career options in areas of national needs. Current federal partners include the Office of Naval Research, the Smithsonian Institution, the Department of Homeland Security, the Federal Bureau of Investigation, the Environmental Protection Agency, the National Oceanic and Atmospheric Administration, the U.S. Census Bureau, and the U.S. Geological Survey. GROW and GRIP are critical programs in GRFP that contribute to NSF's overall strategy to develop the globally-engaged workforce necessary to ensure the Nation's leadership in advancing science and engineering research and innovation.

Fellows are provided enhanced access to cyberinfrastructure resources, including supercomputing time, through the Extreme Science and Engineering Discovery Environment (XSEDE). Please refer to http://www.xsede.org/ for more information on cyberinfrastructure resources.

**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 XSEDE. Please refer to http://www.xsede.org/ for more information on cyberinfrastructure resources.

## IV. ELIGIBILITY INFORMATION

**Organization Limit:**

Fellowship applications must be submitted by the prospective Fellow. Applicants must register with FastLane (https://www.fastlane.nsf.gov/fastlane.jsp) prior to submitting an application. Confirmation of acceptance in a graduate degree program in science or engineering is required at the time of Fellowship acceptance, no later than May 1, 2016. Prospective Fellows must enroll in a university, college, or non-profit academic institution of higher education accredited in, and having a campus located in, the United States, its territories, or possessions, or the Commonwealth of Puerto Rico that offers advanced degrees in STEM or STEM education no later than fall 2016. All Fellows from the date of Acceptance through Completion or Termination of the Fellowship must be affiliated with a graduate degree-granting institution accredited in, and having a campus located in, the United States, its territories, or possessions, or the Commonwealth of Puerto Rico. NSF especially encourages women, members of underrepresented minority groups, persons with disabilities, and veterans to apply. NSF also encourages undergraduate seniors to apply.

**Applicant Eligibility:**

See details provided below in Additional Eligibility Info.

**Applicants must self-certify that they are eligible to receive the Fellowship.**

Categories of applicants that are ineligible:

- Those who do not hold United States citizenship, national, or permanent resident status by the application deadline.
- Those who were previously awarded a Fellowship from the NSF Graduate Research Fellowship Program and accepted it.
- Those who did not accept the NSF Graduate Research Fellowship and failed to notify NSF by the published deadline for accepting the Fellowship.
- Those who have completed the requirements for any graduate or professional degree by August 1, 2015, except 1) applicants who have completed a joint baccalaureate-master's (BS/MS) program and have not completed any further graduate study outside the joint program unless the graduate coursework was required to establish or maintain credentials in a profession such as teaching; or 2) applicants that have had an interruption in graduate study of at least two consecutive years prior to November 1, 2015 and have completed no additional graduate study as of August 1, 2015.

- Current NSF employees.

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

An eligible applicant may submit only one application per annual competition.

**Additional Eligibility Info:**

**Additional Eligibility Info:**

Described in detail below are the three eligibility requirements for the Graduate Research Fellowship Program: (1) U. S. citizenship, (2) degree requirements, and (3) field of study. Applicants are advised to read the entire program solicitation carefully to ensure that the requirements are understood.

**1. Citizenship**

Applicants must be United States citizens, nationals, or permanent residents 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, United States Virgin Islands, or the Northern Mariana Islands. It does not refer to a citizen of another country who has applied for United States citizenship and who has not received U.S. citizenship by the application deadline.

**2. Degree Requirements**

**Applicants are eligible to apply who are: 1) not enrolled in graduate school and will have adequate preparation to attend graduate school in fall 2016; or 2) have not completed more than 12 months of a graduate program in a supported field of study (see Appendix).**

Below are additional guidelines to determine eligibility:

a) Not Currently Enrolled in Graduate School:

- No prior graduate school enrollment
- Undergraduate students typically apply prior to starting a graduate program which is usually in the fall of their senior year or the fall of the academic year that they anticipate receiving a bachelor's degree.
- At the time of application, undergraduate student applicants are expected to be on track to receive a bachelor's degree in a science or engineering field prior to fall 2016 to demonstrate adequate preparation to begin graduate study and research by fall 2016.
- Bachelor's degree holders without any graduate study can apply any time after earning their degree.

