

NSF 24-591: NSF Graduate Research Fellowship Program (GRFP)

Program Solicitation

Document Information

Document History

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National Science Foundation

Directorate for Biological Sciences
Directorate for Computer and Information Science and Engineering
Directorate for STEM Education
 Division of Graduate Education
Directorate for Engineering
Directorate for Geosciences
Directorate for Mathematical and Physical Sciences
Directorate for Social, Behavioral and Economic Sciences
Directorate for Technology, Innovation and Partnerships
Office of Integrative Activities
Office of International Science and Engineering

Application Deadline(s) (received by 5 p.m. local time of applicant's mailing address):

October 15, 2024

Chemistry; Geosciences, Mathematical Sciences; Physics and Astronomy

October 16, 2024

Life Sciences

October 17, 2024

Engineering

October 18, 2024

Computer and Information Science and Engineering; Materials Research; Psychology; Social, Behavioral and Economic Sciences, STEM Education and Learning



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Important Information And Revision Notes

1. This solicitation covers the Fiscal Year (FY) 2025 competition.
2. Applicants must use the Research.gov/GRFP site (<https://www.research.gov/grfp/Login.do>) to register in Research.gov and submit their applications through the GRFP Application Module. Only materials submitted through the GRFP Application Module will be accepted.
3. Applications are due on the deadline date at 5:00 p.m. local time of the applicant's mailing address.
4. Currently enrolled second-year graduate students are **strongly advised** to provide **official** Registrar-issued transcripts that clearly indicate the start date of their graduate degree enrollment as part of their application. If the start date is not clearly stated on the transcript, applicants should upload a Registrar-issued document indicating the start of graduate degree enrollment to avoid delay in processing.
5. NSF will continue to emphasize high priority research in alignment with the priorities laid out in pages 129-130 of the FY2025 budget [[Budget of the United States Government, Fiscal Year 2025 \(whitehouse.gov\)](#)]
6. Portions of the eligibility criteria have been rewritten for clarity.

7. **Reference letters are due October 11 at 5:00 p.m. Eastern Time (ET).** The reference letter deadline is a few days before the application deadline dates. Reference letter writers must use the Research.gov/GRFP site (<https://www.research.gov/grfp/Login.do>) to register in Research.gov and submit reference letters through the NSF Reference Letter System.
8. Applicants and reference letter writers requiring accessibility accommodation are asked to notify the GRF Operations Center at least four weeks before the deadline to coordinate assistance with NSF in submitting the application or reference letter.

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 quality, vitality, and diversity of the scientific and engineering workforce of the United States. The program recognizes and supports outstanding graduate students who are pursuing full-time research-based master's and doctoral degrees in science, technology, engineering, and mathematics (STEM) or in STEM education. The GRFP provides three years of support over a five-year fellowship period for the graduate education of individuals who have demonstrated their potential for significant research achievements in STEM or STEM education. NSF actively encourages submission of applications from the full spectrum of diverse talent that society has to offer which includes underrepresented and under-served communities.

NSF GRFP was established to recruit and support individuals who demonstrate the potential to make significant contributions in STEM. NSF especially encourages applications from undergraduate seniors and Bachelor's degree-holders interested in pursuing research-based graduate study in STEM. First- and second-year graduate students in eligible STEM fields and degree programs are also encouraged to apply.

Broadening Participation In STEM:

NSF recognizes the unique lived experiences of individuals from communities that are underrepresented and/or under-served in science, technology, engineering, and mathematics (STEM) and the barriers to inclusion and access to STEM education and careers. NSF highly encourages the leadership, partnership, and contributions in all NSF opportunities of individuals who are members of such communities supported by NSF. This includes leading and designing STEM research and education proposals for funding; serving as peer reviewers, advisory committee members, and/or committee of visitor members; and serving as NSF leadership, program, and/or administrative staff. NSF also highly encourages demographically diverse institutions of higher education (IHEs) to lead, partner, and contribute to NSF opportunities on behalf of their research and education communities. NSF expects that all individuals, including those who are members of groups that are underrepresented and/or under-served in STEM, are treated equitably and inclusively in the Foundation's proposal and award process.

NSF encourages IHEs that enroll, educate, graduate, and employ individuals who are members of groups underrepresented and/or under-served in STEM education programs and careers to lead, partner, and contribute to NSF opportunities, including leading and designing STEM research and education proposals for funding. Such IHEs include, but may not be limited to, community colleges and two-year institutions, mission-based institutions such as Historically Black Colleges and Universities (HBCUs), Tribal Colleges and Universities (TCUs), women's colleges, and institutions that primarily serve persons with disabilities, as well as institutions defined by enrollment such as Predominantly Undergraduate Institutions (PUIs), Minority-Serving Institutions (MSIs), and Hispanic Serving Institutions (HSIs).

"Broadening participation in STEM" is the comprehensive phrase used by NSF to refer to the Foundation's goal of increasing the representation and diversity of individuals, organizations, and geographic regions that contribute to STEM teaching, research, and innovation. To broaden participation in STEM, it is necessary to address issues of equity, inclusion, and access in STEM education, training, and careers. Whereas all NSF programs might support broadening participation components, some programs primarily focus on supporting broadening participation research and projects. Examples can be found on the NSF [Broadening Participation in STEM](#) website.

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.

- Contact: GRF Operations Center, 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 --- STEM Education
- 47.079 --- Office of International Science and Engineering
- 47.083 --- Office of Integrative Activities (OIA)
- 47.084 --- NSF Technology, Innovation and Partnerships

Award Information

Anticipated Type of Award: Fellowship

Estimated Number of Awards: 2,300

NSF will support up to 2,300 new Graduate Research Fellowships per fiscal year under this program solicitation pending availability of funds.

Anticipated Funding Amount: \$159,000

Per award (Fellowship), pending the availability of funds.

