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THE UNIVERSITY OF TEXAS AT TYLER

National Science Foundation

Office of Research, Scholarship, and Sponsored Programs

November 29, 2022

The National Science Foundation (NSF) is an independent Federal agency created by Congress in 1950 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 approximately 3,000 institutions of higher education, K-12 school systems, businesses, informal science organizations and other research organizations throughout the U.S. The Foundation accounts for about one-fourth of Federal support to academic institutions for basic research.

The National Science Foundation is made up of seven directorates and two offices that support science and engineering research and education.

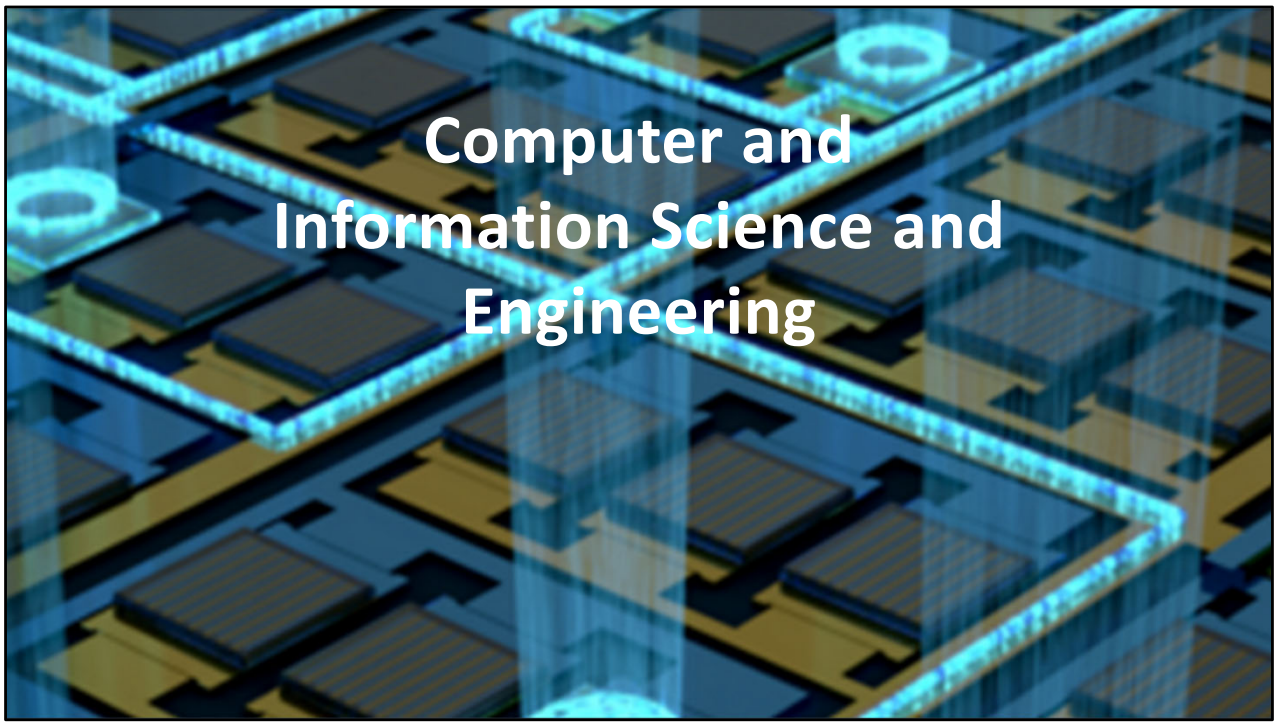
https://www.nsf.gov/about/research_areas.jsp

The Biological Sciences (BIO) Directorate supports research to advance understanding of the principles and mechanisms governing life. Research studies extend across systems that encompass biological molecules, cells, tissues, organs, organisms, populations, communities, and ecosystems up to and including the global biosphere.

The directorate is organized into five divisions:

1. Biological Infrastructure
2. Environmental Biology
3. Integrative Organismal Systems
4. Molecular and Cellular Biosciences
5. Emerging Frontiers

https://www.nsf.gov/dir/index.jsp?org=BIO



The Directorate for Computer and Information Science Engineering (CISE) supports investigator-initiated research and education in all areas of computer and information science and engineering, fosters broad interdisciplinary collaboration, helps develop and maintain cutting-edge national cyberinfrastructure for research and education, and contributes to the development of a computer and information technology workforce with skills necessary for success in the increasingly competitive global market.

The directorate is organized into five units:

1. Office of the Assistant Director
2. Office of Advanced Cyberinfrastructure (OAC)
3. Division of Computing and Communication Foundations (CCF)
4. Division of Computer and Network Systems (CNS)
5. Division of Information and Intelligent Systems (IIS)

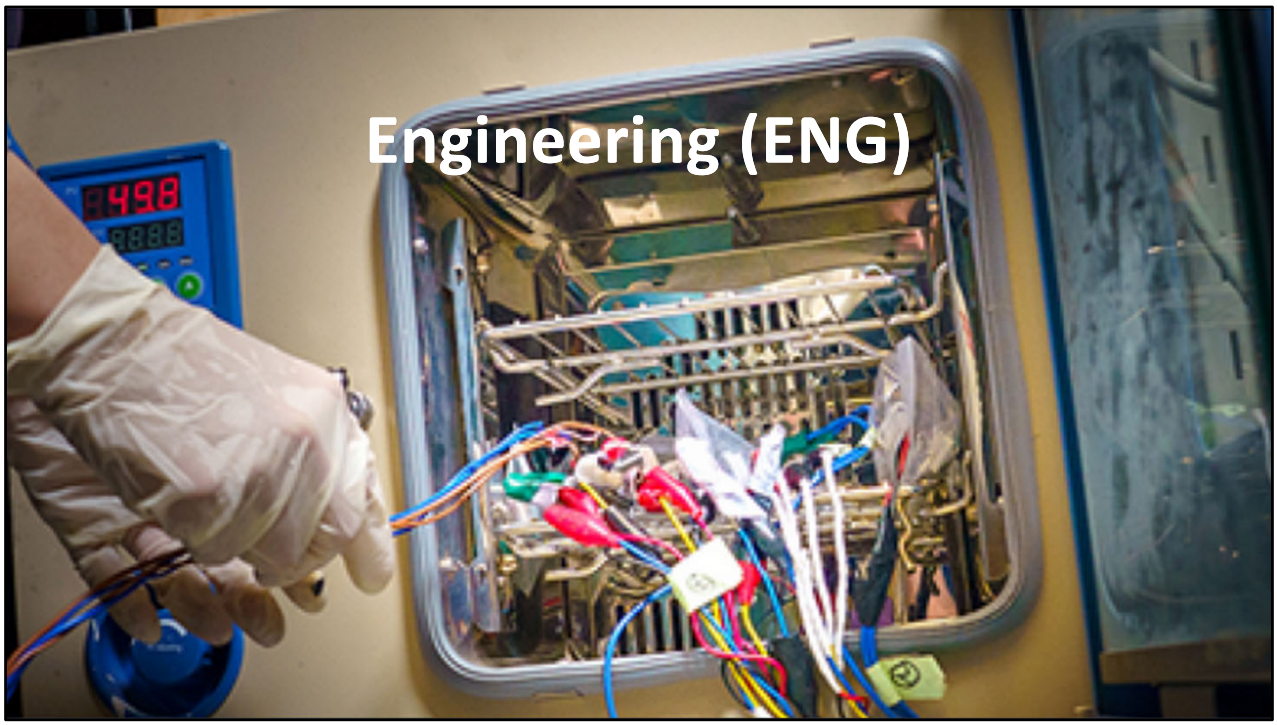
https://www.nsf.gov/cise/about.jsp

The Directorate STEM Education (EDU) works to develop a well-informed citizenry and a diverse and capable workforce of scientists, technicians, engineers, mathematicians and educators.

The directorate is organized into four divisions:

1. Division of Equity for Excellence in STEM (EDU/EES)
2. Division of Graduate Education (EDU/DGE)
3. Division of Research on Learning in Formal and Informal Settings (EDU/DRL)
4. Division of Undergraduate Education (EDU/DUE)