With prior graduate school enrollment

- As a general rule, applicants must not have completed more than 12 months of full-time graduate study or its equivalent as defined by the universities attended as of August 1, 2015.
- All graduate, post-baccalaureate and professional study is counted towards the allowed 12 months of graduate study, including all full-time and part-time master's and doctoral degree programs, and non-degree graduate-level and professional coursework. The one exception is for graduate coursework required to establish or maintain credentials in a profession such as teaching; such coursework is not included in the 12-month limit.
- Applicants who have completed more than twelve months of graduate study or have earned a previous graduate or professional degree are eligible only if they have had an interruption in graduate study of at least two consecutive years prior to November 1, 2015. To be eligible, applicants must have completed no additional graduate study by August 1, 2015. Applicants must address the reasons for the interruption in graduate study in the Personal, Relevant Background and Future Goals Statement.
- Applicants in joint BS/MS programs are eligible to apply prior to completion of any further graduate study. Joint baccalaureate-master's programs are those where an institution offers students admission to both an undergraduate and graduate degree program concurrently. Pursuing separate undergraduate and master's degrees at the same institution does not constitute a joint baccalaureate-master's program. Completion of any graduate study outside of the joint program disqualifies an applicant unless the graduate coursework is required to establish or maintain credentials in a profession such as teaching; such coursework is not included in the 12-month limit.
- In four-year joint programs, applicants may apply in the fourth year or after completion of the program.
- In five-year joint programs, applicants may apply in the fourth or fifth year of the program or after completion of the program.

b) Currently Enrolled in Graduate School:

Part time:

- Graduate students who are enrolled in part-time graduate study (or a combination of part-time and full-time graduate study) can apply before completing 24 semester hours or 36 quarter hours or their equivalent.

Full time:

- Applicants must not have completed more than 12 months of full-time graduate, post-baccalaureate graduate, and professional study by August 1, 2015. Pre-graduate participation in summer activities (e.g., bridge programs, field studies, lab rotations) offered by a graduate program prior to the start of the fall graduate program are not included in this total.

- There is no credit hour limit for students who have completed only full-time graduate study; eligibility for full-time students is based on the length of time enrolled in the graduate program.
- All graduate, post-baccalaureate and professional study is counted towards the allowed 12 months of graduate study, including all full-time and part-time master's and doctoral degree programs, and non-degree graduate-level and professional coursework. The one exception is for graduate coursework required to establish or maintain credentials in a profession such as teaching; such coursework is not included in the 12-month limit.

**3. Field of Study**

Applicants must self-certify that they plan to or are pursuing a graduate degree in a supported field of study and that they meet all eligibility criteria for GRFP. Fellowships are awarded for graduate study leading to research-based master's and doctoral degrees in science, technology, engineering or mathematics (STEM) or in STEM education. An individual's proposed research and graduate study must both be in STEM or in STEM education. Fellows must enroll in a graduate degree program consistent with the relevant field of study proposed in their application and to undertake a course of study leading to a research-based MS or PhD. The guidelines below should be used to assess eligibility according to the field of study. Applicants are encouraged to read carefully the exceptions as applications ruled ineligible will be returned without review.

The following programs, areas of graduate study, and research are ineligible for Fellowship support:

- Individuals are not eligible to apply if they will be enrolled in a practice-oriented professional degree program such as medical, dental, law, and public health at the start of the fellowship. Examples of typically ineligible degree programs include MBA, MPH, MSW, JD, MD, and DDS. Joint or combined professional degree-science programs (e.g., MD/PhD or JD/PhD) and dual professional degree-science programs are also not eligible. Applicants who will be enrolled in a graduate degree program while on a leave of absence from a professional degree program or professional degree-graduate degree joint program are not eligible for a Graduate Research Fellowship.
- Individuals are not eligible to apply if they will be enrolled in an area of graduate study focused on clinical practice, for example, counseling, social work, as well as patient-oriented research, epidemiological and behavioral studies, outcomes research and health services research. For example, clinical study that is ineligible includes 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. Graduate study focused on community and other population-based medical intervention trials are also ineligible.

- Individuals are not eligible to apply for support of biomedical research with disease-related goals, including etiology, diagnosis or treatment of physical or mental disease, abnormality, or malfunction in human beings and animals. Animal models of such conditions or the development or testing of drugs or other procedures for their treatment also are not eligible for support. There are areas of bioengineering research in biology and medicine that are eligible. These are research in bioengineering to aid persons with disabilities and research on diagnosis or treatment of human disease provided it applies engineering principles to problems in biology and medicine while primarily advancing engineering knowledge.