Each Fellowship provides three years of support over a five-year fellowship period. For each of the three years of support, NSF provides a \$37,000 stipend and \$16,000 Cost of Education allowance to the graduate degree-granting institution of higher education for each Fellow who uses the support in a fellowship year. The Fellowship is portable and can be transferred to a different institution of higher education if a Fellow chooses to transfer to another institution after completion of the first Fellowship year. While the Fellowship is offered to the individual, the Fellowship funds are awarded to the institution of higher education at which a Fellow is enrolled and the institution is responsible for disbursement of the stipend to the Fellow.

Eligibility Information

Organization Limit:

Fellowship applications must be submitted by the prospective Fellow. Applicants must use the GRFP application module in Research.gov (<https://www.research.gov/grfp/Login.do>) to submit the application. Confirmation of acceptance in a

graduate degree program in STEM or STEM education is required at the time of Fellowship acceptance, no later than the deadline indicated in the fellowship offer letter, of the year the Fellowship is accepted. Prospective Fellows must enroll in a non-profit university, college, or 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 and STEM education no later than fall of the year the Fellowship is accepted. All Fellows from the date of Fellowship Start through Completion or Termination of the Fellowship must be enrolled in a graduate degree-granting 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.

Applicant Eligibility:

See the Detailed Eligibility Requirements in Section IV for full information. **Eligibility is based on the applicant's status at the application deadline.**

Applicants must self-certify that they are eligible to receive the Fellowship. To be eligible, an applicant must meet all of the following eligibility criteria at the application deadline. All academic credentials must be indicated in Registrar-issued transcripts.

- Be a U.S. citizen, national, or permanent resident
- Intend to enroll or be enrolled full-time in a research-based Master's or doctoral degree program in an eligible Field of Study in STEM or STEM education (See Appendix and Section IV.3 for eligible Fields of Study)
- Never previously accepted a Graduate Research Fellowship
- Declined any previously offered Graduate Research Fellowship by the acceptance deadline
- Never previously applied to GRFP while enrolled in a graduate degree program
- Never earned a doctoral or terminal degree in any field
- Have completed no more than one academic year (according to institution's academic calendar) while enrolled in a graduate degree program (non-degree coursework must be clearly identified in the transcript and does not count toward this limit)
- Individuals holding joint Bachelor's-Master's degrees who did not apply while enrolled in the joint program, may apply as second-year graduate applicants if enrolled in an eligible doctoral program the beginning of the academic year immediately following the academic award year of the joint degree
- Individuals with prior graduate enrollment who have: (i) completed more than one academic year in any graduate degree-granting program, (ii) earned a previous master's degree of any kind (see guidance for joint Bachelor's-Master's degree-holders above), or (iii) earned a professional degree must meet the following requirements:
 - **not enrolled in a graduate degree program at application deadline**
 - **two or more consecutive years past graduate degree enrollment or completion at the application deadline**
- Not be a current NSF employee.

Applications that do not meet eligibility requirements will not be reviewed.

Number of Times an Individual May Apply

- Undergraduate seniors and Bachelor's degree holders who have never enrolled in a graduate degree program have no restrictions on the number of times they can apply before enrolling in a degree-granting graduate program.
- Currently enrolled graduate students who have completed no more than one academic year (according to institution's academic calendar) while enrolled in a graduate degree program can apply only **once**. Non-degree coursework (clearly identified in a transcript) does not count toward the one academic year limit.

- Individuals applying while enrolled in a joint Bachelor's-Master's degree program are considered graduate students who: i) must have completed three (3) years in the joint program, and; ii) are limited to **one** application to GRFP; they will not be eligible to apply again as doctoral students. For GRFP, joint Bachelor's-Master's degrees are defined as degrees **concurrently pursued and awarded**.
- Individuals holding joint Bachelor's-Master's degrees, currently enrolled as first-year doctoral students, who (i) have not previously applied as graduate students and (ii) enrolled in the doctoral program the beginning of the academic year immediately following the academic award year of the joint degree, may only apply in the first year of the doctoral program.
- Applications withdrawn by November 15 of the application year do not count toward the one-time graduate application limit. **Applications withdrawn after November 15 count toward this one-time limit.**
- Applications not reviewed by NSF do not count toward the one-time graduate application limit.

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 NSF *Proposal and Award Policies and Procedures Guide* (PAPPG) 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 5 p.m. local time of applicant's mailing address):

October 15, 2024

Chemistry; Geosciences, Mathematical Sciences; Physics and Astronomy

October 16, 2024

Life Sciences

October 17, 2024

Engineering

October 18, 2024

Computer and Information Science and Engineering; Materials Research; Psychology; Social, Behavioral and Economic Sciences, STEM Education and Learning

Application Review Information Criteria

Merit Review Criteria:

National Science Board approved Merit Review Criteria (Intellectual Merit and Broader Impacts) apply. Additional Solicitation-Specific Review Criteria also apply (see Section VI.A below).

Award Administration Information

Award Conditions:

NSF GRFP awards are made to the institution of higher education at which a Fellow is or will be enrolled. The awardee institution is responsible for financial management of the award and disbursement of Fellowship funds to the individual Fellow. The institution will administer the awards, including any amendments, in accordance with the terms of the Agreement and provisions (and any subsequent amendments) contained in the document *NSF Graduate Research Fellowship Program Administrative Guide for Fellows and Coordinating Officials*. All Fellowships are subject to the provisions (and any subsequent amendments) contained in the document *NSF Graduate Research Fellowship Program Administrative Guide for Fellows and Coordinating Officials*.

Reporting Requirements:

See reporting requirements in full text of solicitation and the *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 the deadline specified in the notification sent by email each year. Additional reporting requirements are presented in Section VII.C of this solicitation.

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 over a five-year period are provided for graduate study that leads to a research-based master's or doctoral degree in STEM or STEM education (see eligible Fields of Study in Appendix).

The program goals are: 1) to select, recognize, and financially support early-career individuals with the demonstrated potential to be high achieving scientists and engineers, and 2) to broaden participation of the full spectrum of diverse talents in STEM. NSF actively encourages submission of applications from the full spectrum of diverse talent in STEM.

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.