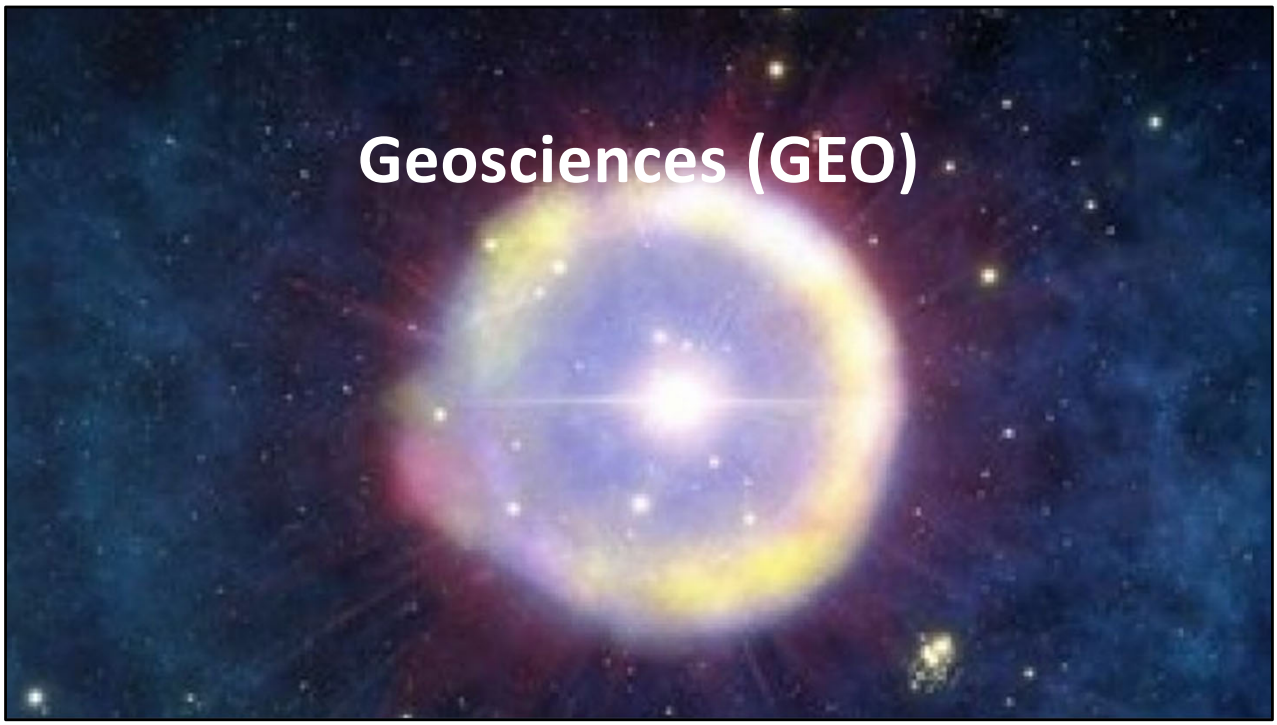
https://beta.nsf.gov/edu



The Directorate for Engineering is organized into five divisions:

1. Chemical, Bioengineering, Environmental and Transport Systems (CBET)
2. Civil, Mechanical and Manufacturing Innovation (CMMI)
3. Electrical, Communications and Cyber Systems (ECCS)
4. Engineering Education and Centers (EEC)
5. Emerging Frontiers and Multidisciplinary Activities (EFMA)

https://www.nsf.gov/dir/index.jsp?org=ENG

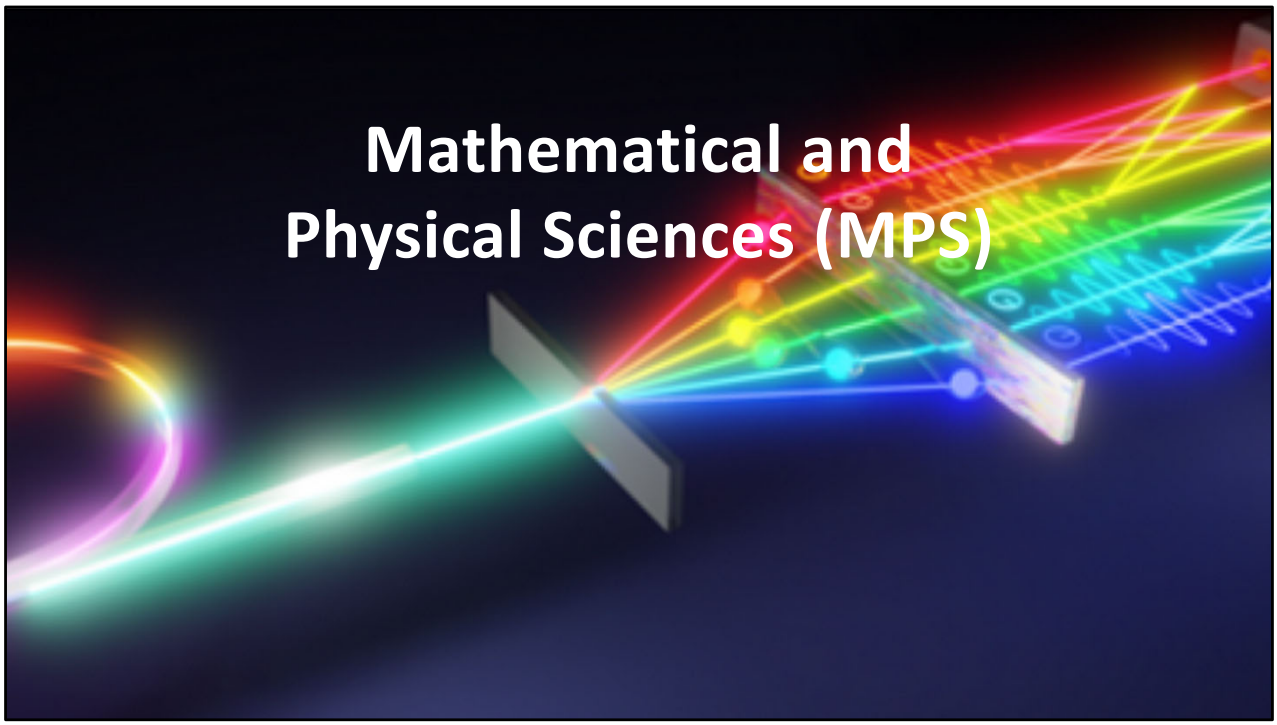


The Directorate for Geosciences supports groundbreaking discoveries of the products and processes of the earth, ocean, and atmosphere systems.

The directorate is organized into four divisions:

1. Atmospheric and Geospace Sciences (AGS)
2. Earth Sciences (EAR)
3. Ocean Sciences (OCE)
4. Polar Programs (OPP)

https://www.nsf.gov/geo/about.jsp



The Directorate Mathematical & Physical Sciences Divisions support both disciplinary and interdisciplinary activities and partner with each other and with other NSF Directorates in order to effectively encourage basic research across the scientific disciplines.

The directorate is five divisions and one office:

1. Astronomical Sciences (AST)
2. Chemistry (CHE)
3. Materials Research (DMR)
4. Mathematical Sciences (DMS)
5. Physics (PHY)
6. Office of Multidisciplinary Activities (OMA)

https://www.nsf.gov/cise/about.jsp

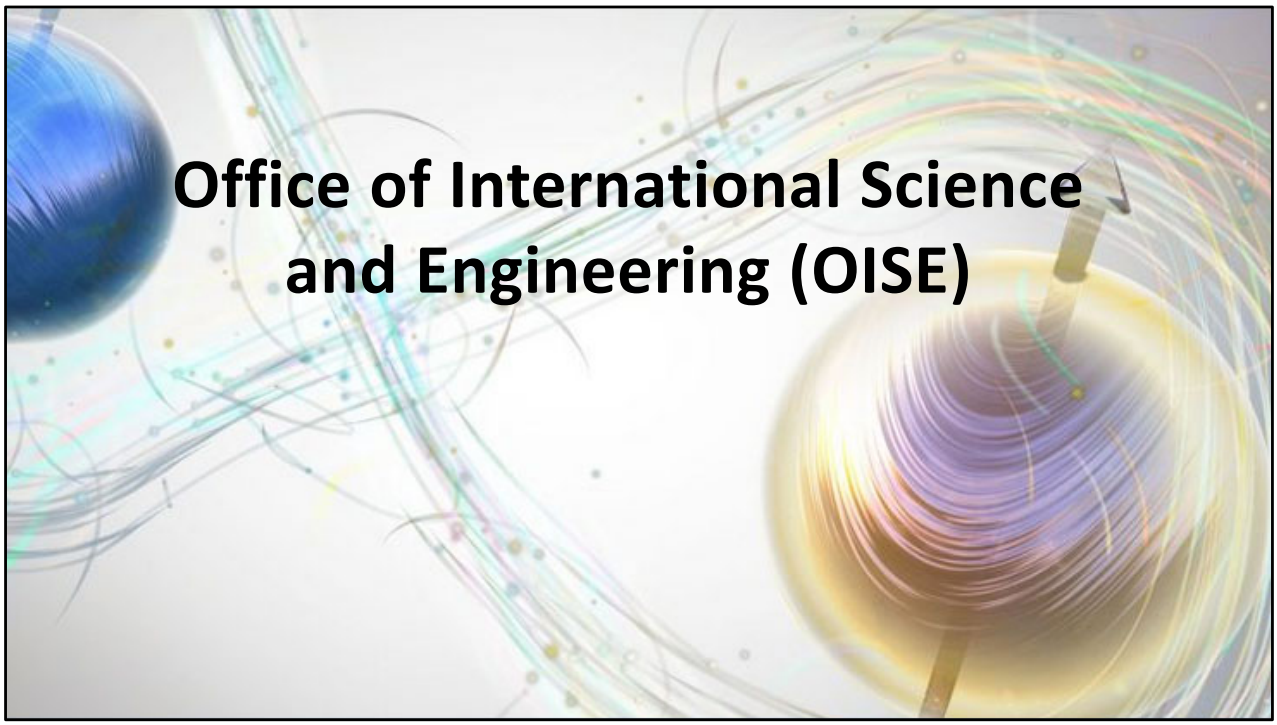
The Office of Integrative Activities works to break down disciplinary barriers in STEM: science, technology, engineering and mathematics.
It works across disciplinary boundaries to lead and coordinate strategic programs and opportunities that:

- Advance interdisciplinary research and innovation across the U.S.
- Develop critical infrastructure for the nation's STEM enterprise.
- Develop a diverse and engaged next generation of scientists and engineers.

