National Science Foundation

Vision: “A nation that is the global leader in research and innovation.”

Mission: “To promote the progress of science to advance the national health, prosperity, and welfare; to secure the national defense; and for other purposes.”
Strategic Plan for Fiscal Years (FY) 2018-2022 has three goals:

1. Expand knowledge in science, engineering, and learning
2. Advance the capability of the Nation to meet current and future challenges
3. Enhance NSF's performance of its mission

So, what does NSF fund?

NSF supports basic research and people to create knowledge that transforms the future – includes support for all fields of fundamental science and engineering, except for medical sciences.
National Science Foundation

Structure of the National Science Foundation

• National Science Board – 24 members
• Director – Sethuraman Panchanathan
• Seven Directorates and 32 Divisions
  1. Biological Sciences (BIO)
  2. Computer and Information Science and Engineering (CISE)
  3. Engineering (ENG)
  4. GeoSciences (GEO)
  5. Mathematical and Physical Sciences (MPS)
  6. Social, Behavioral and Economic Sciences (SBE)
  7. Education and Human Resources (EHR)
National Science Foundation

The NSF fulfills its mission by issuing limited-term grants

- 12,000 new awards per year
- Average duration of three years
- Fund specific research proposals that have been judged the most promising by a rigorous and objective merit-review system

Funding rate – also known as “success rate”

Calculated by dividing the number of new, competitively reviewed awards made in a fiscal year by the number of competitive awards and declines made in that fiscal year. Varies by Directorate and Division.
NSF Overall Funding Rates

NSF Proposals and Awards

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Proposals</th>
<th>Number of Awards</th>
</tr>
</thead>
<tbody>
<tr>
<td>2021</td>
<td>43,615</td>
<td>11,347</td>
</tr>
<tr>
<td>2020</td>
<td>42,726</td>
<td>12,171</td>
</tr>
</tbody>
</table>

2021: 26% 2020: 28%
NSF Funding Rates by Research Area

2021 Funding Rate

BIO = Biological Sciences
CSE = Computer Science and Engineering
EHR = Education and Human Resources
ENG = Engineering
GEO = Geosciences
MPS = Mathematical and Physical Sciences
O/D = Integrative Activities and International Science and Engineering
SBE = Social, Behavioral and Economic Sciences
Funding Rates for UT Tyler Colleges

133 NSF Proposals Submitted FY 2015-FY 2019
Overall Funding Rate: 17%

<table>
<thead>
<tr>
<th>College</th>
<th>No. of Proposals</th>
<th>Funding Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS</td>
<td>66</td>
<td>17</td>
</tr>
<tr>
<td>CEP</td>
<td>50</td>
<td>4</td>
</tr>
<tr>
<td>CNHS</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>ENG</td>
<td>45</td>
<td>13</td>
</tr>
<tr>
<td>COP</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>COB</td>
<td>11</td>
<td>27</td>
</tr>
</tbody>
</table>

No. of Proposals: Blue Bar; Funding Rate (%): Orange Bar
NSF Funding Opportunities

https://beta.nsf.gov/funding/opportunities

Funding Search

631 results

This Funding Search contains only current opportunities. Archived funding opportunities are hosted at the legacy NSF website.

Please let us know what you think of the new search by completing an anonymous three-question survey, or by emailing us at beta-nsf-feedback@nsf.gov

Filter:

- Limited Submissions
- Award Type
- Advancing Diversity
- Directorate
- Division
- Education Level

Show only NSF-wide/cross-directorate opportunities (75)

Sort: New opportunities
NSF Funding Opportunities

https://beta.nsf.gov/funding/opportunities

**Filter:**

<table>
<thead>
<tr>
<th>Limited Submissions</th>
<th>Directorate</th>
<th>Award Type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Standard Grant (273)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Continuing Grant (235)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cooperative Agreement (69)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Supplemental Funding (34)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fellowship (10)</td>
</tr>
</tbody>
</table>

**Advancing Diversity**

<table>
<thead>
<tr>
<th>Education Level</th>
</tr>
</thead>
</table>

**Sort:**

| New opportunities |
NSF Funding Opportunities

https://beta.nsf.gov/funding/opportunities
NSF Funding Opportunities

Funding Search

142 filtered results

This Funding Search contains only current opportunities. Archived funding opportunities are hosted at the legacy NSF website.

Please let us know what you think of the new search by completing an anonymous three-question survey, or by emailing us at beta-nsf-feedback@nsf.gov

Filter:

Directorate: Directorate for Biological Sciences (BIO)

Limited Submissions  Award Type  Advancing Diversity

Directorate  Division  Education Level

Show only NSF-wide/cross-directorate opportunities (39)
NSF Funding Opportunities

Program
Major Research Instrumentation Program (MRI)

The Major Research Instrumentation (MRI) Program serves to increase access to multi-user scientific and engineering instrumentation for research and research training in our Nation’s institutions of higher education and not-for-profit scientific/engineering research organizations. An MRI award supports the acquisition or...