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. GRFP supports individuals proposing a comprehensive plan for graduate education that takes individual interests and competencies into consideration. The plan describes the academic achievements, attributes, and experiences that illustrate the applicant's demonstrated potential for significant research achievements. The applicant must provide a detailed profile of their relevant education, research experience, and plans for graduate education that demonstrates this potential.

Prospective applicants are advised that submission of an application implies their intent to pursue graduate study in a research-based program in STEM or STEM education at an accredited, non-profit institution of higher education having a campus located in the United States, its territories or possessions, or the Commonwealth of Puerto Rico. All applicants are expected to either have adequate preparation to enroll in a research-based master's or doctoral program, or be enrolled in such a program by fall of the year the Fellowship is accepted. From the date of the Fellowship Start through Completion or Termination of the Fellowship, applicants accepting the award (Fellows) must be enrolled in an accredited graduate degree-granting institution of higher education having a campus located in the United States, its territories or possessions, or the Commonwealth of Puerto Rico.

In FY2024, NSF will continue to fund outstanding Graduate Research Fellowships in all areas of science and engineering supported by NSF and continue to emphasize high priority research areas in alignment with NSF goals and priorities listed in pages 127-128 of the FY2024 budget (https://www.whitehouse.gov/wp-content/uploads/2023/03/budget_fy2024.pdf). Applications are encouraged in all disciplines supported by NSF.

III. Award Information

NSF will support up to 2,300 new Graduate Research Fellowships per fiscal year 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 fall of the award year) usable over a five-year fellowship period. The anticipated announcement date for the Fellowship awards is early April each year.

The Fellowship is portable and can be transferred to a different institution of higher education if a Fellow chooses to transfer to another institution after completion of the first Fellowship year. While the Fellowship is offered to the individual, the Fellowship funds are awarded to the institution at which a Fellow is enrolled and is considered the official NSF awardee institution. The awardee institution receives up to a \$53,000 award per Fellow who uses the support in a fellowship year. The awardee institution is responsible for disbursement of fellowship funds to the Fellow. The Graduate Research Fellowship stipend is \$37,000 for a 12-month tenure period, prorated in whole month increments of \$3,083. The Cost of Education allowance provides payment in lieu of tuition and mandatory fees to the institution of \$16,000 per year of fellowship support.

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). Acceptance of fellowship funds by the awardee institution indicates acceptance of and adherence to these and other terms and conditions of the NSF GRFP award as indicated in the [NSF Graduate Research Fellowship Program Administrative Guide for Fellows and Coordinating Officials](#).

GRFP awards are eligible for supplemental funding as described in Chapter VI of the *NSF Proposal & Award Policies & Procedures Guide* (PAPPG).

Facilitation Awards for Scientists and Engineers with Disabilities (FASED) provide funding for special assistance or equipment to enable persons with disabilities to work on NSF-supported projects as described in Chapter II.F of the PAPPG. Fellows with disabilities may apply for assistance after consulting the instructions in the document *NSF Graduate Research Fellowship Program Administrative Guide for Fellows and Coordinating Officials*.

Career-Life Balance Supplemental Funding Requests (Dear Colleague Letter [NSF 21-021](#)) can be requested by the awardee institution to provide additional personnel (e.g., technician) to sustain the research of Fellows on approved medical leave due to family leave situations as indicated in Chapter II.F of the PAPPG.

Fellows are eligible to apply for non-academic [INTERN](#) supplements; applications must be submitted according to GRFP-specific guidance stated in the INTERN program description.

Honorable Mention

The NSF accords Honorable Mention to meritorious applicants who do not receive Fellowship offers. This is considered a significant national academic achievement.

IV. Eligibility Information

Organization Limit:

Fellowship applications must be submitted by the prospective Fellow. Applicants must use the GRFP application module in Research.gov (<https://www.research.gov/grfp/Login.do>) to submit the application. Confirmation of acceptance in a graduate degree program in STEM or STEM education is required at the time of Fellowship acceptance, no later than the deadline indicated in the fellowship offer letter, of the year the Fellowship is accepted. Prospective Fellows must enroll in a non-profit university, college, or 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 and STEM education no later than fall of the year the Fellowship is accepted. All Fellows from the date of Fellowship Start through Completion or Termination of the Fellowship must be enrolled in a graduate degree-granting 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.

Applicant Eligibility:

See the Detailed Eligibility Requirements in Section IV for full information. **Eligibility is based on the applicant's status at the application deadline.**

Applicants must self-certify that they are eligible to receive the Fellowship. To be eligible, an applicant must meet all of the following eligibility criteria at the application deadline. All academic credentials must be indicated in Registrar-issued transcripts.

- Be a U.S. citizen, national, or permanent resident
- Intend to enroll or be enrolled full-time in a research-based Master's or doctoral degree program in an eligible Field of Study in STEM or STEM education (See Appendix and Section IV.3 for eligible Fields of Study)
- Never previously accepted a Graduate Research Fellowship
- Declined any previously offered Graduate Research Fellowship by the acceptance deadline
- Never previously applied to GRFP while enrolled in a graduate degree program
- Never earned a doctoral or terminal degree in any field
- Have completed no more than one academic year (according to institution's academic calendar) while enrolled in a graduate degree program (non-degree coursework must be clearly identified in the transcript and does not count toward this limit)
- Individuals holding joint Bachelor's-Master's degrees who did not apply while enrolled in the joint program, may apply as second-year graduate applicants if enrolled in an eligible doctoral program the beginning of the academic year immediately following the academic award year of the joint degree
- Individuals with prior graduate enrollment who have: (i) completed more than one academic year in any graduate degree-granting program, (ii) earned a previous master's degree of any kind (see guidance for joint Bachelor's-Master's degree-holders above), or (iii) earned a professional degree must meet the following requirements:
 - **not enrolled in a graduate degree program at application deadline**
 - **two or more consecutive years past graduate degree enrollment or completion at the application deadline**
- Not be a current NSF employee.

Applications that do not meet eligibility requirements will not be reviewed.