It is organized into three sections:

1. Evaluation and Assessment Capability (OIA/EAC)
2. Integrative Activities (OIA/IA)
3. Established Program to Stimulate Competitive Research (OIA/EPSCoR)

https://beta.nsf.gov/od/oia



OISE is the NSF focal point for international science and engineering activities both inside and outside NSF. OISE focuses on three activities: (1) promoting the development of a globally competent U.S. workforce, (2) facilitating and supporting international partnerships and networks to leverage NSF and foreign resources, and (3) providing opportunities for U.S. leadership to shape the global science and engineering agenda.

https://www.nsf.gov/od/oise/about.jsp

The Directorate for Social, Behavioral, and Economic (SBE) Sciences supports basic research on people and society. The SBE sciences focus on human behavior and social organizations and how social, economic, political, cultural, and environmental forces affect the lives of people from birth to old age and how people in turn shape those forces.

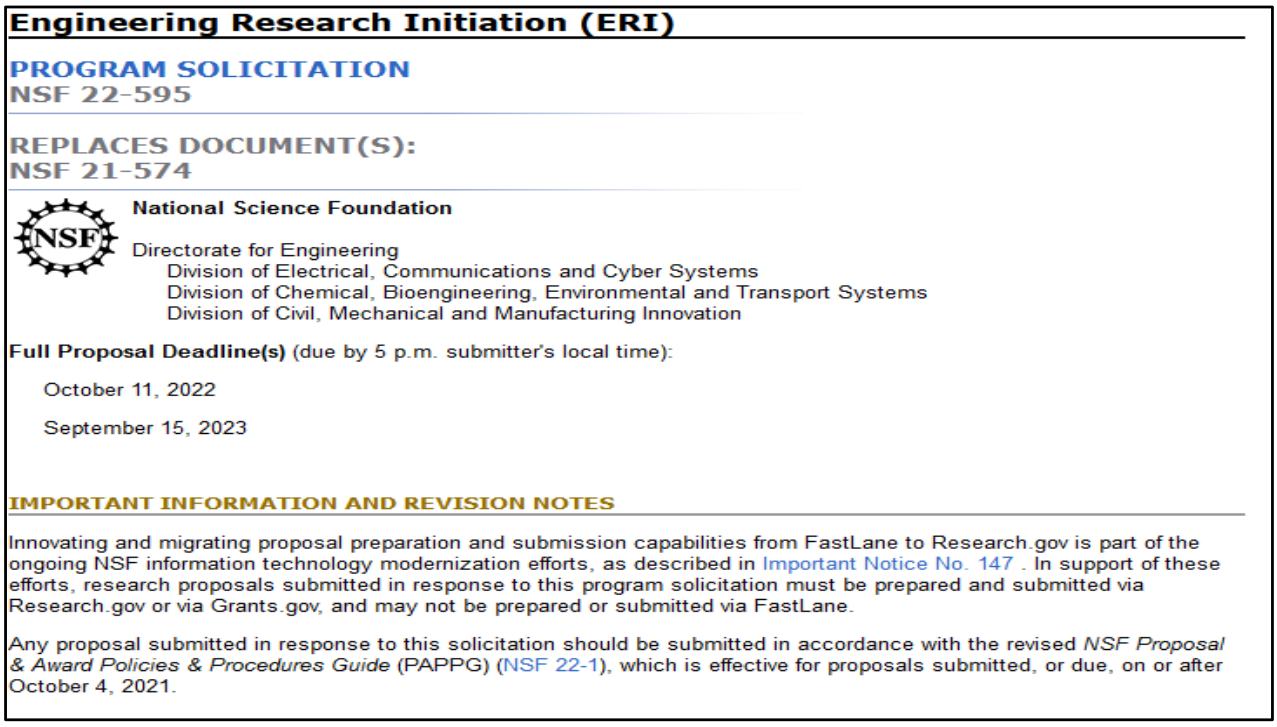
The directorate is organized into four divisions:

1. Division of Behavioral and Cognitive Science (BCS)
2. Division of National Center for Science and Engineering Statistics (NCSES)
3. Division of Social and Economic Sciences (SES)
4. Division of SBE Office of Multidisciplinary Activities (SMA)

https://www.nsf.gov/funding/programs.jsp?org=SBE

Categories of Funding Opportunities

1. **Program Descriptions** – are broad, general descriptions of programs and activities in the NSF Directorates/Offices and Divisions. They are posted on the directorate webpages to encourage submission of proposals in specific areas of interest to NSF.
2. **Program Announcements** – are formal publications that announce NSF programs.
3. **Program Solicitations** – refer to formal publications that are generally more focused than program announcements, and normally apply for a limited period of time. They are used when the funding opportunity has one or more features that do not follow the NSF Proposal and Award Policies and Procedures Guide.
4. **Dear Colleague Letters** provide general information to the community, clarify or amend an existing policy or document, or inform the NSF propose community about upcoming opportunities or special competitions for supplements to existing awards.



Engineering Research Initiation (ERI)

PROGRAM SOLICITATION
NSF 22-595

REPLACES DOCUMENT(S):
NSF 21-574

National Science Foundation

Directorate for Engineering
Division of Electrical, Communications and Cyber Systems
Division of Chemical, Bioengineering, Environmental and Transport Systems
Division of Civil, Mechanical and Manufacturing Innovation

Full Proposal Deadline(s) (due by 5 p.m. submitter's local time):

October 11, 2022

September 15, 2023

IMPORTANT INFORMATION AND REVISION NOTES

Innovating and migrating proposal preparation and submission capabilities from FastLane to Research.gov is part of the ongoing NSF information technology modernization efforts, as described in Important Notice No. 147 . In support of these efforts, research proposals submitted in response to this program solicitation must be prepared and submitted via Research.gov or via Grants.gov, and may not be prepared or submitted via FastLane.

Any proposal submitted in response to this solicitation should be submitted in accordance with the revised *NSF Proposal & Award Policies & Procedures Guide* (PAPPG) (NSF 22-1), which is effective for proposals submitted, or due, on or after October 4, 2021.

An example of a Program Solicitation is the Engineering Research Initiation.

- It has special eligibility requirements for the principal investigator.
- It also has additional solicitation specific review criteria.

Notice also, that only one directorate, the Directorate for Engineering, is participating in this solicitation.

The NSF Proposal and Award Policies and Procedures Guide is made up of two parts:

1. Part I sets forth NSF's proposal preparation and submission guidelines.
2. Part II sets forth NSF guidance regarding the award, administration, and monitoring of grants and cooperative agreements.

By submitting a proposal, the university is agreeing to the terms and conditions set forth in Part II if funding is awarded for the proposal. For that reason, only the AOR can submit the proposal.

https://www.nsf.gov/publications/pub_summ.jsp?ods_key=papp

NSF Full Proposal

A full proposal should present:

1. objectives and significance of the proposed work
2. suitability of the methods to be employed
3. qualifications of the investigator and organization
4. effect of the activity on the infrastructure of science engineering and education, if applicable
5. amount of funding required

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A full proposal should present
1. objectives and scientific, engineering, or educational significance of the proposed work
2. suitability of the methods to be employed
3. qualifications of the investigator and the grantee organization
4. effect of the activity on the infrastructure of science, engineering and education, if applicable
5. amount of funding required

Full Proposal Basic Components

1. Project Summary – one page
2. Project Description
   a. Usually, 15 pages for Research proposals
   b. Must contain separate section labeled “Broader Impacts”
3. References Cited
4. Biographical Sketches

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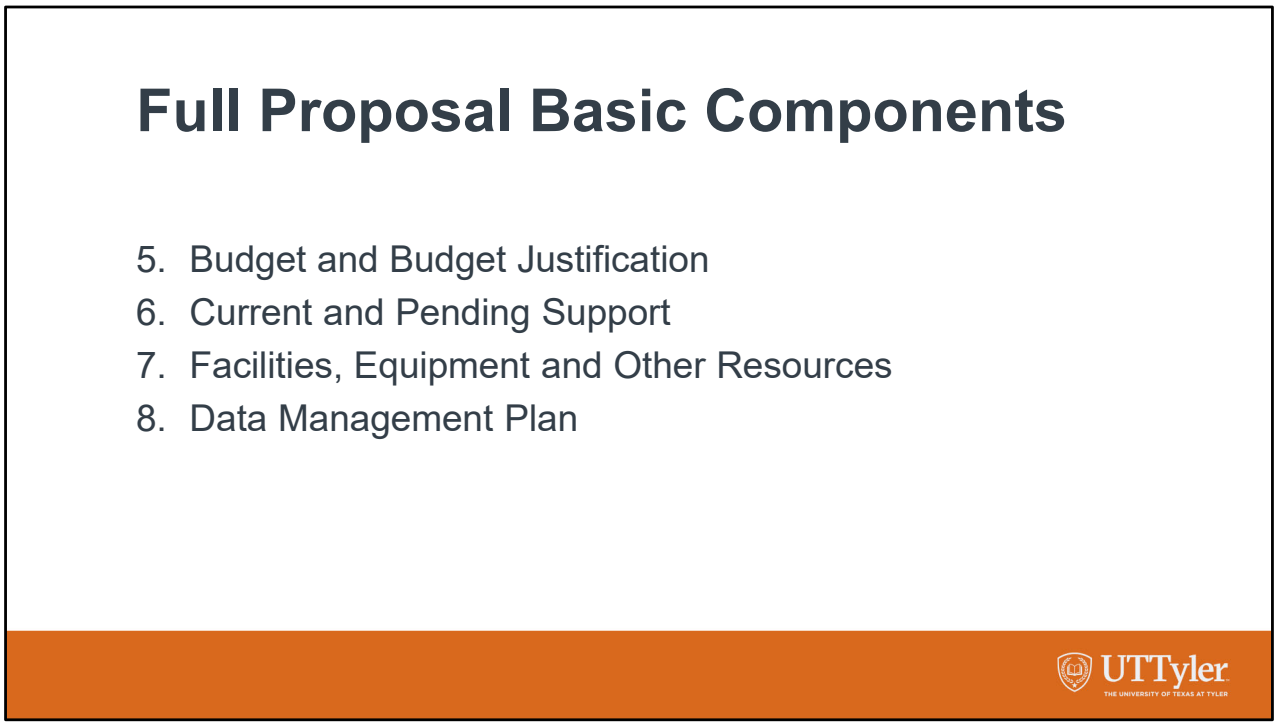
A full proposal has eight basic components:

