Applying to the NSF Graduate Research Fellowship Program

National Science Foundation

Graduate Research Fellowship Program

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www.nsfgrfp.org

Graduate Research Fellowship Program
Division of Graduate Education
Directorate for Education and Human Resources

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NSF GRFP

Presentation overview:

- Program Information

- Eligibility Requirements

- GRFP Application

Official information in GRFP solicitation NSF 20-587 at nsfgrfp.org

GRFP Solicitation NSF 20-587

Provides the following information:

- Deadlines
- Program description
- Award information
- Eligibility requirements
- Application preparation
- Submission instructions
- Application review criteria

GRFP FAQs: NSF 20-114

nsfgrfp.org

Graduate Research Fellowship Program (GRFP)

PROGRAM SOLICITATION
NSF 20-587

REPLACES DOCUMENT(S):
NSF 19-590

National Science Foundation

Directorate for Biological Sciences

Directorate for Computer and Information Science and Engineering

Directorate for Education and Human Resources
    Division of Graduate Education

Directorate for Engineering

Directorate for Geosciences

Directorate for Mathematical and Physical Sciences

Directorate for Social, Behavioral and Economic Sciences

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 19, 2020

National Science Foundation

- Independent federal agency created in 1950
- Mission
  - To promote the progress of science
  - To advance the national health, prosperity, & welfare
  - To secure the national defense
- Funds ~20% of all federally supported basic research conducted by America's colleges and universities

GRFP was NSF's first program, and has supported 60,000+ graduate students since 1952

Graduate Research Fellows hail from every state and include 40+ Nobel Laureates

NSF GRFP Goals

The **OVERALL GOAL** of the Graduate Research Fellowship Program is to **recruit** individuals into Science, Technology, Engineering, and Mathematics (STEM) fields

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

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

NSF GRFP

- **Fellowship:** Individuals apply
- **NSF GRFP funding:** Awarded directly to Fellow's graduate institution for disbursement
- **Flexible:** Project, advisor, and graduate program
- **Unrestricted:** No service requirement after completion
- **Portable:** Use at any accredited, non-profit, US institution of higher education, on US campus, at which Fellow is **enrolled**

NSF GRFP

Success Rate*:

2010 - 2020: ~2,000 Fellowships awarded yearly

- 2017: ~13,200 Applications - ~15% success rate
- 2018: ~12,400 Applications - ~16% success rate
- 2019: ~12,200 Applications - ~16% success rate
- 2020: ~12,900 Applications - ~16% success rate

*Applications reviewed

NSF GRFP Benefits

- **Five Year Award – $138,000**
- Three years of support
  - $34,000 Annual Stipend
  - $12,000 Educational allowance directly to graduate institution in lieu of tuition and fees
- **Other NSF Opportunities**
  - INTERN – non-academic internship program
  - FASED Individuals with Disabilities support
  - Career Life Balance awards (family leave)

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Eligibility

NSF GRFP Eligibility Overview

- U.S. citizens, nationals, and permanent residents
- Early-career: undergrad & graduate students
- Pursuing research-based master's and/or doctoral degrees (no professional degrees)
- Science, Technology, Engineering, Mathematics (STEM) or STEM Education
- Full-time enrollment in graduate degree program at accredited, non-profit US institution of higher education
- NO foreign institutions

NSF GRFP Eligibility: Academic Levels

- **Level 1:** Undergraduate seniors and baccalaureates never enrolled in graduate degree program

- **Level 2:** First-year graduate students in *first* graduate degree program. Currently enrolled joint bachelor's-master's students who have completed 3 years in joint program

- **Level 3:** Second-year graduate students (no more than one academic year completed in *first* graduate degree program). Current first-year doctoral students who went directly into doctoral program after completing joint bachelor's-master's degree (and did not apply during joint degree program)

- **Level 4:** Returning graduate students with > 2-year interruption in graduate study; may have master's (no doctorates) or >1 academic year in graduate program; NOT ENROLLED in graduate program at application deadline

NSF GRFP Eligibility

What if I don't fit in one of those categories?

If you're not in one of those levels, you may not be eligible for GRFP

See Detailed Eligibility Requirements

GRFP Solicitation

nsfgrfp.org

How many times can I apply?

- **Level 1:** Undergraduate Seniors or baccalaureates never enrolled in graduate program
  - **<u>No restriction</u>** – can apply every year until enrolled in graduate degree program!
  - If awarded Fellowship, **<u>must enroll in eligible graduate degree program by Fall</u>** (See GRFP Solicitation for details)

How many times can I apply?