Number of Times an Individual May Apply

- Undergraduate seniors and Bachelor's degree holders who have never enrolled in a graduate degree program have no restrictions on the number of times they can apply before enrolling in a degree-granting graduate program.
- Currently enrolled graduate students who have completed no more than one academic year (according to institution's academic calendar) while enrolled in a graduate degree program can apply only **once**. Non-degree coursework (clearly identified in a transcript) does not count toward the one academic year limit.
- Individuals applying while enrolled in a joint Bachelor's-Master's degree program are considered graduate students who: i) must have completed three (3) years in the joint program, and; ii) are limited to **one** application to GRFP; they will not be eligible to apply again as doctoral students. For GRFP, joint Bachelor's-Master's degrees are defined as degrees **concurrently pursued and awarded**.
- Individuals holding joint Bachelor's-Master's degrees, currently enrolled as first-year doctoral students, who (i) have not previously applied as graduate students and (ii) enrolled in the doctoral program the beginning of the academic year immediately following the academic award year of the joint degree, may only apply in the first year of the doctoral program.
- Applications withdrawn by November 15 of the application year do not count toward the one-time graduate application limit. **Applications withdrawn after November 15 count toward this one-time limit.**
- Applications not reviewed by NSF do not count toward the one-time graduate application limit.

Limit on Number of Applications per Applicant: 1

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

Additional Eligibility Info:

Eligibility is based on the applicant's status at the application deadline.

Detailed Eligibility Requirements:

Described in detail below are the eligibility requirements for the Graduate Research Fellowship Program: (1) citizenship, (2) degree requirements, and (3) field of study, degree programs, and proposed research. Applicants are strongly advised to read the entire program solicitation carefully to ensure that they understand all the eligibility requirements. Applicants must self-certify that they meet all eligibility criteria.

1. Citizenship

Applicants must be United States citizens, nationals, or permanent residents by the application deadline.

The term "national" designates a native resident of a commonwealth or territory of the United States. 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, nor does it refer to an individual present in the U.S. on any type of visa.

2. Degree Requirements

Eligible applicants: 1) current undergraduates or Bachelor's degree holders never enrolled in a degree-granting graduate program, who will be prepared to attend graduate school in fall of the award year; 2) current graduate students with no more than one academic year completed according to institution's academic calendar of any degree-granting graduate program; or 3) currently unenrolled individuals who wish to return to graduate study and are at least two consecutive years past their most recent enrollment in any graduate degree-granting program, regardless of whether the degree was completed or awarded.

Below are detailed guidelines to determine eligibility:

a) Currently enrolled undergraduate students and Bachelor's degree-holders with no prior enrollment in a graduate degree-granting program (including joint Bachelor's-Master's programs):

- **Undergraduate students** on track to receive a Bachelor's degree by the fall of the year following the application (e.g., senior or final year of Bachelor's degree) and **Bachelor's degree holders** never enrolled in a graduate degree program can apply an unlimited number of times prior to enrolling in a graduate degree program. They must be prepared to enroll in a full-time graduate degree program by fall of the year they are offered a Graduate Research Fellowship.

b) Currently enrolled joint Bachelor's-Master's degree students (joint Bachelor's-Master's defined as program in which both degrees are concurrently pursued and awarded as indicated on the transcript):

- Individuals applying while enrolled in a joint Bachelor's-Master's degree program are considered graduate students who: 1) must have completed three years in the joint program, and; ii) are limited to **one** application to GRFP; they will not be eligible to apply again as doctoral students.
- Joint Bachelor's-Master's degree-holders, currently enrolled as first-year doctoral students who have not previously applied as graduate students and enrolled in the doctoral program in the beginning of the academic year immediately following the academic award year of the joint degree, may only apply in the first year of the doctoral program.
- Individuals holding joint Bachelor's-Master's degrees who did not progress to a doctoral program the beginning of the academic year immediately following the academic award year of the joint degree, must apply as returning graduate students (see above).

c) Currently enrolled graduate students:

- Applicants must not have completed more than one academic year of graduate study **as indicated in the academic transcript issued by the Registrar** of the universities attended, as of the application deadline.
- Graduate status is determined to begin on the date indicated on the Registrar-issued transcript and ALL activities after that date will be considered graduate activities.
- Summer research activities that are part of the graduate degree program (e.g. research credits) will be counted as graduate activities.
- Participation in non-degree summer activities PRIOR TO graduate degree enrollment as indicated in the Registrar-issued transcript before the start of the fall graduate program is not included in this total.
- Second-year graduate students are **strongly advised** to include **official** Registrar-issued transcripts. If the transcript does not clearly state the start date of graduate degree enrollment, they should also submit a Registrar-issued document confirming the start of graduate degree enrollment.
- Graduate coursework taken without being enrolled in a graduate degree-granting program is not counted in this limit.

d) Currently unenrolled individuals who wish to re-enter graduate study:

- Applicants who earned a previous Master's or professional degree, or have completed more than one academic year in any graduate degree program (regardless of whether the degree was completed or awarded) are eligible **only if they are currently unenrolled and at least two consecutive years past the most recent graduate degree enrollment at the application deadline**. Applicants must not have engaged in any graduate coursework during the interruption. Applicants should address the reasons for the interruption in graduate study in the Personal, Relevant Background and Future Goals Statement.

3. Field of Study, Degree Programs, and Proposed Research

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, in eligible Fields of Study listed below:

1. Chemistry
2. Computer and Information Sciences and Engineering
3. Engineering
4. Geosciences
5. Life Sciences
6. Materials Research
7. Mathematical Sciences
8. Physics & Astronomy
9. Psychology
10. Social, Behavioral, and Economic Sciences
11. STEM Education and Learning Research

A complete list of eligible Major Fields of Study and their subfields are listed in the Appendix. If awarded, Fellows must enroll in a graduate degree program consistent with the Major Field of Study proposed in their application. A fellowship will not be awarded in a different Major Field of Study from that indicated in the application.

Only research-based Master's and doctoral degrees in STEM or STEM education are eligible for GRFP support. Professional degree programs and graduate programs that are primarily course-based with no thesis are ineligible for GRFP support.