1. Project Summary
2. Project Description
3. References Cited
4. Biographical Sketches



A full proposal has eight basic components:

1. Project Summary
2. Project Description
3. References Cited
4. Biographical Sketches
5. Budget and Budget Justification
6. Current and Pending Support
7. Facilities, Equipment and Other Resources
8. Data Management Plan

Project Description

The proposal must conform to the following requirements:

a. Use one of the following fonts identified below:

- Arial (not Arial Narrow), Courier New, or Palatino Linotype at a font size of 10 points or larger;
- Times New Roman at a font size of 11 points or larger; or
- Computer Modern family of fonts at a font size of 11 points or larger.

b. No more than six lines of text within a vertical space of one inch.

c. Margins, in all directions, must be at least an inch. No proposer-supplied information may appear in the margins.

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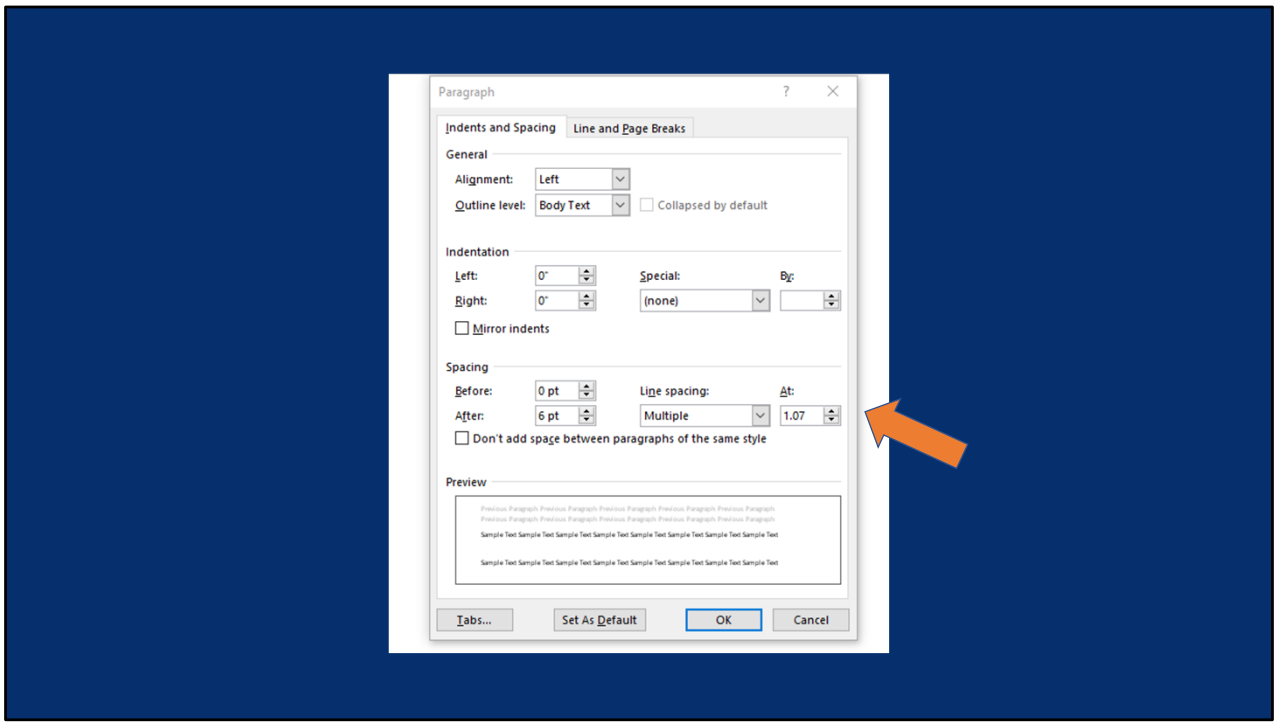
If you use Arial font at 10 points, you will need to use a line spacing of 1.07 for your document to upload in Research.gov without errors or warnings.



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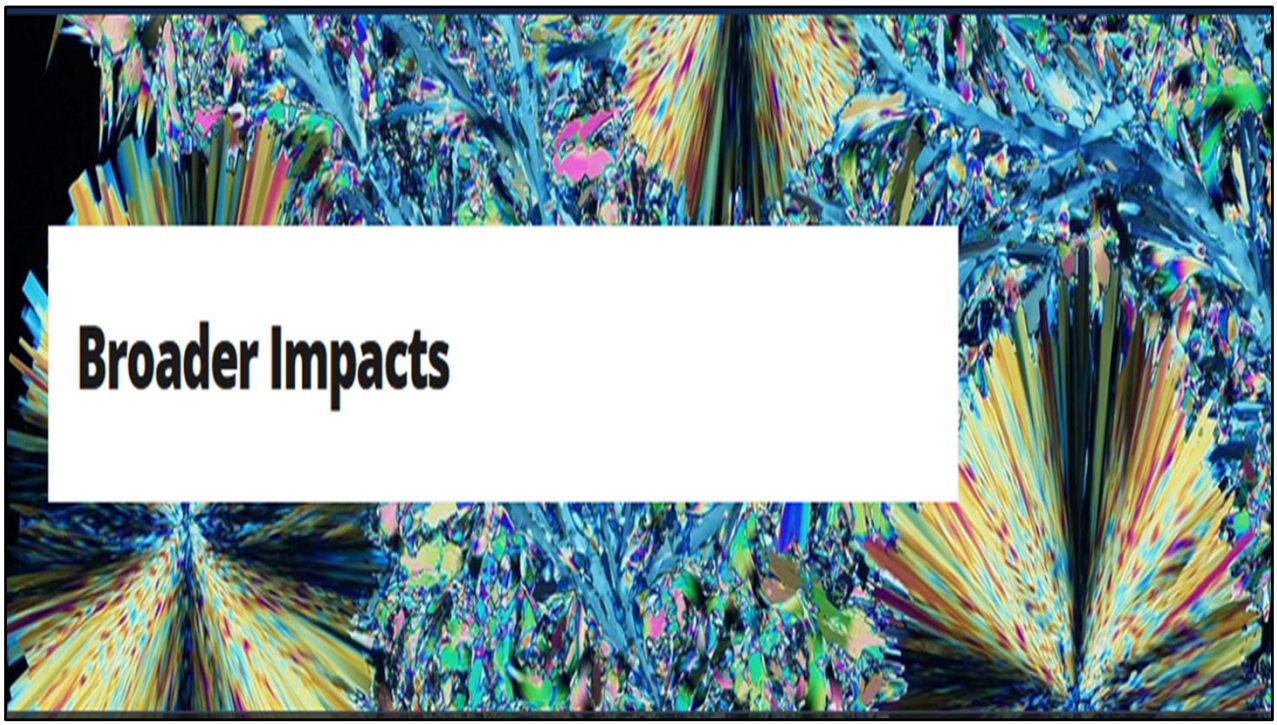
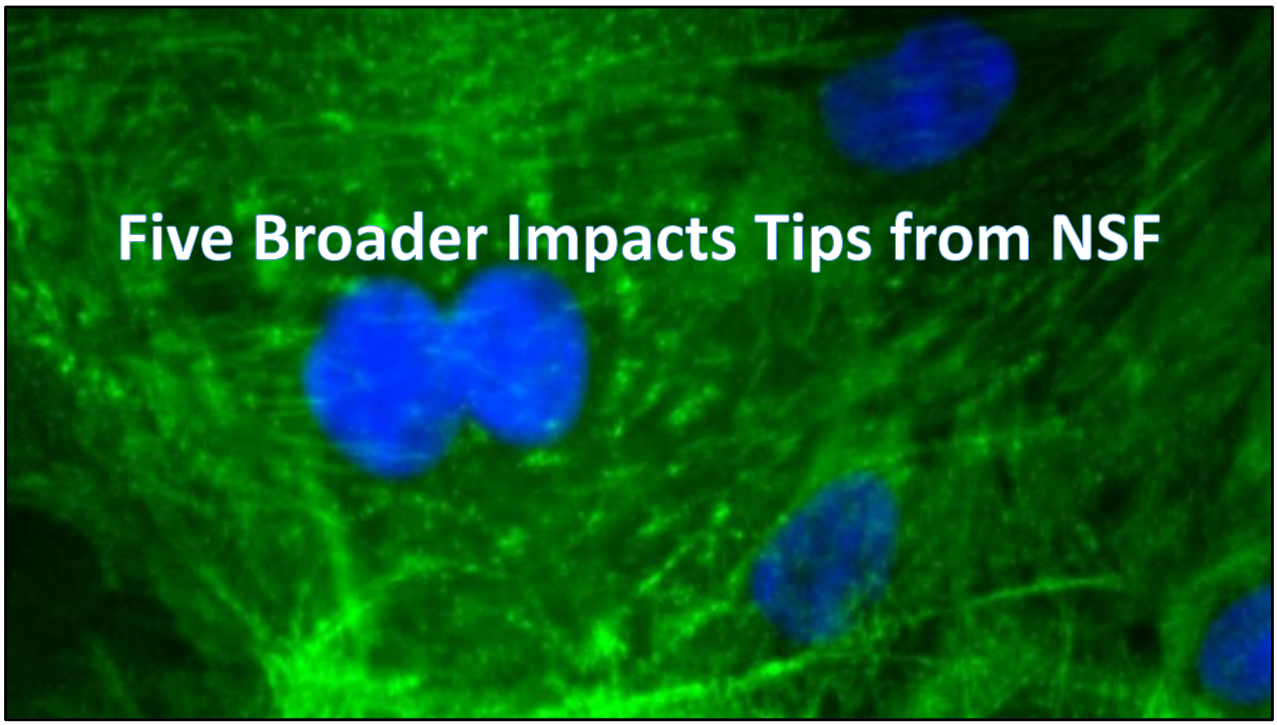


The two criteria used by reviewers of NSF proposals are Intellectual Merit and Broader Impacts, unless a program solicitation contains additional review criteria which must also be addressed.