Graduate students can apply only ONCE.

Level 2: First-year graduate students in *first* graduate degree program. Currently enrolled joint bachelor's-master's students who have completed 3 years in joint program

Level 3: Second-year graduate students (no more than one academic year in *first* graduate degree program). Current first-year doctoral students who went directly into doctoral program after completing joint bachelor's-master's degree (and did not apply during joint program)

Level 4: Returning graduate students with >2-year interruption in graduate study; may have master's (no doctorates) or >1 academic year in graduate program; **NOT ENROLLED** in graduate program at application deadline
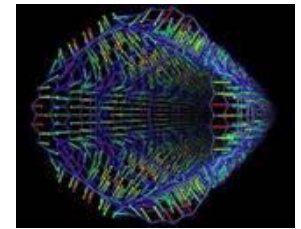
How often can I apply?

Only one application per person per annual competition

Eligible Fields of Study

- Chemistry
- Computer & Information Science/Engineering
- Engineering
- Geosciences
- Life Sciences
- Materials Research
- Mathematical Sciences
- Physics and Astronomy
- Psychology
- Social Sciences
- STEM Education

Eligible Sub-Fields of Study

- Each major field has numerous sub-fields:
- 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 Process
    - Computationally Intensive Research
    - Environmental Chemical Systems
    - Macromolecular, Supramolecular, and Nanochemistry
    - Quantum Information Science
    - Sustainable Chemistry

Full list for all Eligible Sub-Fields of Study in GRFP Solicitation
www.nsfgrfp.org

High Priority Research Areas

Although NSF will continue to fund outstanding Graduate Research Fellowships in **all areas of science and engineering supported by NSF**, in FY2021, GRFP will emphasize three high priority research areas in alignment with NSF goals. These areas are **Artificial Intelligence, Quantum Information Science,** and **Computationally Intensive Research**. Applications are encouraged in all disciplines supported by NSF that incorporate these high priority research areas.

High Priority Research Areas

- **GRFP will continue to fund fellowships in all areas of STEM supported by NSF.**

- **Review and selection process will remain the same.**

- **NSF is encouraging students to think creatively and consider these areas.**

High Priority Research Areas

What if my research doesn't incorporate these priority areas?

You do not have to select any priority area.

The review and selection process is the same for all applications.

High Priority Research Areas

How to indicate these areas in application:

Q: Is your research interdisciplinary?

- **Select Yes**

- **Choose your subfield**

- **Also choose**

  - **Artificial Intelligence**

  - **Quantum Information Science**

  - **Computationally Intensive Research**

Interdisciplinary Study?

What if my proposed research is interdisciplinary?

Q: What is your first major Field of Study?

Determine the application submission deadline, reviewer expertise.

See GRFP Program Description

nsfgrfp.org

INELIGIBLE Degree Programs

- Professional degree programs
  - E.g., MBA, MD, JD, DVM, DDS, Pharm. D
- Joint science-professional degree programs
  - E.g., MD/PhD, JD/PhD
- Community, Global, or Public Health (MPH)
- Counseling, Social Work (MSW)
- Education (except STEM education)
- Humanities (except history of science)

**See Detailed Eligibility Requirements
GRFP Solicitation NSF 20-587**

Ineligible Proposed Research

- Research with directly health-related goals
    - Etiology, diagnosis, or treatment of disease or disorder
    - Animal models of disease for drug development/testing
    - Epidemiology
    - Disease prevention
    - Public, community, global health
- Clinical research
    - Patient-oriented research
    - Epidemiological and behavioral studies
    - Outcomes research
    - Health services, standard of care, health policy
    - Research directly leading to clinical trials
- Applied research on plant pathology
    - Maximizing agricultural production
- Impacts on food safety

I don't see my major field of study listed

If your chosen major field of study isn't listed, it may not be eligible for GRFP

See detailed Field of Study information in the GRFP Solicitation

Can I choose "Other" and fill in a field or subfield?

Reviewer expertise will be in the Fields of Study listed in the GRFP Solicitation

There may not be reviewers with the expertise for your "**other**" field of study.

Consult an academic advisor to determine whether your chosen field could be aligned with one of the Eligible Fields of Study

Choose Major Field of Study Carefully!