**The Graduate Research Fellowship Operations Center is responsible for responding to questions about the program. For questions concerning these guidelines, contact the Graduate Research Fellowship Operations Center, (866) 673-4737, or info@nsfgrfp.org.**

# V. APPLICATION PREPARATION AND SUBMISSION INSTRUCTIONS

## A. Application Preparation Instructions

Fellowship applications must be submitted electronically using the NSF FastLane Graduate Research Fellowship Program Application Module at https://www.fastlane.nsf.gov/grfp/Login.do **according to the deadline corresponding with the Primary Field of Study selected in the application.** Applications must be received by 8:00 p.m. Eastern Time. **Applications received after the Field of Study deadline date and time will be returned without review.** Applicants must first register as a FastLane user at that web site. Instructions for completing and submitting an application can be found through the "Applicant Help" link in the Fastlane GRFP Application.

**Three reference letters must be submitted electronically by the reference writers through the FastLane GRFP Application Module and must be received by the reference letter deadline of November 5, 2015, by 8:00 p.m. Eastern Time. If all three reference letters are not received by the reference letter deadline and time, the application will be returned without review.**

Applicants must submit the following information through the **FastLane GRFP Application Module**: Personal Information; Education, Work and Other Experience; electronic Transcripts; Proposed Field(s) of Study; Proposed Graduate Study and Graduate School Information; the names and email addresses of reference letter writers; Personal, Relevant Background and Future Goals Statement; and Graduate Research Plan Statement.

The FastLane GRFP Application Module offers the option to submit the applicant's Open Researcher and Contributor ID. ORCID® http://orcid.org is an open, non-profit, community-driven effort to create and maintain a registry of unique researcher identifiers and a transparent method of linking research activities and outputs to these identifiers. An ORCID identifier provides a persistent digital identifier that distinguishes the individual from every other researcher and, through integration in key research workflows such as manuscript and grant submission, supports automated linkages between the individual and their professional activities ensuring that the individual's work is recognized. While NSF encourages applicants to include an ORCID ID in their applications, submission of the ORCID Identifier is optional. ORCID Identifiers will not be shared with GRFP reviewers, and their use is not part of the review process.

Applicants should not send extraneous information or materials such as CDs, manuscripts, resumes, medical reports, or news clippings. These items will not be reviewed with an application. No additional information may be provided by links to web pages within the application, except as part of citations in the References Cited section. Images may be included in the page limits. Review of the application and reference letters is based solely on materials received by the application and reference letter deadlines.

Applicants must follow the instructions in the FastLane GRFP Application Module, including the instructions found at the "Applicant Help" link in the Module, for completing each section of the application. The statements must be written using the following guidelines:

- standard 8.5" x 11" page size
- 12-point, Times New Roman font or Computer Modem (LaTeX) font
- 10-point font may be used for references, footnotes, figure captions and text within figures
- 1" margins on all sides
- single spaced (approximately 5 lines per inch) or greater line spacing. Applicants should not use line spacing options such as "exactly 12 point," that are less than single spaced.

Compliance with these guidelines will be based on the document as it appears in FastLane after it is uploaded. Applicants are strongly encouraged to upload their documents early to ensure compliance and avoid potential formatting issues caused by the PDF conversion process.

The maximum length of the Personal, Relevant Background and Future Goals Statement is three pages. The maximum length of the Graduate Research Plan Statement is two pages. These page limits include all references, citations, charts, figures, images, and lists of publications and presentations. Applicants must certify that the two Statements (Personal, Relevant Background and Future Goals Statement, and Graduate Research Plan Statement) in their application are their own original work. As explained in the NSF Proposal and Award Policies and Procedures Guide [PAPPG; NSF 15-1], Chapter I.D.3), NSF expects strict adherence to the rules of proper scholarship and attribution. The responsibility for proper scholarship and attribution rests with the authors of a proposal; all parts of the proposal should be prepared with equal care for this concern. Authors other than the PI (or any co-PI) should be named and acknowledged. Serious failure to adhere to such standards can result in findings of research misconduct. NSF policies and rules on research misconduct are discussed in the AAG Chapter VII.C, as well as 45 CFR Part 689.