Within eligible fields of study, there are ineligible areas of study and ineligible areas of proposed research. See below for ineligible areas of study and proposed research.

Applications determined to be ineligible will not be reviewed.

a) Ineligible degree programs

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 degrees **at any time** during the fellowship. Ineligible degree programs include, but are not limited to, MBA, MPH, MSW, JD, MD, PharmD, DVM 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. Individuals 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.

b) Ineligible areas of study

Individuals are not eligible to apply if they will be enrolled in graduate study focused on clinical practice, counseling, social work, patient-oriented research, epidemiological and medical behavioral studies, outcomes research (interventions, treatment, or therapies), and health services research. Ineligible study includes pharmacologic, non-pharmacologic, and behavioral interventions for physical or mental disease or disorder, prophylaxis, diagnosis, therapy, or treatment. Research to provide evidence leading to a scientific basis for consideration of a change in health policy or standard of care is not eligible. Graduate study focused on community, public, or global health, or other population-based research including medical intervention trials is also not eligible.

c) Ineligible proposed research and limited exceptions to ineligible research:

(i) Biological or psychological research for which the goals are directly human disease- or health- related, including the etiology, diagnosis of, and treatment and/or interventions for, physical or mental disease or disorder is not eligible for support, with limited exceptions for applicants in engineering, mathematical, physical, and computer or information sciences with health-related research topics (described below). Research activities using animal models of disease for developing or testing of drugs, procedures, or interventions for treatment of physical or mental disease or disorder are also not eligible.

(ii) For applicants applying to degree programs in engineering, mathematical, physical, computer or information sciences disciplines, research with disease- or health-related goals (e.g., etiology-, diagnosis-, or treatment-related) that **advance fundamental knowledge** in engineering, mathematical, physical, computer or information sciences, is eligible for support.

(iii) Certain areas of bioengineering research directed at medical use are eligible. These include research projects in bioengineering to aid persons with disabilities, or to diagnose or treat human disease or disorder, provided they apply engineering principles to problems in medicine while primarily advancing engineering knowledge. Applicants planning to study and conduct research in these areas of bioengineering should select biomedical engineering as the field of study.

(iv) Certain areas of materials research directed at development of materials for use in biological or biomedical systems are eligible, provided they are focused on furthering fundamental materials research.

(v) Research focused on basic questions in plant pathology is eligible, however, applied studies focused on maximizing production in agricultural plants or impacts on food safety are not eligible.

(vi) Research with implications that inform policy is eligible. Research with the expressed intent to influence, advocate for or effect specific policy outcomes is not eligible.

Applicants are advised to consult a faculty member, academic advisor, mentor, or other advisor for guidance on preparation of their research plans, and selection of Major Fields of Study and subfields.

V. Application Preparation And Submission Instructions

A. Application Preparation Instructions

Fellowship applications must be submitted online using the NSF Graduate Research Fellowship Program Application Module at <https://www.research.gov/grfp/Login.do> **according to the deadline corresponding with the Field of Study selected in the application.**

Applications must be received by 5:00 p.m. local time as determined by the applicant's mailing address provided in the application. **Applications received after the Field of Study deadline will not be reviewed. Applications submitted to a Field of Study deadline not in alignment with the proposed research plan will not be reviewed.**

All reference letters must be submitted online by the reference writers through the NSF Reference Letter System in the Research.gov site (<https://www.research.gov/grfp/Login.do>) and must be received by the reference letter deadline (see *Application Preparation and Submission Instructions/C. Due Dates* of this Solicitation), of **5:00 p.m. Eastern Time (ET)**. No reference letters will be accepted via email. **Reference letter writers cannot be family members of the applicant. Applicants are required to provide the name and contact information for three (3) reference writers from non-family members.** Up to five (5) potential reference letter writers can be provided. **Two reference letters from non-family members must be received by the reference letter deadline to be reviewed.** If fewer than two reference letters (one or none) are received by the reference letter deadline, the application will not be reviewed.

Applicants must submit the following information through the GRFP Application Module: Personal Information; Education, Work and Other Experience; Transcript PDFs; Proposed Field(s) of Study; Proposed Graduate Study and Graduate School

Information; the names and email addresses of at least three reference letter writers; Personal, Relevant Background and Future Goals Statement PDF; and Graduate Research Plan Statement PDF.

Only the information required in the GRFP Application Module will be reviewed. No additional items or information will be accepted or reviewed. Do not provide links to web pages within the application, except as part of citations in the References Cited section. Images must 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. **No application materials will be accepted via email.**

Applicants must follow the instructions in the GRFP Application Module for completing each section of the application. The statements must be written using the following guidelines:

- standard 8.5" x 11" page size
- 11 point or higher font, except text that is part of an image
- Times New Roman font for all text, Cambria Math font for equations, Symbol font for non-alphabetic characters (it is recommended that equations and symbols be inserted as an image)
- Cited references should include the name of the journal (abbreviations accepted).
- 1" margins on all sides, no text inside 1" margins (no header, footer, name, or page number)
- No less than single-spacing (approximately 6 lines per inch)
- Do not use line spacing options such as "exactly 11 point," that are less than single spaced
- PDF file format only

Compliance with these guidelines will be automatically checked by the GRFP Application Module. Documents that are not compliant **will not** be accepted by the GRFP Application Module. Applicants are **strongly advised** to proofread and upload their documents early to ensure they are format-compliant and that non-compliant documents do not delay upload of the complete application for receipt by the deadline. Applications that are not compliant with these format requirements will not be reviewed.

The maximum length of the Personal, Relevant Background and Future Goals Statement is three (3) pages (PDF). The maximum length of the Graduate Research Plan Statement is two (2) pages (PDF). 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 the application are their own original work. As explained in the *NSF Proposal and Award Policies and Procedures Guide (PAPPG)*: "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 PAPPG, as well as 45 CFR Part 689."