Only the “Broader Impacts” section must be labeled; you don’t need a specific section labeled intellectual merit in your proposal although you should address it. Please note that no other text can be on the line with the heading “Broader Impacts”.

When reviewers are considering proposals with equal intellectual merit, they use the Broader Impacts section to choose which ones will be selected for funding.

https://beta.nsf.gov/funding/learn/broader-impacts



1. Do your homework – see NSF's nine examples
2. Seek additional resources
3. Align your statement with your interests, expertise and community needs
4. Know the difference between broader impacts and broadening participation
5. Know your audience

https://beta.nsf.gov/science-matters/nsf-101-five-tips-your-broader-impacts-statement

1. What is the potential for the proposed activity to benefit society or advance desired societal outcomes?
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 sound rationale? Does the plan incorporate a mechanism to assess success?
4. How well qualified is the individual, team, or institution to conduct the proposed activities?
5. Are there adequate resources available to the principal investigator (either at the home institution or through collaborations) to carry out the proposed activities.

https://beta.nsf.gov/science-matters/nsf-101-five-tips-your-broader-impacts-statement

29-Nov-22 9:35AM	PROPOSAL BUDGET					
	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	TOTAL
A. Senior Personnel						
1	$0	$0	$0	$0	$0	$0
2	0	0	0	0	0	$0
3	0	0	0	0	0	$0
4	0	0	0	0	0	$0
5	0	0	0	0	0	$0
Total Senior Personnel	0	0	0	0	0	$0
B. Other Personnel						
1. Post Doc	0	0	0	0	0	$0
2. Other Professionals	0	0	0	0	0	$0
3. Graduate Students	0	0	0	0	0	$0
4. Undergraduate Students	0	0	0	0	0	$0
5. Other (full time employe)	0	0	0	0	0	$0
6. Other (part time employee)	0	0	0	0	0	$0
TOTAL SALARIES	0	0	0	0	0	$0
C. Fringe Benefits						
1. Full-Time staff & Faculty	0	0	0	0	0	$0
2. Part-Time staff & Students	0	0	0	0	0	$0
TOTAL BENEFITS	0	0	0	0	0	$0
TOTAL SALARIES & BENEFITS	**0**	**0**	**0**	**0**	**0**	$0

We have a budget worksheet that you can request for drafting your budget. It has formulas built in to help you. Carla has access to salary information for you and your collaborators at our university.

D. EQUIPMENT						
1	0	0	0	0	0	$0
2	0	0	0	0	0	$0
3	0	0	0	0	0	$0
4	0	0	0	0	0	$0
TOTAL EQUIPMENT	0	0	0	0	0	$0
E. TRAVEL						
1. DOMESTIC	0	0	0	0	0	$0
2. FOREIGN	0	0	0	0	0	$0
TOTAL TRAVEL	0	0	0	0	0	$0
F. PARTICIPANT SUPPORT						
1. STIPENDS	0	0	0	0	0	$0
2. TRAVEL	0	0	0	0	0	$0
3. SUBSISTENCE	0	0	0	0	0	$0
4. OTHER	0	0	0	0	0	$0
TOTAL PARTICIPANT COSTS	0	0	0	0	0	$0

Equipment includes those items that will cost over $5,000 and last over a year. Computers are generally included in the supplies category further down in the budget worksheet.

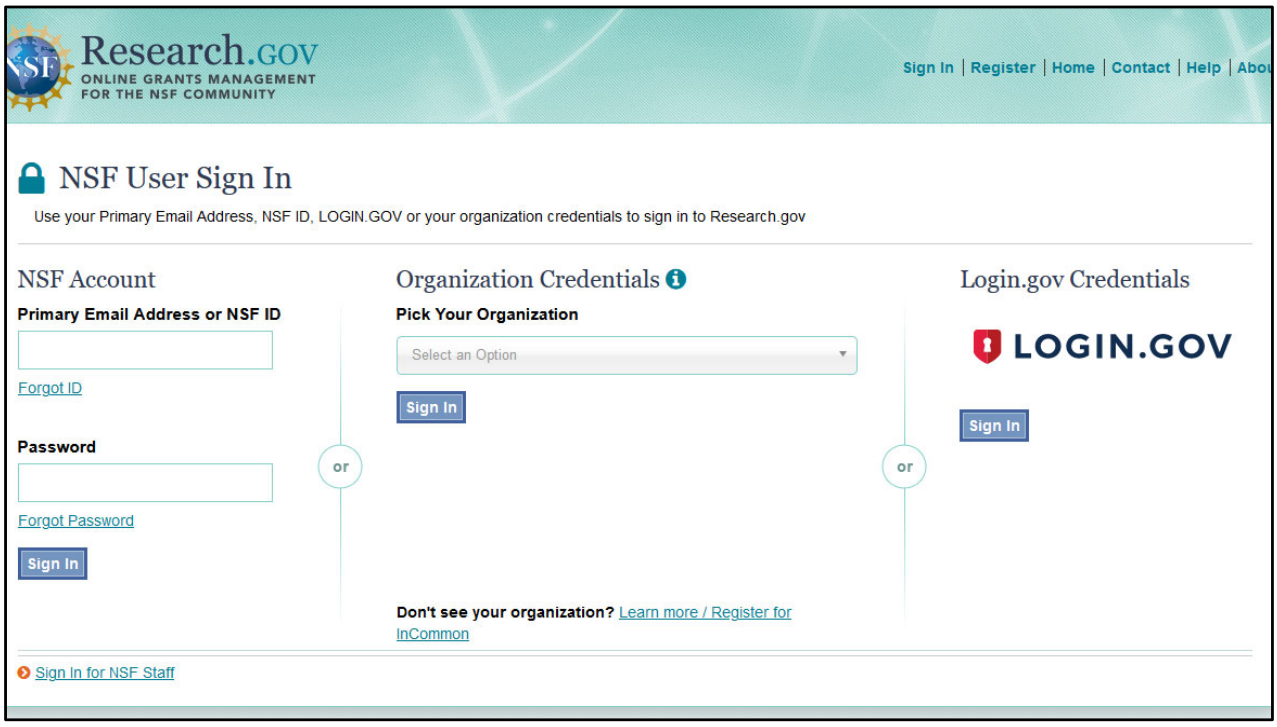
Participant support are generally costs associated with bringing participants to UT Tyler for workshops or conferences.

G. OTHER DIRECT COSTS						
1. MATS & SUPPLIES	0	0	0	0	0	$0
2. PUBLICATIONS	0	0	0	0	0	$0
3. CONSULTANT	0	0	0	0	0	$0
4. Computer Services	0	0	0	0	0	$0
5. SUBCONTRACTS**	0	0	0	0	0	$0
6. OTHER*	0	0	0	0	0	$0
TOTAL OTHER COSTS	0	0	0	0	0	$0
H. TOTAL DIRECT COSTS	0	0	0	0	0	$0
I. INDIRECT COST BASE	0	0	0	0	0	$0
I. INDIRECT COSTS @ 47% MTDC	0	0	0	0	0	$0
						$0
J. TOTAL COSTS	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

One difference between NSF and NIH is that if the budget ceiling is $300,000 for an NSF proposal, then that $300,000 includes both direct and indirect costs.