View Guidelines 18-513
Posted November 6, 2017

NSF 18-513 Major Research Instrumentation Program (MRI)
An MRI proposal may request up to $4 million for either acquisition or development of a research instrument.

- Track 1: Track 1 MRI proposals are those that request funds from NSF greater than or equal to $100,000 and less than $1,000,000.
- Track 2: Track 2 MRI proposals are those that request funds from NSF greater than or equal to $1,000,000 up to and including $4,000,000.

- Limit on number of proposals per organization: Three
- Cost sharing is required for Ph.D. – granting institutions of higher education – amount is precisely 30%
**NSF 18-513 Major Research Instrumentation Program (MRI)**

<table>
<thead>
<tr>
<th>NSF Seq</th>
<th>Division Of Materials Research</th>
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</thead>
<tbody>
<tr>
<td>Award by</td>
<td>BOARD OF TRUSTEES OF ILLINOIS STATE UNIVERSITY</td>
</tr>
<tr>
<td>Initial Amendment Dates</td>
<td>August 24, 2021</td>
</tr>
<tr>
<td>Latest Amendment Dates</td>
<td>August 24, 2021</td>
</tr>
<tr>
<td>Award Number</td>
<td>2116612</td>
</tr>
<tr>
<td>Award Instrument</td>
<td>Standard Grant</td>
</tr>
<tr>
<td>Program Manager</td>
<td>Gabriel Tocama, <a href="mailto:glew@nsf.gov">glew@nsf.gov</a> (703)292-4935</td>
</tr>
<tr>
<td>DMR Division Of Materials Research</td>
<td></td>
</tr>
<tr>
<td>NMS Direct For Mathematical &amp; Physical Sciences</td>
<td></td>
</tr>
<tr>
<td>Start Date</td>
<td>September 1, 2021</td>
</tr>
<tr>
<td>End Date</td>
<td>August 21, 2024 (Estimated)</td>
</tr>
<tr>
<td>Total Intended Award Amount</td>
<td>$403,900.00</td>
</tr>
<tr>
<td>Estimated Award Amount to Date</td>
<td>$402,900.00</td>
</tr>
<tr>
<td>Funds Obligated to Date</td>
<td>PY 2021 = $403,900.00</td>
</tr>
</tbody>
</table>

**History of Investigator**
- Mabua Biase (Principal Investigator)
- mabua@ilstu.edu
- Jian-Yang Kim (Co-Principal Investigator)
- Tenley Banik (Co-Principal Investigator)
- Ullas Rana (Co-Principal Investigator)
- Jian-Dirk Dai (Co-Principal Investigator)
Program
Mid-Career Advancement (MCA)

An academic career often does not provide the uninterrupted stretches of time necessary for acquiring and building new skills to enhance and advance one’s research program. Mid-career scientists in particular are at a critical career stage where they need to...

View Guidelines 21-516
Posted October 19, 2020

NSF 21-516 Mid-Career Advancement (MCA)
NSF Funding Opportunities

Program
Innovations in Graduate Education Program

The Innovations in Graduate Education (IGE) program is designed to encourage the development and implementation of bold, new, and potentially transformative approaches to STEM graduate education training. The program seeks proposals that explore ways for graduate students in research-based master's...

View Guidelines 20-595
Posted August 3, 2020

NSF 20-595 Innovations in Graduate Education Program
NSF Funding Opportunities

Program

ADVANCE: Organizational Change for Gender Equity in STEM Academic Professions (ADVANCE)

The NSF ADVANCE program contributes to the National Science Foundation's goal of a more diverse and capable science and engineering workforce. In this solicitation, the NSF ADVANCE program seeks to build on prior NSF ADVANCE work and other research and...

View Guidelines 20-554
Posted March 6, 2020

NSF 20-554 ADVANCE

Preliminary Proposal Target Date
April 28, 2022

Additional Information

- Letter of Intent Required
- Preliminary Proposal Required
- Additional Upcoming Deadlines
NSF Funding Opportunities

Program

Research Experiences for Undergraduates (REU)

The Research Experiences for Undergraduates (REU) program supports active research participation by undergraduate students in any of the areas of research funded by the National Science Foundation. REU projects involve students in meaningful ways in ongoing research programs or in...

View Guidelines 19-582

Posted May 16, 2019

NSF 20-525 Research Experiences for Undergraduates (REU)
NSF Funding Opportunities

**Facilitating Research at Primarily Undergraduate Institutions:**

The Research in Undergraduate Institutions (RUI) and Research Opportunity Awards (ROA) funding opportunities support research by faculty members at predominantly undergraduate institutions (PUIs). RUI proposals support PUI faculty in research that engages them in their professional field(s), builds capacity for...

**View Guidelines 14-579**

*Posted July 1, 2014*

[NSF 14-579 Facilitating Research at Primarily Undergraduate Institutions](#)
NSF Funding Opportunities

Program
Faculty Early Career Development Program (CAREER)

CAREER: The Faculty Early Career Development (CAREER) Program is a Foundation-wide activity that offers the National Science Foundation's most prestigious awards in support of early-career faculty who have the potential to serve as academic role models in research and education...