Both Personal and Research Plan statements must address NSF's review criteria of Intellectual Merit and Broader Impacts (described in detail in Section VI). **"Intellectual Merit" and "Broader Impacts" sections must be presented in individual separate sections, under individual separate headings, in each of the Personal and Research Plan statements. These separately headed sections cannot be combined into one section or combined with any other section. Applications that do not have separate headings and sections for Intellectual Merit and Broader Impacts will not be reviewed.**

Applicants must list their undergraduate institution, and all graduate institutions attended with a start date prior to the fall term in which the application is submitted. Transcripts are **required** for all degree-granting programs listed. Transcripts may be included for all other institutions listed in the Education section. If the applicant started at the current institution in the fall of the application year 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. **Second-year graduate students are strongly advised to submit an official transcript.** If the transcript or

enrollment verification form does not include the graduate enrollment start date, a Registrar-issued document that indicates graduate enrollment start date must be submitted.

At least one transcript must be included for the application to be accepted by the GRFP Application Module.

Transcripts must be uploaded through the GRFP Application Module by the Field of Study application deadline. Applicants should 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 as a PDF to be accepted by the GRFP Application Module. **Transcripts must not be encrypted; the GRFP Application Module does not accept encrypted or password-protected transcripts.**

Applicants who earned master's degrees in joint Bachelor's-Master's degree programs should submit transcripts that clearly document the joint program. If the transcript does not document the joint program and does not show that the Bachelor's and Master's degrees were conferred on the same date, 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 not being reviewed.

Applications that are incomplete due to missing required transcripts and/or reference letters (fewer than two letters received), or that do not have "received" status in the Application Module on the application deadline for the selected Field of Study) will not be reviewed. Applicants are advised to submit applications early to avoid unanticipated delays on the deadline dates.

Reference Letters

Reference writers cannot be family members of the applicant. Applicants are required to provide the name and contact information for three (3) reference writers from **non-family members**. Up to five (5) potential reference letter writers can be provided. **Two reference letters from non-family members must be received by the reference letter deadline for an application to be reviewed.** If fewer than two reference letters (one or none) are received by the reference letter deadline, the application will not be reviewed.

No changes to the list of reference writers are allowed after the application is submitted. Applicants are strongly advised to check the accuracy of email addresses provided for reference writers before submitting their application. Applicants are strongly advised to contact potential reference writers and confirm their willingness to register in Research.gov and to submit a reference letter before the deadline for letters, before submitting their names.

All reference letters must be received through the NSF Reference Letter System by **5:00 p.m. ET (Eastern Time)** on the letter submission deadline date (see the deadline posted in GRFP Application Module and in *Application Preparation and Submission Instructions/C. Due Dates* of this Solicitation). **No exceptions** to the reference letter submission deadline will be granted. Each letter is limited to two (2) pages (PDF). The GRFP Application Module allows applicants to request up to five (5) reference letters and to rank those reference letters in order of preference for review. If more than three reference letters are received, the top three letters according to ranked preference will be considered for the application. Reference writers will be notified by an email of the request to submit a letter of reference on behalf of an applicant. Reference writers will not be notified of the ranked preference for review provided by the applicant.

To avoid disqualifying an application, reference writers should upload the letter well in advance of the 5:00 p.m. ET deadline. No letters will be accepted via email. Letter writers will receive a confirmation email after successful upload via the GRFP Application Module.

For technical assistance with letter upload: NSF Help Desk: rgov@nsf.gov; 1-800-381-1532

Applicants must enter an email address for each reference writer into the GRFP Application Module. An exact email address is crucial to matching the reference writer and the applicant in the 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 first register in Research.gov then upload their letters through the NSF Reference Letter System. Reference letter requirements include:

- Institutional or professional letterhead, if available
- **SIGNED** by the reference writer, including the name, professional title, department, and institution
- Two (2) page limit (PDF file format)
- Standard 8.5" x 11" page size
- 11-point or higher Times New Roman font and 1" margins on all sides
- Single spaced using normal (100%) single-line spacing

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 (including research advisor role), 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

Applicants should use the "Application Completion Status" feature in the GRFP Application Module to ensure all application materials, including reference letters, have been received by NSF before the deadlines. For technical support, call the NSF Help Desk at 1-800-381-1532 or e-mail rgov@nsf.gov.

Interdisciplinary Applications

NSF welcomes applications for interdisciplinary programs of study and research; however, data on interdisciplinary study is collected for informational purposes only. 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).

Applications must be received by the deadline for the first Major Field of Study designated in the application. Applications will be reviewed by experts in the first Major Field of Study listed. If awarded, Fellows will be required to enroll in a degree program consistent with the Major Field of Study in which the application was funded.

Withdrawal of a GRFP application

To withdraw a submitted application, the applicant must withdraw their application using the **Withdrawal** option in the GRFP Application Module.

Applications withdrawn by November 15 of the application year do not count toward the one-time graduate application limit. Applications withdrawn after November 15 count toward this limit.

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 \$53,000 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 \$37,000 for a 12-month tenure period, prorated in monthly increments of \$3,083. The institutional Cost of Education allowance is \$16,000 per tenure year per Fellow.

C. Due Dates

- **Application Deadline(s)** (received by 5 p.m. local time of applicant's mailing address):

October 15, 2024

Chemistry; Geosciences, Mathematical Sciences; Physics and Astronomy

October 16, 2024

Life Sciences

October 17, 2024

Engineering

October 18, 2024

Computer and Information Science and Engineering; Materials Research; Psychology; Social, Behavioral and Economic Sciences, STEM Education and Learning

D. Application Submission Requirements

Applicants are required to prepare and submit all applications for this program solicitation through the GRFP Application Module. Detailed instructions for application preparation and submission are available at: <https://www.research.gov/grfp/Login.do>. For user support, call the NSF Help Desk at 1-800-381-1532 or e-mail rgov@nsf.gov. The NSF Help Desk answers general technical questions related to the use of the 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. Merit Review Principles and Criteria

Applications are reviewed by disciplinary and interdisciplinary scientists and engineers and other professional graduate education experts. 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. Applications are reviewed in **broad areas** of related disciplines based on the selection of a Field of Study (see Fields of Study in Appendix). **Selection of a Major Field of Study determines the application deadline, the broad disciplinary expertise of the reviewers, and the discipline of the graduate degree program if awarded a Fellowship.** Applicants are advised to select the Major Field of Study in the 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 provide additional information describing their studies.