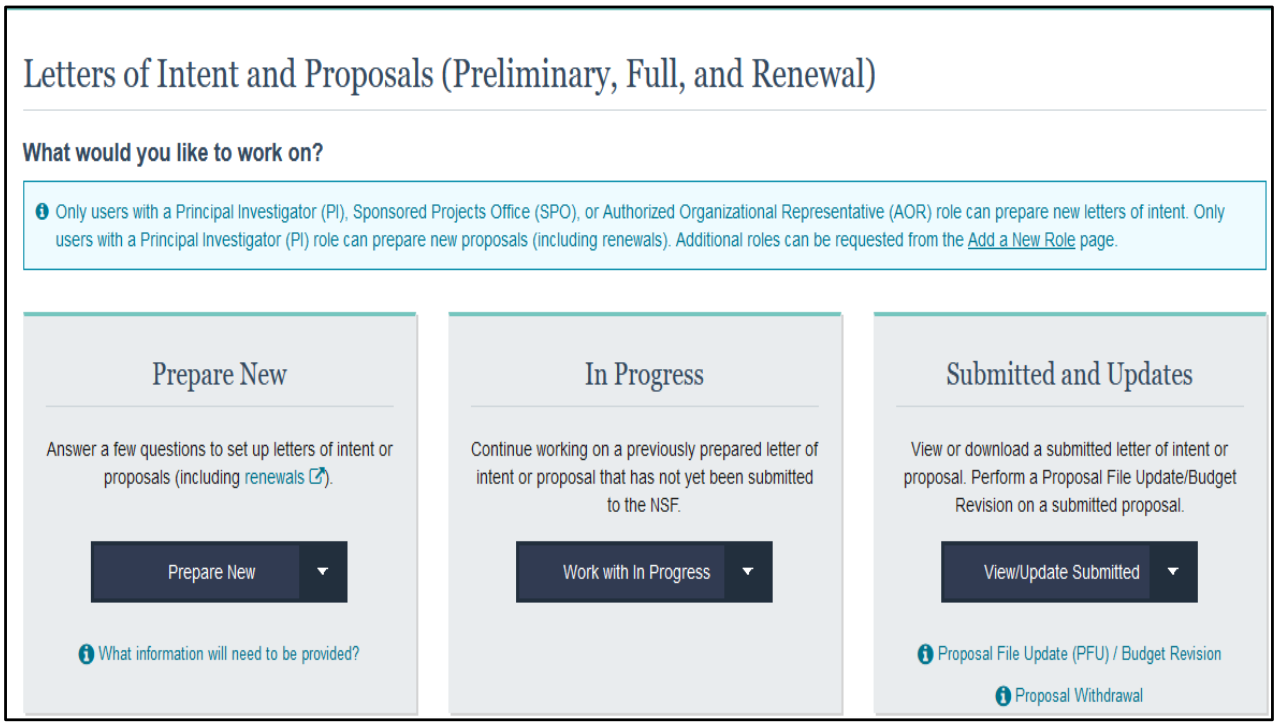
Very few NSF solicitations require cost sharing, therefore, we strongly recommend that you do not volunteer any cost sharing.

If you need any help preparing your budget, please do not hesitate to call Carla or me.

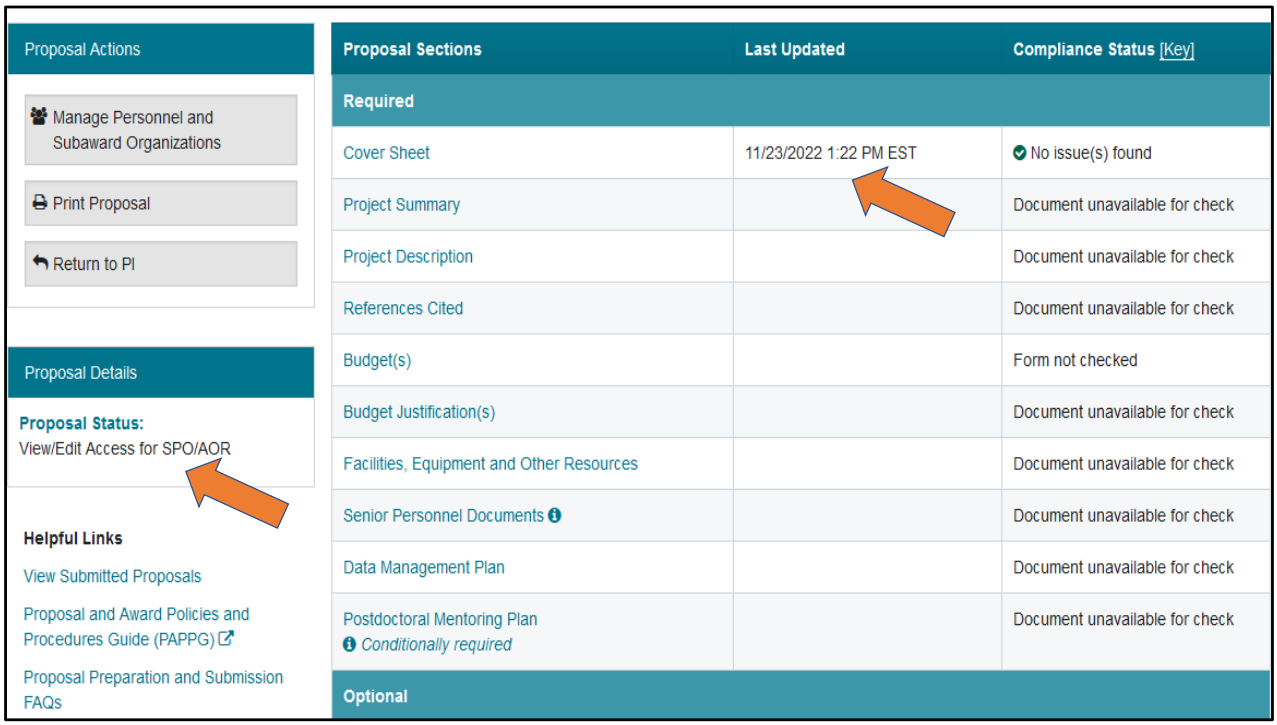


Proposals to the National Science Foundation are submitted through an online portal called Research.gov. NSF Fastlane will no longer be available for submitting proposals beginning in January 2023.

https://www.research.gov/research-web/

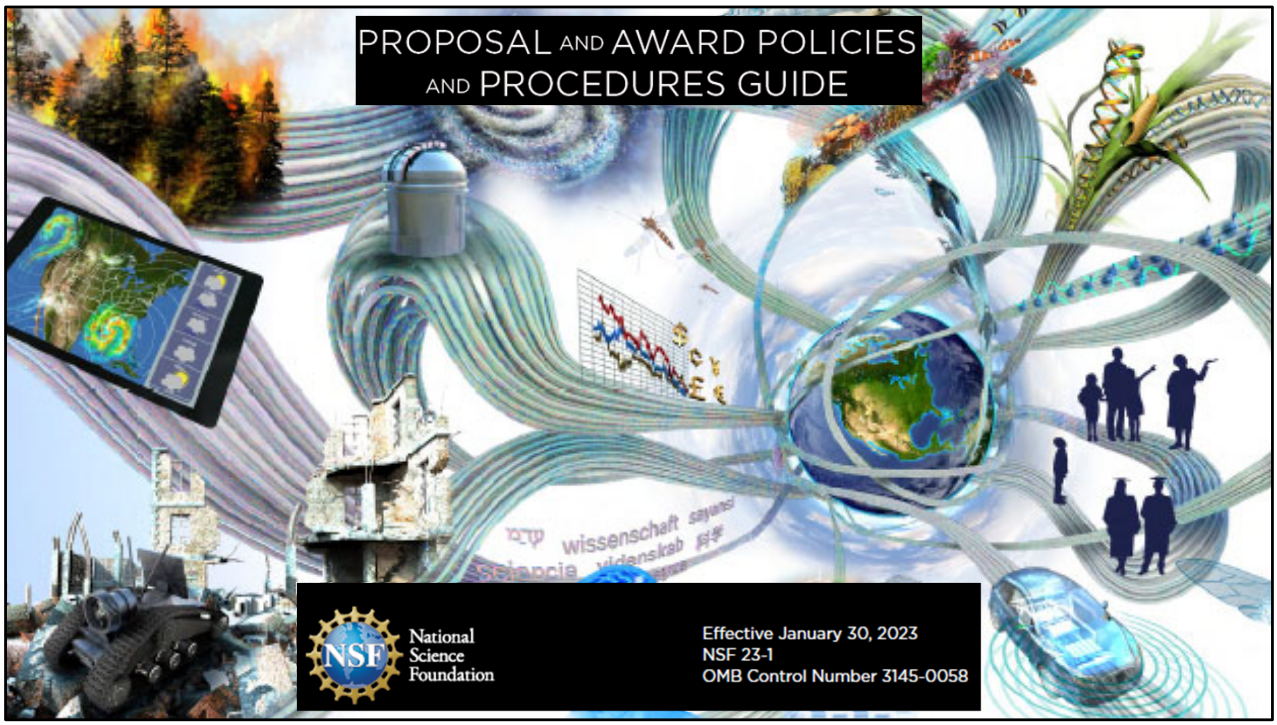


As a principal investigator, once you sign in to Research.gov you can Prepare a New Proposal using the box on the left. You will enter the NSF solicitation number and the system will be set up to receive the necessary documents for that solicitation.



After initiating the proposal, you can then provide view/edit access to staff in the Office of Research, Scholarship and Sponsored Programs to enter required information in the cover sheet and senior personnel documents as well as upload documents. You can also upload documents. However, it is easier for us to review the documents for compliance with the Proposal and Award Policies and Procedures Guide and the solicitation before they are uploaded.

In this example, you can see what documents will be required and that none of them have been uploaded yet. Dr. Carla Reichard, UT Tyler's main campus Authorized Organizational Representative (AOR) has entered the required information for the cover sheet and Research.gov found no issues with what she has entered. Once a document has been uploaded, Research.gov will check to see that it complies with margin, font, and line spacing requirements. It will reject documents that do not meet the requirements. Only the AOR can submit the proposal.