- Your choice determines:
  - Expertise of the reviewers for your application
- If awarded a fellowship:
  - Discipline of graduate degree program – choice must match the broad discipline of your chosen major field of study
    - E.g., if you chose a Chemistry field, you can't enroll in Chemical Engineering

Check out the information at:

https://www.nsfgrfp.org/applicants/application_components/field_of_study

NSF GRFP Application

NSF GRFP Deadlines

Applications DUE:
<u>5 p.m. local time applicant mailing address</u>
(NSF receipt time stamp)

Oct 19: Life Sciences

Oct 20: CISE, Materials Research, Psychology, Social Sciences, STEM Education and Learning

Oct 21: Engineering

Oct 22: Chemistry, Geosciences, Math, Physics & Astronomy

No exceptions. No extensions. No materials accepted by mail or email.

Give yourself plenty of time to prepare and submit the application.

NSF GRFP Deadlines

If you require **accessibility accommodation**, please contact info@nsfgrfp.org at least four weeks before the application deadline to coordinate your institutional student services support with NSF support

First Step, Ask Yourself

- What's special, unique, distinctive, and/or impressive about you or your life story?

- What details of your life might help the reviewers better understand you or set you apart from other applicants?

- How did you become interested in this field and what have you learned about it (and about yourself) that has convinced you that you are well suited to this field?

First Step, Ask Yourself

- How did you learn about this field?

  - E.g. through classes, readings, seminars, work or other experiences, or conversations with people already in the field

- How have you capitalized on opportunities available to you?

- What reasons can you give for reviewers to be interested in your application?

- What impact have you had on your academic, local and the broader community?

NSF GRFP Complete Application

1) Personal Information, Education, Work/Research Experience, Proposed Major Field of Study, Honors, Awards, Publications

2) Personal, Relevant Background and Future Goals Statement (3-page PDF)

3) Graduate Research Statement (2-page PDF)

4) Transcripts (PDFs; mandatory)

5) Letters of reference (you may provide up to five reference letters; **2 mandatory**; **3 RECOMMENDED**)

Read GRFP Solicitation for detailed application instructions and requirements

NSF Merit Review Criteria

Two National Science Board-approved merit review criteria:

- Intellectual Merit
  How important is the proposed activity to advancing knowledge within its own field or across different fields?

- Broader Impacts
  How well does the proposed activity benefit society or advance desired societal outcomes?

Both criteria are given full consideration during review.

Intellectual Merit

Your potential to advance knowledge

- Demonstrated intellectual ability (grades, curricula, awards, publications, presentations, etc.)
- Other evidence of your potential, such as ability to:
  - Plan and conduct research
  - Work as a member of a team as well as independently
  - Interpret and communicate research
  - Take initiative, solve problems, persist.

The potential of your approach to your major field of study and your Research Plan to advance knowledge.

Evidence of Intellectual Merit can be found in all parts of the application: Personal Statement, Research Plan, letters,

experiences, awards, achievements, and transcripts.

Note that _your_ intellectual merit is
different from _your research's_ intellectual merit

Broader Impacts

Potential impact of the <u>individual</u> (you!) on society

Potential impact of your <u>research</u> on society; why it's important

Societal benefits may include, but are not limited to:

- Increasing participation of underrepresented groups, women, students with disabilities, veterans
- Outreach: Mentoring; improving STEM education in schools
- Increasing public scientific literacy; increased public engagement with STEM
- Community outreach: science clubs, radio, TV, newspapers, blogs
- Potential to impact a diverse, globally competitive workforce
- Increasing collaboration between academia, industry, others

Evidence of <u>Broader Impacts</u> can be in all parts of the application: Personal Statement, Research Plan, letters, experiences, awards, achievements

Comprehensive Review

Applications are reviewed:

- Using a comprehensive, holistic approach, giving balanced consideration to all components of the application
  - including the educational and research record, leadership, outreach, service activities, future plans, individual competencies, experiences, and other attributes
- To assess <u>demonstrated potential</u> for significant achievement in STEM

Preparing a Competitive GRFP Application

Personal Statement

Tell your story; demonstrate your potential for STEM research:

- Experiences (professional and personal) that contributed to your motivation and preparation for pursuing a STEM career
- Previous research/industrial/professional experiences
  - What was the project, what was your role?
  - How did you become involved? Where was it done?
  - Why was this project worth doing? What have you learned?
  - What was your contribution to the project?
  - How did your part of the project fit into the whole?
  - Any advanced course work?
- Career aspirations and future goals
  - How have your experiences shaped your goals?