View Guidelines 20-525
Posted December 5, 2019

NSF 20-525 CAREER
NSF Proposal and Award Policies and Procedures Guide

Follow this manual except when the funding opportunity tells you to do something differently.

Proposals are submitted using Research.gov.
Sections of the Proposal

a. Cover Sheet
b. Project Summary
c. Table of Contents
d. Project Description
e. References Cited
f. Biographical Sketch(es)
g. Budget and Budget Justification
h. Current and Pending Support
i. Facilities, Equipment and Other Resources
Sections of the Proposal

j. Special Information and Supplementary Documentation
   • Data Management Plan
   • Postdoctoral Mentoring Plan (if applicable)

k. Single Copy Documents
Project Summary & Table of Contents

- Project Summary cannot be more than one page in length
- Project Summary Contents
  - **Overview** – includes a description of the activity that would result if the proposal was funded and a statement of objectives and methods to be employed
  - Statement on **Intellectual Merit** – should describe the potential of the project to advance knowledge
  - Statement on **Broader Impacts** – should describe the potential of the proposed activity to benefit society and contribute to the achievement of specific, desired societal outcomes
- Table of Contents is automatically generated for the proposal and cannot be edited.
Project Description

- Limited to 15 pages
- Provide a clear statement of the work to be undertaken and must include
  - Objectives for the period of the proposed work and expected significance
  - The relationship of this work to the present state of knowledge in the field, as well as to work in progress by the PI under other support
- Section labeled “Broader Impacts”
  - Discussion of the broader impacts of the proposed activities
  - Broader impacts may be accomplished
    - Through the research itself
    - Through activities directly related to specific research projects
    - Through activities that are supported by, but are complementary to the project
Project Description

• Overview and Objectives (4 paragraphs)
• Significance – Intellectual Merit (1 paragraph)
• Background – Literature review that supports the overview and objectives section and plan of work
• Plan of Work
  • Describe the research design/plan/project activities
  • State how the PI, team, or organization is qualified to conduct the proposed activities
  • State if the resources available to the PI are adequate to carry out the proposed activities
• Broader Impacts
Proposal Contents continued

- **Biosketches**
  - Page limit increased to 3 pages
  - Must use NSF approved format
  - SciENcv

- **Budget Justification**
  - Limited to 5 pages
  - Go beyond providing information – use persuasion

- **Current and Pending Support** – use NSF approved format

- **Facilities, Equipment, and Other Resources**
  - Include narrative about the institution, college, and department resources available
  - Include support from unfunded collaborators in this section
Merit Review

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.
Merit Review

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?
In accordance with Chapter 12.6F, the Division of Grants and Agreements (DGA) or the Division of Acquisition and Cooperative Support (DACS) may decline a proposal recommended for award after conducting a review of business, financial, and policy implications.
Project Idea

Confirming fundability of a project idea

- Develop a one- to two-page concept paper
- Ask the Office of Research and Scholarship for a template to develop your concept paper: 903-565-5858 or research@uttyler.edu.
- Ask colleagues to provide feedback on concept paper
- Ask the NSF program officer to provide feedback on concept paper

Dear Dr. (program director/officer name):

I am interested in submitting a grant proposal to funding opportunity (number and name of funding opportunity) in which your program participates. I have attached a concept paper about my proposed research project. I would appreciate it if you would review it and provide me with feedback about how I can maximize my proposed project’s relevance to your program’s funding priorities. If you prefer that I contact another program officer or if I can answer any questions about my research, please let me know. Thank you for your time and I look forward to hearing back from you.

Sincerely,

Your name
Any NSF proposal that includes education or training of students should include a well-developed evaluation plan for that component. Resources:

- [Writing Research and Evaluation Plans for NSF Grants: How are they similar and different?](#)
- [The 2010 User-Friendly Handbook for Project Evaluation](#)
- [Western Michigan University Evaluation Checklists](#)
- [Kellogg Foundation Logic Model Development Guide](#)
- [Better Evaluation: Develop programme theory - theory of change](#)
NSF Proposal Fatal Flaws

#10  Inflate the budget to allow for negotiations
#9   Provide a template letter of commitment for your (genuine) supporters to use
#8   Assume your past accomplishments are well known
#7   Assume a project website is sufficient for dissemination
#6   “Evaluation will be ongoing and consist of a variety of methods”
NSF Proposal Fatal Flaws

#5 Assume the program guidelines have not changed; or better yet, ignore them!

#4 Don’t check your spelling, nor you’re grammar

#3 Substitute flowery rhetoric for good examples

#2 Assume page limits and font size restrictions are not enforced

#1 Assume deadlines are not enforced
The **Office of Research and Scholarship** has templates to help you develop the required proposal pieces.

Kay Jenkins | Grants & Contracts Specialist  
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kjenkins@uttyler.edu

Dr. Carla Reichard | Assistant Director  
903-565-5670  
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Panda Powell | Director  
903-877-7392  
Panda.Powell@uthct.edu