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*). **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):

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. (PAPPG Chapter II.D.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 PAPPG Chapter II.D.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 PAPPG 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.

Additional Solicitation Specific Review Criteria

Applicants are reviewed on their demonstrated potential to advance knowledge and to make significant research achievements and contributions to their fields throughout their careers. Reviewers are asked to assess applications using a holistic, comprehensive approach, giving balanced consideration to all components of the application, including the educational and research record, leadership, outreach, service activities, and future plans, as well as individual competencies, experiences, and other attributes. The aim is to recruit and retain a diverse cohort of early-career individuals with high potential for future achievements, contributions, and broader impacts in STEM and STEM education.

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 and rating of applications by disciplinary and interdisciplinary scientists and engineers, and other professional graduate education experts.

Applicants are reviewed on their demonstrated potential to advance knowledge and to make significant research achievements and contributions to their fields throughout their careers. Reviewers are asked to assess applications using a holistic, comprehensive approach, giving balanced consideration to all components of the application, including the educational and research record, leadership, outreach, service activities, and future plans, as well as individual competencies, experiences, and other attributes. The aim is to recruit and retain a diverse cohort of early-career individuals with high potential for future achievements, contributions, and broader impacts in STEM and STEM education.

The primary responsibility of each reviewer is to evaluate eligible GRFP applications by applying the Merit Review Criteria described in Section VI.A, and to recommend applicants for NSF Graduate Research Fellowships. Reviewers are instructed to review the applications holistically, applying the Merit Review Criteria and noting GRFP's emphasis on demonstrated potential for significant research achievements in STEM or in STEM education. From these recommendations, NSF selects applicants for Fellowships or Honorable Mention, in line with NSF's mission and the goals of GRFP. After 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 Module.

VII. Award Administration Information

A. Notification of the Award

NSF Graduate Research Fellowship Program applicants will be notified of the outcomes of their applications by early April of the competition year. The NSF publishes lists of Fellowship and Honorable Mention recipients on the GRFP Module at <https://www.research.gov/grfp/Login.do> in early April.

B. Award Conditions

NSF GRFP awards are made to the institution of higher education at which a Fellow is or will be enrolled. The awardee institution is responsible for financial management of the award and disbursement of Fellowship funds to the Fellow. The NSF GRFP 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 Graduate Research Fellowship Program Administrative Guide for Fellows and Coordinating Officials*.

NSF GRFP awards provide funds for NSF Fellows who have "on tenure" status. The institution will administer the awards, including any amendments, in accordance with the terms of the Agreement and provisions (and any subsequent amendments) contained in the document *NSF Graduate Research Fellowship Program Administrative Guide for Fellows and Coordinating Officials*.

The applicant must accept or decline the Fellowship by the deadline indicated in the award notification letter by logging into the GRFP Module at <https://www.research.gov/grfp/Login.do> 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.**

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 Graduate Research Fellowship Program Administrative Guide for Fellows and Coordinating Officials* includes the terms and conditions that apply to the Fellowship and subsequent institutional award, in addition to the eligibility requirements (U.S. citizen, national, or permanent resident, 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.

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 an Institutional Review Board (IRB) before issuance of an NSF award; or, (2) must affirm that the IRB has declared the research exempt from IRB review, in accordance with the applicable subsection, as established in 45 CFR § 690.104(d) 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) 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 an international organization or international 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 an international organization or through an individual fellowship award that will support activities at an international organization, NSF will require a statement from the international organization explicitly listing the proposer's name and referencing the title of the award to confirm that the activities will be conducted in accordance with all applicable laws in the international country and that the International Guiding Principles for Biomedical Research Involving Animals (see: <https://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 the deadline date each year (deadline notification sent by email), using NSF's GRFP Module. The GRFP Module permits online 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 must be 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 Module. **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.

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 (https://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:

Contact: GRF Operations Center, telephone: (866) 673-4737, email: info@nsfgrfp.org

For questions related to the use of GRFP Application Module, contact:

NSF Help Desk: telephone: 1-800-381-1532; e-mail: rgov@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 U.S. 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](#).

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 <https://www.grants.gov>.

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: [Office of International Science and Engineering \(OISE\) | NSF - National Science Foundation](#). Other funding opportunities for students are available at <https://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 (FASSED) provide funding for special assistance or equipment to enable persons with disabilities to work on NSF-supported projects. See the *NSF Proposal & Award Policies & Procedures Guide* Chapter II.F.7 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 <https://www.nsf.gov>.

- **Location:** 2415 Eisenhower Avenue, Alexandria, VA 22314
- **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) 292-8134
- **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 Record Notices](#), 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
Policy Office, Division of Institution and Award Support
Office of Budget, Finance, and Award Management
National Science Foundation
Alexandria, VA 22314

X. Appendix

NATIONAL SCIENCE FOUNDATION GRADUATE RESEARCH FELLOWSHIPS

Major Fields of Study

Note: Applications are reviewed based on the selection of a Major Field of Study. As an example, CHEMISTRY is a Major Field of Study, and Chemical Catalysis is a subfield under CHEMISTRY. A Fellowship can be accepted only in the Major Field of Study indicated in the application. Thus, an application that indicates CHEMISTRY as the Major Field of Study can be accepted in any subfield in CHEMISTRY, but **cannot** be accepted in CHEMICAL ENGINEERING, and ENGINEERING is a different Major Field of Study.

Selection of a Major Field of Study determines the application deadline, the broad disciplinary expertise of the reviewers who will review the application, and the discipline of the graduate program if the Fellowship is accepted. The subfield category designates specific expertise of the reviewers. Applicants can select "Other" if their specific subfield is not represented in the list of subfields under the Major Field of Study. The "Other" subfield category should be selected only if the proposed subfield is not covered by one of the listed subfields, and should not be used to designate a subfield that is more specific than the subfields listed.