Some of the changes to the new PAPPG include:

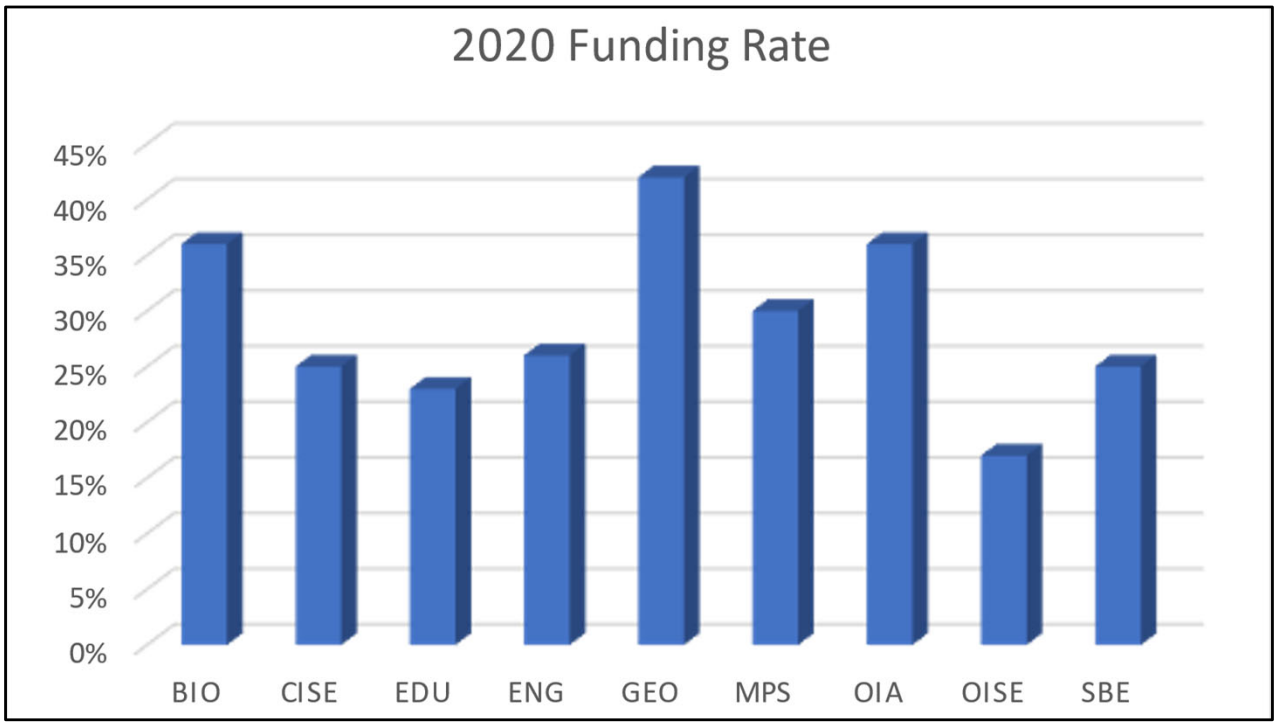
1. A new category of funding opportunity will be available called Broad Agency Announcements (BAA)
2. A new section on required disclosures has been added

1. A new type of submission will be used for some solicitations called the “concept outline”. The Program Suitability and Proposal Concept Tool (ProSPCT) can be used for submission of concept outlines.

Planning, Rapid Response Research (RAPID), Early-concept Grants for Exploratory Research (EAGER), and Research Advanced by Interdisciplinary Science and Engineering (RAISE) prior to the submission of a full proposal.

Beginning in October 2023, biosketches and current and pending support documents must be produced in SciENcv. NSF will not be using fillable forms for those documents for proposals submitted or due in or after October 2023.

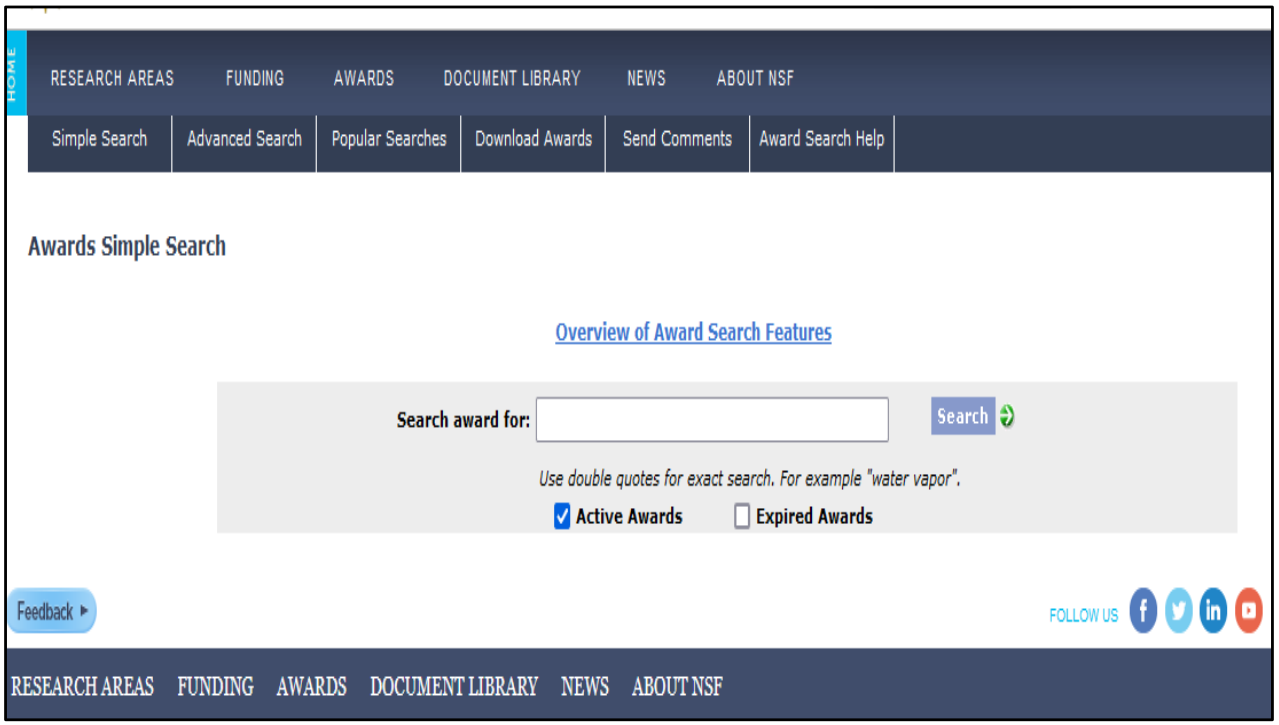
https://www.ncbi.nlm.nih.gov/sciencv/



In 2020 NSF received 42,723 proposals and awarded 12,168 for an overall funding rate of 28%.

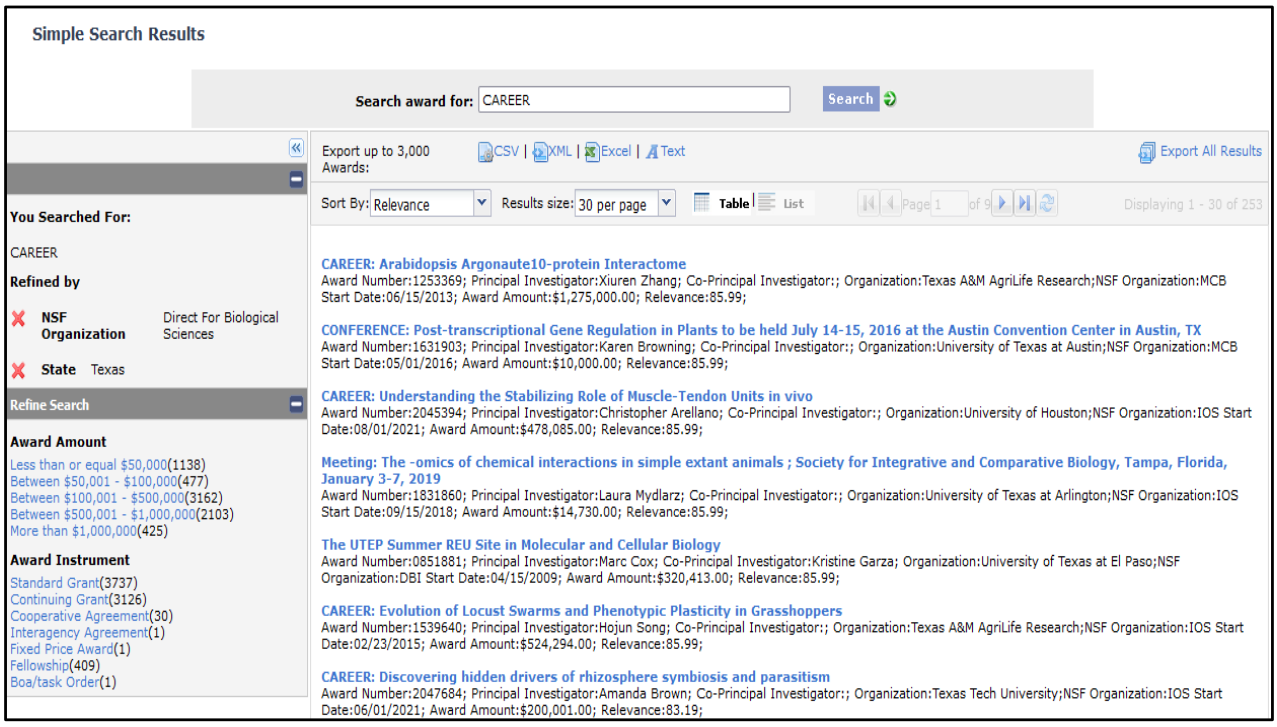
Funding rates of the directorates and offices ranged from 17% for the Office of International Science & Engineering to 42% for the Geosciences.

https://www.nsf.gov/nsb/publications/2021/merit_review/FY-2020/Proposals_%20Awards_%20and%20Funding%20Rates%20by%20Directorate%20or%20Office/Proposals_%20Awards_%20and%20Funding%20Rates%20by%20Directorate%20or%20Office.htm