Clearly address NSF's Merit Review Criteria – Intellectual Merit and Broader Impacts – <u>under separate headings</u>.

Preparing a Competitive GRFP Application

Research Statement

- Describe your proposed research plan:
  - Communicate your research idea and approach
  - Explain your research plan and methods
  - What do you expect to learn? How will you know if the project is successful?
  - What would you do next?
- Keep in mind:
  - Avoid jargon
  - Communicate clearly for non-specialists
  - Make your contributions clear

Clearly address NSF's Merit Review Criteria – Intellectual Merit and Broader Impacts – under separate headings

Follow formatting instructions <u>EXACTLY</u> as published in the GRFP Solicitation

Applications that don't comply with

format requirements will not be accepted by the application module

Transcripts

- All applicants **must submit bachelor's degree transcript**
- Transcripts are **<u>required</u>** for all degree-programs
- Transcripts can be included for all institutions listed
- Graduate transcripts for all graduate degree enrollment
  - 1st year grad students – if no graduate transcript available, upload class schedule or enrollment verification
- Official or unofficial transcripts accepted
  - Must meet requirements described in GRFP solicitation (**PDFs only, no links**)

Applications will not be accepted without a transcript

Reference Letters

GRFP letters differ from regular graduate school letters

- Make sure your reference writers know about GRFP and NSF's Intellectual Merit and Broader Impacts criteria
- Ask if they think they know you well enough to write a strong letter
- Discuss with them why you think you're a good candidate for GRFP (show them your statements before you apply).

- **For reference letter writers:**
  - GREs are not part of the application
  - A strong letter can say things that students wouldn't say about themselves
  - Do not overshadow the student if you describe their research

Reference Letters

- **THREE (3) reference letters are STRONGLY RECOMMENDED**

- Two (2) reference letters are **MANDATORY**

- List and rank up to 5 reference letter writers
    - Top 3 will be used

- Select your reference letter writers carefully

    - Familiarity with you as a person is important

    - Share personal and research statements with them

- **View Your Application Package Status** in the GRFP site to monitor letter submission

No exceptions or extensions for Reference Letter deadline

Reference Letters

Reference Letter Deadline

NSF Receipt Time Stamp BEFORE

October 30, 2020, 4PM Eastern Time

As your reference letter writers to submit EARLY!

Potentially 40,000 individuals submit reference letters.

No exceptions or extensions for Reference Letter deadline.

Application Review Process

- Your application is reviewed by disciplinary and interdisciplinary STEM experts

- Applications are assigned to reviewers based on **your chosen** Major Field of Study

  - Select the Major Field of Study most closely aligned with your proposed graduate program of study

- Prepare your statements with your audience in mind

  - Reviewers have broad disciplinary expertise but may not be specialists

Choose Field of Study Carefully!

Your choice determines:

- Expertise of the reviewers for your application
- Discipline of your graduate degree program if awarded fellowship
  - Choice must match the broad discipline of your chosen major field of study
  - E.g., if you chose a Chemistry field, you can't enroll in Chemical Engineering

Check out the information at:
https://www.nsfgrfp.org/applicants/application_components/field_of_study

Prepare a competitive application

START EARLY!

- Read the current Solicitation ***and read it again!***
- See tips & FAQs at NSF GRFP website (www.nsfgrfp.org)
- Clearly address NSF Merit Review Criteria
- Describe your honors, experiences, presentations, any publications (etc.) clearly for the reviewers
- Your statements should be interesting and clear
  - Ask colleagues to read and comment on drafts
- Share your application materials and the Merit Review Criteria with your reference letter writers
- Select, contact, and **confirm** your reference letter writers
- **View Your Application Package Status** on GRFP site frequently

Click SUBMIT!

Remember to hit SUBMIT after you complete your application. Unsubmitted applications are considered incomplete and will not be reviewed

You will receive a confirmation email after submission

APPLY EARLY!

Don't risk wasting hours of work because you waited to the last minute to submit your application.

No exceptions or extensions for the application and reference letter deadlines

NSF GRFP Resources

- GRFP Website: www.nsfgrfp.org
  - Includes tips for applying, FAQs
- NSF GRFP Website: www.nsf.gov/grfp
  - Solicitation & FAQs
- Apply on Research.gov
  www.research.gov/grfp/Login.do

NSF GRFP

Read the GRFP Solicitation!
https://nsfgrfp.org/

Questions?
info@nsfgrfp.org
866-673-4737

(M-F, 8:30-5:30 PM ET)