Academic transcripts are required for all institutions listed by the applicant in the FastLane GRFP Application Module, other than those with a Fall 2015 start. If the applicant started at the current institution in Fall 2015 and the institution does not provide unofficial or official transcripts prior to completion of the first term, the applicant may submit a class schedule/enrollment verification form in place of a transcript. Required transcripts include academic transcripts from the baccalaureate institution and transcripts for all graduate work with a start date prior to the Fall 2015 term. Transcripts must be submitted electronically through the FastLane GRFP Application Module by the Field of Study application deadline. Applicants are encouraged to redact personally identifiable information (date of birth, individual Social Security Numbers, personal financial information, home addresses, home telephone numbers and personal email addresses) from the transcripts before uploading. Transcripts must be uploaded in a format that is supported by FastLane [link to supported formats]. The FastLane GRFP module does not accept encrypted or password-protected transcripts.

Applicants who earned Master's degrees in joint Baccalaureate-Master's degree programs should submit transcripts that clearly

document the joint program. If the transcript does not document the joint program, applicants must upload a letter from the registrar of the institution certifying enrollment in a joint program, appended to the transcript for that institution. Failure to provide clear documentation of a joint program may result in an application being returned without review.

**Failure to comply fully with the above requirements will result in the application being returned without review.**

**Additionally, applications that are incomplete (missing required transcripts and/or reference letters, or that do not have "received" status in FastLane by 8:00 p.m. Eastern Time on the Field of Study application deadline) will be returned without review.** Applicants are advised to submit applications early to avoid unanticipated delays on the deadline dates.

**Three Reference Letters (must be received by November 5 by 8:00 p.m. Eastern Time)**

Applications must include three reference letters from non-family members, received by November 5, 2015 by 8:00 p.m. Eastern Time, to be eligible for review. No exceptions to the deadline posted in the FastLane GRFP application module will be granted.

Applications **must have three reference letters by the reference letter deadline** in order to be complete and eligible for review. The FastLane GRFP application module allows applicants to request up to five reference letters.

Applicants must enter an appropriate email address for each reference writer into the FastLane GRFP Application Module. An exact email 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 reference writer deadline, and it is recommended they provide copies of their application materials to the writers.

Applicant-nominated reference writers must submit their letters through the FastLane GRFP Application Module. Reference letter requirements include:

- Institutional (or professional) letterhead, if possible
- Two (2) page limit
- 12-point Times New Roman in the body of the letter
- Name and title of reference writer
- Department and institution or organization

The reference letter should address the NSF Merit Review Criteria of Intellectual Merit and Broader Impacts (described in detail below). It should include 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 aid review panels in evaluating the application according to the NSF Merit Review Criteria.

**Application Completion Status**

The FastLane GRFP Application Module displays the accurate and up-to-date completion status of the Fellowship application. The status function indicates whether the application and reference letters have been received by NSF. Applicants are strongly encouraged to make use of this feature to ensure all application materials, including three reference letters, have been received before the deadlines. Applicants must use the FastLane user ID and password to access this information. For FastLane user support, call the FastLane Help Desk at 1-800-673-61881-800-673-6188 FREE or e-mail 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" (Committee on Facilitating Interdisciplinary Research, Committee on Science, Engineering, and Public Policy (2004). *Facilitating interdisciplinary research*. National Academies. Washington: National Academy Press, p. 2). Applicants must indicate the relative effort for each Field of Study represented in their application. **Applications must be received by the deadline for the primary Field of Study designated on the application.**

## B. Budgetary Information

**Cost Sharing:** Inclusion of voluntary committed cost sharing is prohibited.

**Indirect Cost (F&A) Limitations:**

No indirect costs are allowed.

**Other Budgetary Limitations:**

NSF awards $46,000 each year to the GRFP institution to cover the Fellow stipend and cost-of-education allowance for each NSF Graduate Research Fellow "on tenure" at the institution.

The NSF Graduate Research Fellowship Program Fellowship stipend is $34,000 for a 12-month tenure period, prorated in monthly increments of $2,833. The institutional cost-of-education allowance is $12,000 per tenure year per Fellow.

## C. Due Dates

- **Application Deadline(s)** (received by 8 p.m. Eastern Standard Time):

  October 26, 2015

  Geosciences; Life Sciences

  October 27, 2015

  Computer and Information Science and Engineering; Engineering; Materials Research

  October 29, 2015

Psychology; Social Sciences; STEM Education and Learning

October 30, 2015

Chemistry; Mathematical Sciences; Physics and Astronomy

## D. Fastlane Requirements

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. 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

## A. NSF Application Review Process

Applications will be reviewed online by virtual panels of disciplinary and interdisciplinary scientists and engineers and other professional graduate education experts. These reviewers are selected by Program Officers charged with oversight of the review process. Care is taken to ensure that reviewers have no conflicts of interest with the applicants. Panels will review applications from **broad areas** of related disciplines. Applicants are reviewed in panels based on their selection of a primary Field of Study (see Fields of Study in Appendix). **Selection of a primary Field of Study determines the application deadline and the panel that will review the application.** Thus, applicants are advised to select the Field of Study in the FastLane GRFP Application module (see Fields of Study in Appendix) that is most closely aligned with the proposed graduate program of study and research plan. Applicants who select “other” must choose a primary Field of Study on the list for placement in a review panel.