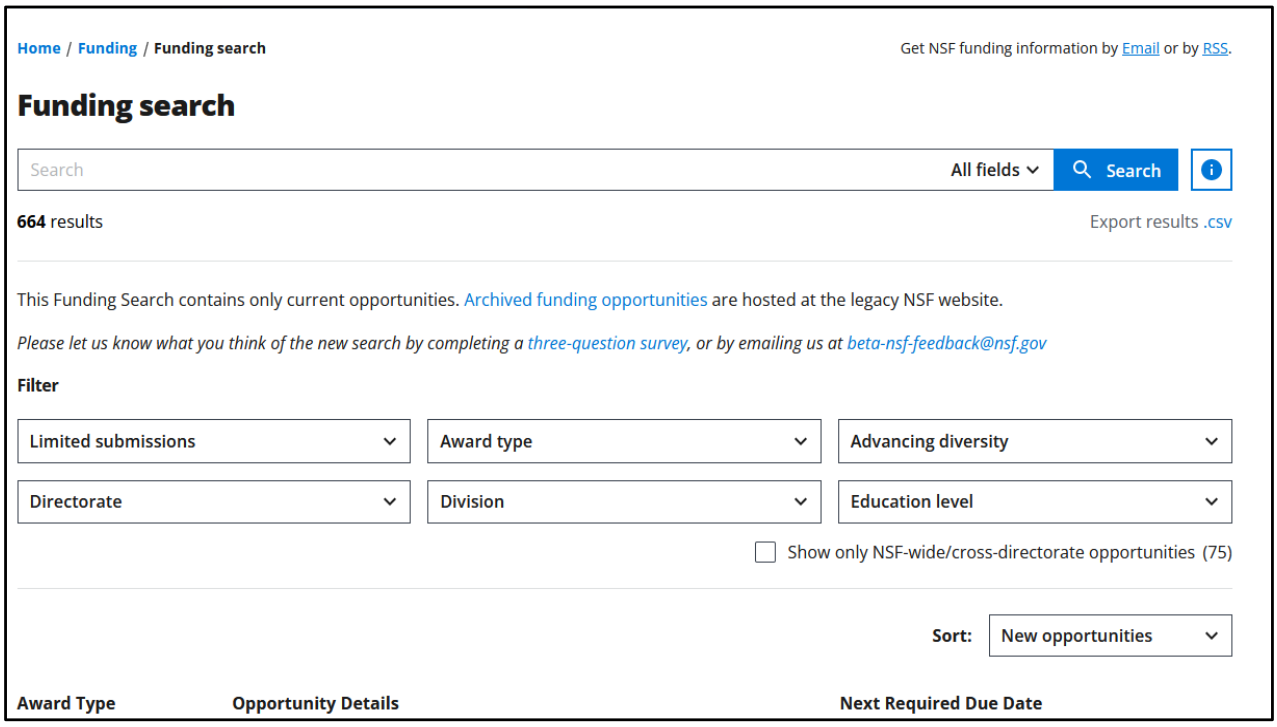


You can also search for awarded NSF grants to see abstracts.

https://www.nsf.gov/awardsearch/

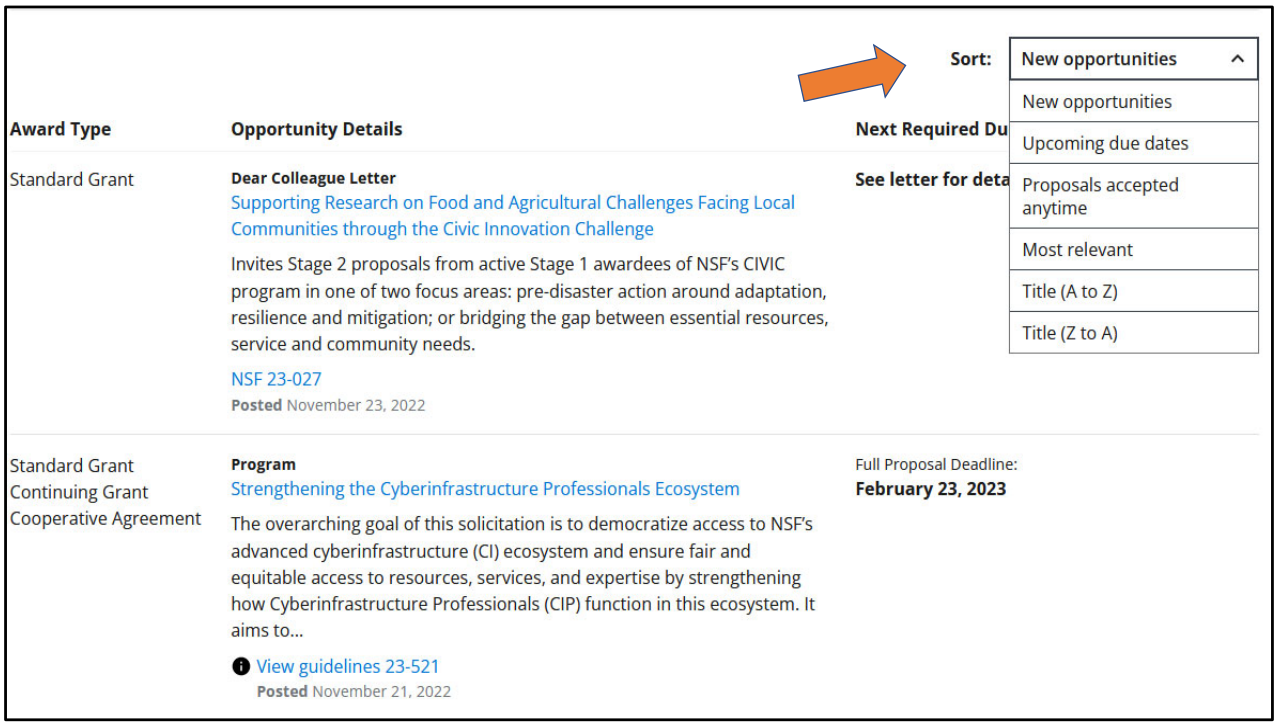


https://www.nsf.gov/awardsearch/



NSF has a funding search page that has several filters that you can use to narrow your search results. As you can see in this slide, today there are 664 funding opportunities open at NSF.

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

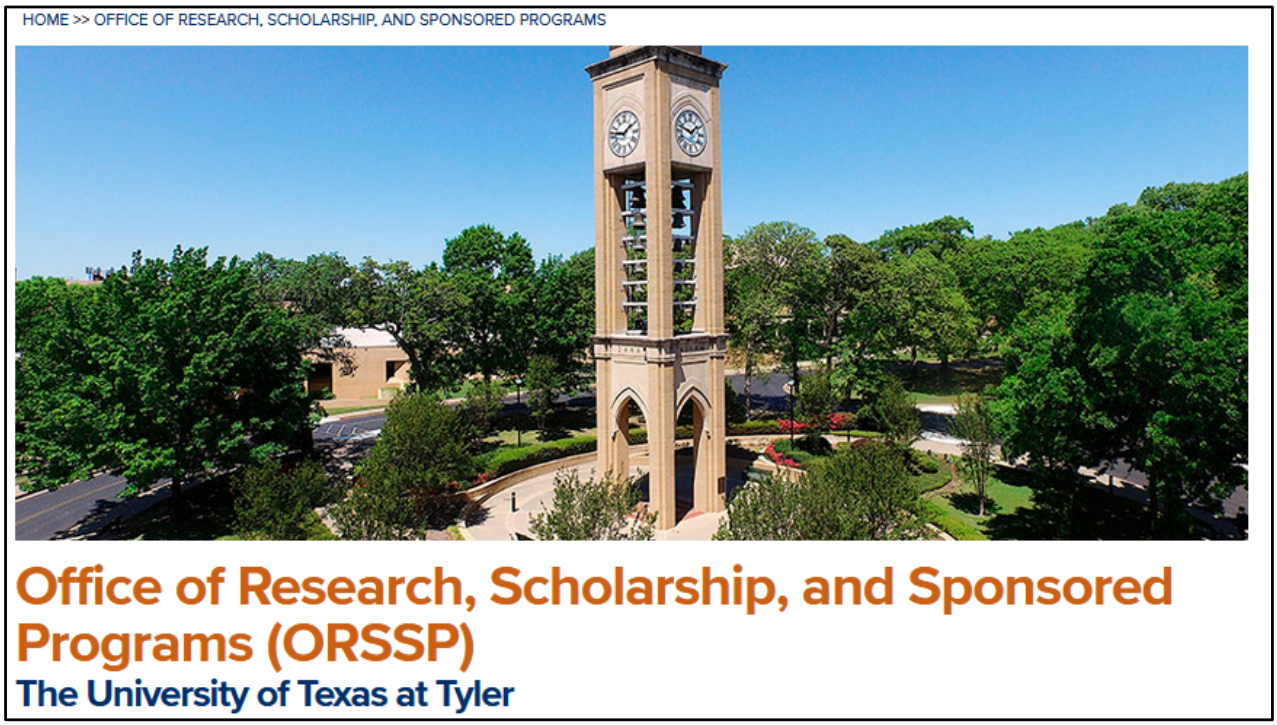


You can sort the results by new opportunities, upcoming due dates, titles, etc.

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

At the NSF Policy Office Outreach webpage, you can find recordings and pdf files of presentations that NSF gave at its conference a few weeks ago.

https://nsfpolicyoutreach.com/resource-center/



https://www.uttyler.edu/research/