CHEMISTRY

Artificial Intelligence
Chemical Catalysis
Chemical Measurement and Imaging
Chemical Structure, Dynamics, and Mechanism
Chemical Synthesis
Chemical Theory, Models and Computational Methods
Chemistry of Life Processes
Computationally Intensive Research
Environmental Chemical Systems
Macromolecular, Supramolecular, and Nanochemistry
Other (specify)

Quantum Information Science
Sustainable Chemistry

COMPUTER AND INFORMATION SCIENCES & ENGINEERING

Accessibility
Algorithms and Theoretical Foundations
Artificial Intelligence
Augmented Reality/Virtual Reality, Graphics, and Visualization
Bioinformatics and Bio-inspired Computing
Communication and Information Theory
Computationally Intensive Research
Computer Architecture
Computer Security and Privacy
Computer Systems
Computer Vision
Cyber-Physical Systems and Embedded Systems
Cybersecurity
Data Science, Data Mining, Information Retrieval and Databases
Electronic Design Automation and Design of Micro and Nano Computing Systems
Fairness, Explainability, Accountability and Transparency in Analytics
Formal Methods, Verification, and Programming Languages
Human Computer Interaction
Information Sciences
Machine Learning
Natural Language Processing
Other (specify)
Parallel, Distributed, and Cloud Computing
Quantum Information Science
Robotics
Scientific Computing
Social Computing
Software Engineering
Wired and Wireless Networking

ENGINEERING

Aeronautical and Aerospace Engineering
Agricultural Engineering
Artificial Intelligence
Bioengineering
Biomedical Engineering
Chemical Engineering
Civil Engineering
Computationally Intensive Research
Computer Engineering (including Networking)
Cybersecurity
Data Science
Electrical and Electronic Engineering
Energy and Power Engineering
Environmental and/or Ecological Engineering
Industrial Engineering & Operations Research
Machine Learning

Manufacturing Engineering
Materials Science & Engineering (including Polymers, Ceramics, Semiconductors)
Mechanical Engineering
Microwave Electromagnetics Engineering
Nuclear Engineering
Ocean Maritime Engineering
Optical Engineering
Other (specify)
Quantum Engineering
Quantum Information Engineering
Quantum Information Science
Robotics, Control, Automation
Systems Engineering
Wireless Engineering

GEOSCIENCES

Aeronomy
Artificial Intelligence
Arctic-Antarctic
Atmospheric Chemistry
Biogeochemistry
Biological Oceanography
Chemical Oceanography
Climate and Large-Scale Atmospheric Dynamics
Coastal Marine Science
Coastal Studies
Computationally Intensive Research
Earth System Science
Environmental Science
Geobiology
Geochemistry
Geochronology
Geodynamics
Geoinformatics
Geology
Geomorphology
Geophysics
Glaciology
Heliospheric Physics
Hydrology
Magnetospheric Physics
Marine Biology
Marine Ecology
Marine Geology and Geophysics
Ocean Technology (ROVs, AUVs, sensors)
Other (specify)
Paleoclimate
Paleontology and Paleobiology
Petrology
Physical and Dynamic Meteorology
Physical Oceanography
Quantum Information Science

Remote Sensing
Sea Ice
Sedimentary Geology
Solar Physics
Tectonics
Volcanology

LIFE SCIENCES

Artificial Intelligence
Biochemistry
Bioinformatics and Computational Biology
Biophysics
Cell Biology
Computationally Intensive Research
Developmental Biology
Ecology
Environmental Biology
Evolutionary Biology
Genetics
Genomics
Microbial Biology
Neurosciences
Organismal Biology
Other (specify)
Physiology
Proteomics
Quantum Information Science
Structural Biology
Systematics and Biodiversity
Systems and Molecular Biology

MATERIALS RESEARCH

Artificial Intelligence
Biomaterials
Ceramics
Chemistry of Materials
Computationally Intensive Research
Electronic Materials
Materials Theory
Metallic Materials
Other (specify)
Photonic Materials
Physics of Materials
Polymers
Quantum Information Science

MATHEMATICAL SCIENCES

Algebra, Number Theory, and Combinatorics
Analysis
Applied Mathematics
Artificial Intelligence

Biostatistics
Computational and Data-enabled Science
Computational Mathematics
Computational Statistics
Computationally Intensive Research
Geometric Analysis
Logic or Foundations of Mathematics
Mathematical Biology
Other (specify)
Probability
Quantum Information Science
Statistics
Topology

PHYSICS & ASTRONOMY

Artificial Intelligence
Astronomy and Astrophysics
Atomic, Molecular and Optical Physics
Computationally Intensive Research
Condensed Matter Physics
Nuclear Physics
Other (specify)
Particle Physics
Physics of Living Systems
Plasma Physics
Quantum Information Science
Solid State Physics
Theoretical Physics

PSYCHOLOGY

Artificial Intelligence
Cognitive Neuroscience
Cognitive Psychology
Comparative Psychology
Computational Psychology
Computationally Intensive Research
Developmental Psychology
Industrial/Organizational Psychology
Neuropsychology
Other (specify)
Perception and Psychophysics
Personality and Individual Differences
Physiological Psychology
Psycholinguistics
Quantitative Psychology
Quantum Information Science
Social/Affective Neuroscience
Social Psychology

SOCIAL SCIENCES

Anthropology, other (specify)
Archaeology
Artificial Intelligence
Biological Anthropology
Communications
Computationally Intensive Research
Cultural Anthropology

Cybersecurity
Decision Making and Risk Analysis
Economics
Geography
History and Philosophy of Science
International Relations
Law and Social Science
Linguistic Anthropology
Linguistics
Medical Anthropology
Other (specify)
Political Science
Public Policy
Quantum Information Science
Science Policy
Sociology
Urban and Regional Planning

STEM EDUCATION AND LEARNING RESEARCH

Artificial Intelligence
Computationally Intensive Research
Engineering Education
Mathematics Education
Other (specify)
Quantum Information Science
Science Education
Technology Education

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