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 Award Policies and Procedures Guide). **Therefore, applicants must include separate statements on Intellectual Merit and Broader Impacts 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**. **Applicants should include headings for Intellectual Merit and Broader Impacts in their statements.**

The following description of the Merit Review Criteria is provided in Chapter III of the NSF Proposal and Award Policies and Procedures Guide (PAPPG) (NSF 15-1):

> All NSF proposals are evaluated through use of the two National Science Board approved merit review criteria. In some instances, however, NSF will employ additional criteria as required to highlight the specific objectives of certain programs and activities.
>
> The two merit review criteria are listed below. Both criteria are to be given full consideration during the review and decision-making processes; each criterion is necessary but neither, by itself, is sufficient. Therefore, proposers must fully address both criteria. (GPG Chapter II.C.2.d.i. contains additional information for use by proposers in development of the Project Description section of the proposal.) Reviewers are strongly encouraged to review the criteria, including GPG Chapter II.C.2.d.i., prior to the review of a proposal.
>
> When evaluating NSF proposals, reviewers will be asked to consider what the proposers want to do, why they want to do it, how they plan to do it, how they will know if they succeed, and what benefits could accrue if the project is successful. These issues apply both to the technical aspects of the proposal and the way in which the project may make broader contributions. To that end, reviewers will be asked to evaluate all proposals against two criteria:
>
> - Intellectual Merit: The Intellectual Merit criterion encompasses the potential to advance knowledge; and
> - Broader Impacts: The Broader Impacts criterion encompasses the potential to benefit society and contribute to the achievement of specific, desired societal outcomes.
>
> The following elements should be considered in the review for both criteria:
>
> 1. What is the potential for the proposed activity to:
>
> a. Advance knowledge and understanding within its own field or across different fields (Intellectual Merit); and
>
> b. Benefit society or advance desired societal outcomes (Broader Impacts)?
>
> 2. To what extent do the proposed activities suggest and explore creative, original, or potentially transformative concepts?
>
> 3. Is the plan for carrying out the proposed activities well-reasoned, well-organized, and based on a sound rationale? Does the plan incorporate a mechanism to assess success?
>
> 4. How well qualified is the individual, team, or organization to conduct the proposed activities?
>
> 5. Are there adequate resources available to the PI (either at the home organization or through collaborations) to carry out the proposed activities?

Additionally, Chapter II of the NSF Proposal and Award Policies and Procedures Guide states:

> Broader impacts may be accomplished through the research itself, through the activities that are directly related to specific research projects, or through activities that are supported by, but are complementary to, the project. NSF

values the advancement of scientific knowledge and activities that contribute to achievement of societally relevant outcomes. Such outcomes include, but are not limited to: full participation of women, persons with disabilities, and underrepresented minorities in science, technology, engineering, and mathematics (STEM); improved STEM education and educator development at any level; increased public scientific literacy and public engagement with science and technology; improved well-being of individuals in society; development of a diverse, globally competitive STEM workforce; increased partnerships between academia, industry, and others; improved national security; increased economic competitiveness of the US; and enhanced infrastructure for research and education.

Merit Review Criteria and GRFP

For example, reviewers evaluating applications submitted to the Graduate Research Fellowship Program may consider the following with respect to the **Intellectual Merit Criterion**: the potential of the applicant to advance knowledge based on a holistic analysis of the complete application, including the Personal, Relevant Background, and Future Goals Statement, Graduate Research Plan Statement, strength of the academic record, description of previous research experience or publication/presentations, and references. Holistic review is a flexible, individualized way of assessing an applicant's interests and competencies by which balanced consideration is given to experiences, attributes, and academic achievements and, when considered in combination, how the applicant has **demonstrated potential** for significant research achievements in STEM and STEM education. Reviewers may consider the following with respect to the **Broader Impacts Criterion**: the potential of the applicant to benefit society and contribute to the achievement of specific, desired societal outcomes based on a holistic analysis of the complete application, including by personal experiences, professional experiences, educational experiences and future plans.

### B. Application Review and Selection Process

Applications submitted in response to this program solicitation will be reviewed online 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. Reviewers 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 research achievements in STEM or in STEM education. 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 verbatim reviewer comments, excluding the names of the reviewers, for a limited period of time through the NSF GRFP FastLane website.

## VII. AWARD ADMINISTRATION INFORMATION

### A. Notification of the Award

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 early April 2015.

### B. Award Conditions

An NSF Graduate Research Fellowship award consists of the award 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 13-085: Administrative 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 13-085: Administrative Guide for Fellows and GRFP Coordinating Officials*.

NSF Graduate Research Fellowship Program applicants will be notified in early April 2016 of their selection. The applicant must accept or decline the Fellowship by May 1, 2016 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 Fellowship Terms and 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 XSEDE. Details on resources available are described at: http://www.xsede.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 (FASED) provide funding for special assistance or equipment to enable persons with disabilities (students and faculty) to work on NSF-supported projects. Fellows with disabilities may apply for assistance after consulting the instructions in the document *NSF 13-085: Administrative Guide for Fellows and GRFP Coordinating Officials*.

SUPPORT OF PROFESSIONAL DEVELOPMENT EXPERIENCES

Over the course of the five-year GRFP fellowship period, Fellows are encouraged to take advantage of additional opportunities offered through the GRFP such as the Graduate Research Opportunities Worldwide (GROW: http://www.nsf.gov/grow) and the Graduate Research Internship Program (GRIP: http;//www.nsf.gov/grip). GROW offers Fellows the opportunity to enhance their professional development through 3-12 month international research collaborations. GRIP gives Fellows the opportunity to participate for 10 weeks - 12 months in research internships at federal facilities and national laboratories.

**Terms and Conditions**

Awardees must formally accept and agree to the terms and conditions of the Fellowship award. Acceptance of the Fellowship constitutes a commitment to pursue a graduate degree in an eligible science or engineering field. Acceptance of a Fellowship award is an explicit acceptance of this commitment and assurance that the Fellow will be duly enrolled in a graduate degree program consistent with the field of study indicated in their application by the beginning of the following academic year. Major changes in scope later in the graduate career require NSF approval. *NSF 13-085: Administrative 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 (U.S. citizenship, degree requirements and field of study) and Certifications in the application. Each institution, in accepting the funds, also certifies that the Fellows are eligible to receive the Fellowship under these terms and conditions. Fellows are expected to make satisfactory academic progress towards completion of their graduate degrees, as defined and certified by the Fellow's GRFP institution. In cases where Fellows have misrepresented their eligibility, or have failed to comply with the Fellowship Terms and Conditions, the Fellowship will be revoked, and the case may be referred to the Office of the Inspector General for investigation. This action may result in requiring the Fellow to repay Fellowship funds to the National Science Foundation.

**An individual may not accept the Graduate Research Fellowship if the individual accepts or is supported by another federal graduate fellowship.**

The GRFP supports the NSF Career-Life Balance Initiative (NSF 13-099) by offering limited paid and unpaid leave options for Fellows facing dependent-care issues (childbirth/adoption and elder care). NSF enables career-life balance through a variety of mechanisms. For more information, please see http://www.nsf.gov/career-life-balance/.

Responsible Conduct of Research

It is the responsibility of the Fellow, in conjunction with the GRFP institution, to ensure that all academic and research activities carried out in or outside the US comply with the laws or regulations of the US and/or of the foreign country in which the academic and/or research activities are conducted. These include appropriate human subject, animal welfare, copyright and intellectual property protection, and other regulations or laws, as appropriate. All academic and research activities should be coordinated with the appropriate US and foreign government authorities, and necessary licenses, permits, or approvals must be obtained prior to undertaking the proposed activities.

In response to the America Competes Act, all Fellows supported by NSF to conduct research are required to receive appropriate training and oversight 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) or (2) must affirm that the IRB or an appropriate knowledgeable authority previously designated by the organization (not the Fellow) has declared the research exempt from IRB review, in accordance with the applicable subsection, as established in section 101(b) of the Common Rule. Fellows are required to comply with this policy and adhere to the organization's protocol for managing research involving human subjects.

Research 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). 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 US 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

Acknowledgment of Support and Disclaimer

All publications, presentations, and creative works based on activities conducted during the Fellowship must acknowledge NSF GRFP Support and provide a disclaimer by including the following statement in the Acknowledgements or other appropriate section:

"This material is based upon work supported by the National Science Foundation Graduate Research Fellowship Program under Grant No. (NSF grant number). Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation."

Annual Activities Report and Annual Fellowship Status Declaration

Fellows are required to submit an Annual Activities Report and to complete Fellowship Status Declaration by May 1 each year, using NSF's FastLane GRFP 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. These reports are reviewed and satisfactory progress verified by the faculty advisor or designated graduate program administrator prior to submission to NSF.

Fellows must declare their intent to utilize the Fellowship for the following year using the NSF GRFP FastLane Fellowship management

and reporting system. **Failure to declare Fellowship status by the established deadline violates the terms and conditions for NSF Fellowship awards, and results in termination of the Fellowship.**

Program Evaluation

The Division of Graduate Education (DGE) conducts evaluations to provide evidence on the impact of the GRFP on individuals' educational decisions, career preparations, aspirations and progress, as well as professional productivity; and provide an understanding of the program policies in achieving the program goals. Additionally, it is highly desirable to have a structured means of tracking Fellows beyond graduation to gauge the extent to which they choose 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 and Honorable Mention recipients may be contacted 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. The 2014 GRFP evaluation is posted on the "Evaluation Reports" Web page for NSF's Education and Human Resources Directorate: http://www.nsf.gov/ehr/Evaluation_Resources.jsp.

GRFP institutions are required to submit the GRFP Completion Report annually. The Completion Report allows GRFP institutions to certify the current status of all GRFP Fellows at the institution. The current status will identify a Fellow as: In Progress, Graduated, Transferred, or Withdrawn. For Fellows who have graduated, the graduation date is a required reporting element.

## VIII. AGENCY CONTACTS

*Please note that the program contact information is current at the time of publishing. See program website (http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=6201) 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
- Gisele Muller-Parker, telephone: (866) 673-4737, email: info@nsfgrfp.org
- Joerg Schlatterer, telephone: (866) 673-4737, email: info@nsfgrfp.org
- Susan Brennan, telephone: (866) 673-4737, email: info@nsfgrfp.org
- Erick Jones, telephone: (866) 673-4737, email: info@nsfgrfp.org

For questions related to the use of FastLane, contact:

- FastLane Help Desk, telephone: 1-800-673-6188; e-mail: 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

## IX. OTHER INFORMATION

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, "NSF Update" is an information-delivery system 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 Grants Conferences. Subscribers are informed through e-mail or the user's Web browser each time new publications are issued that match their identified interests. "NSF Update" also is available on NSF's website at https://public.govdelivery.com/accounts/USNSF/subscriber/new?topic_id=USNSF_179.

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

Many NSF programs offer announcements or solicitations concerning specific proposal requirements. To obtain additional information about these requirements, contact the appropriate NSF program offices. Any changes in NSF's fiscal year programs occurring after press time for the Guide to Programs will be announced in the NSF E-Bulletin, which is updated daily on the NSF Website at http://www.nsf.gov/home/ebulletin, and in individual program announcements/solicitations. Subscribers can also sign up for MyNSF, formerly the Custom News Service, at (http://www.nsf.gov/home/cns/start.htm) to be notified of new funding opportunities that become available.

Students are encouraged to gain professional experience in other countries through their university graduate programs, and to participate in international research opportunities offered by NSF at: http://www.nsf.gov/od/oise/stud-early-career.jsp. Other funding opportunities for students are available at http://www.nsfgrfp.org/.

## ABOUT THE NATIONAL SCIENCE FOUNDATION

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 55,000 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 Arctic 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

  or telephone: (703) 292-7827
- **To Locate NSF Employees:** (703) 292-5111

## PRIVACY ACT AND PUBLIC BURDEN STATEMENTS

The information requested on the application materials is solicited under the authority of the National Science Foundation Act of 1950, as amended. It will be used in connection with the selection of qualified applicants and may be disclosed to qualified reviewers as part of the review process; to the institution the nominee, applicant or fellow is attending or is planning to attend or is employed by for the purpose of facilitating review or award decisions, or administering fellowships or awards; to government contractors, experts, volunteers and other individuals who perform a service to or work under a contract, grant, cooperative agreement, advisory committee, committee of visitors, or other arrangement with the Federal government as necessary to complete assigned work; to other government agencies needing data regarding applicants or nominees as part of the review process, or in order to coordinate programs; and to another Federal agency, court or party in a court or Federal administrative proceeding if the government is a party. Information from this system may be merged with other computer files to carry out statistical studies the results of which do not identify individuals. Notice of the agency's decision may be given to nominators, and disclosure may be made of awardees' names, home institutions, and fields of study for public information purposes. For fellows or awardees receiving stipends directly from the government, information is transmitted to the Department of the Treasury to make payments. See System of Records, NSF-12, "Fellowships and Other Awards," 63 Federal Register 265 (January 5, 1998). Submission of the information is voluntary; however, failure to provide full and complete information may reduce the possibility of your 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 this burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to:

Suzanne H. Plimpton
Reports Clearance Officer
Office of the General Counsel
National Science Foundation
Arlington, VA 22230

## X. APPENDIX

## NATIONAL SCIENCE FOUNDATION GRADUATE RESEARCH FELLOWSHIPS

### Fields of Study

Note: Applications are reviewed in panels based on the selection of a primary Field of Study. Selection of a primary Field of Study determines the application deadline and the panel that will review the application. Applicants may select “other” if their Field of Study is not represented in the list under each 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

Chemical Catalysis
Chemical Measurement and Imaging
Chemical Structure, Dynamics, and Mechanism
Chemical Synthesis
Chemical Theory, Models and Computational Methods
Chemistry of Life Processes
Environmental Chemical Systems
Macromolecular, Supramolecular, and Nanochemistry
Sustainable Chemistry
Chemistry, other (specify)

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

Algorithms and Theoretical Foundations
Bioinformatics and other Informatics
Communication and Information Theory
Computational Science and Engineering
Computer Architecture
Computer Networks
Computer Security and Privacy
Computer Systems and Embedded Systems
Databases
Data Mining and Information Retrieval
Formal Methods, Verification, and Programming Languages
Graphics and Visualization
Human Computer Interaction
Machine Learning
Natural Language Processing
Robotics and Computer Vision
Software Engineering
CISE, other (specify)

### ENGINEERING

Aeronautical and Aerospace
Bioengineering
Biomedical
Chemical Engineering
Civil Engineering
Computer Engineering
Electrical and Electronic
Energy
Environmental
Industrial Engineering & Operations Research
Materials
Mechanical
Nuclear
Ocean
Optical Engineering
Polymer
Systems Engineering
Engineering, other (specify)

### GEOSCIENCES

Atmospheric Chemistry
Aeronomy
Biogeochemistry
Biological Oceanography
Chemical Oceanography
Climate and Large-Scale Atmospheric Dynamics
Geobiology
Geochemistry
Geomorphology
Geodynamics
Geophysics
Glaciology
Hydrology
Magnetospheric Physics
Marine Biology
Marine Geology and Geophysics
Paleoclimate
Paleontology and Paleobiology
Petrology
Physical and Dynamic Meteorology

Physical Oceanography
Sedimentary Geology
Solar Physics
Tectonics
Geosciences, other (specify)

**LIFE SCIENCES**

Biochemistry
Bioinformatics and Computational Biology
Biophysics
Cell Biology
Developmental Biology
Ecology
Environmental Biology
Evolutionary Biology
Genetics
Genomics
Microbial Biology
Neurosciences
Organismal Biology
Physiology
Proteomics
Structural Biology
Systematics and Biodiversity

Systems and Molecular Biology
Life Sciences, other (specify)

**MATERIALS RESEARCH**

Biomaterials
Ceramics
Chemistry of materials
Electronic materials
Materials theory
Metallic materials
Photonic materials
Physics of materials
Polymers
Materials Research, other (specify)

**MATHEMATICAL SCIENCES**

Algebra, Number Theory, and Combinatorics
Analysis
Applied Mathematics
Biostatistics
Computational and Data-enabled Science
Computational Mathematics
Computational Statistics
Geometric Analysis
Logic or Foundations of Mathematics
Mathematical Biology
Probability
Statistics
Topology
Mathematics, other (specify)

**PHYSICS AND ASTRONOMY**

Astronomy and Astrophysics
Atomic, Molecular and Optical Physics
Condensed Matter Physics
Nuclear
Particle Physics
Physics of Living Systems
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
Physiological
Psycholinguistics
Quantitative
Social
Psychology, other (specify)

**SOCIAL SCIENCES**

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

**STEM EDUCATION AND LEARNING RESEARCH**

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

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The National Science Foundation, 4201 Wilson Boulevard, Arlington, Virginia 22230, USA
Tel: (703) 292-5111, FIRS: (800) 877-8339 | TDD: (800) 281-8749

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