A Proposal Preparation Primer

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Speaker

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Topics Covered

- NSF Proposal & Award Policies & Procedures Guide
- Funding Opportunities
- Types of Proposal Submissions
- Types of Funding Mechanisms
- Sections of an NSF Proposal
Proposal & Award Process Timeline

1. NSF Announces Opportunity
2. Research & Education Communities
3. Submit
4. NSF Program Officer
5. Proposal Receipt at NSF
6. Ad Hoc
7. Panel
8. Combination
9. Internal
10. Program Officer Analysis & Recommendations
11. Division Director Concurrence
12. Via Division of Grants & Agreements
13. Organization
14. Award
15. Can be returned without review/withdrawn

Timeline:
- Proposal Preparation: 90 Days
- Proposal Receipt to DD Concurrence of PO Recommendation: 6 Months
- DGA Review & Processing: 30 Days
- Award
- 90 Days
- 6 Months
- 30 Days
What is the *Proposal & Award Policies & Procedures Guide*?

- The *Proposal & Award Policies & Procedures Guide* (PAPPG) contains documents relating to NSF's proposal and award process. It has been designed for use by both our customer community and NSF staff and consists of two parts.
  - Part I is NSF’s proposal preparation and submission guidelines
  - Part II is NSF’s award and administration guidelines
What is the Proposal & Award Policies & Procedures Guide?

- Provides guidance for preparation and submission of proposals to NSF
- Describes process – and criteria – by which proposals will be reviewed
- Outlines reasons why a proposal may not be accepted or returned without review
- Describes process for withdrawals, returns, and declinations
- Includes policies to guide, manage, and monitor the award and administration of grants and cooperative agreements
Types of Funding Opportunities

Program Descriptions
- Proposals for a Program Description must follow the instructions in the PAPPG.

Program Announcements
- Proposals for a Program Announcement must follow the instructions in the PAPPG.

Program Solicitations
- Proposals must follow the instructions in the Program Solicitation; the instructions in the PAPPG apply unless otherwise stated in the solicitation.

Dear Colleague Letters
- Dear Colleague Letters are notifications of opportunities or special competitions for supplements to existing NSF awards.
What to Look for in a Program Solicitation

- Goal of Program
- Eligibility
- Special proposal preparation and/or award requirements
Sample Cover Page of a Solicitation

Materials Innovation Platforms (MIP)

PROGRAM SOLICITATION
NSF 19-526

REPLACES DOCUMENT(S):
NSF 15-522

National Science Foundation
Directorate for Mathematical & Physical Sciences
Division of Materials Research

Full Proposal Deadline(s) (due by 5 p.m. submitter's local time):
April 26, 2019

IMPORTANT INFORMATION AND REVISION NOTES
The second MIP competition focuses on advancing convergence of materials research with biological sciences for developing new materials.

Any proposal submitted in response to this solicitation should be submitted in accordance with the revised NSF Proposal & Award Policies & Procedures Guide (PAPPG) (NSF 19-1).

SUMMARY OF PROGRAM REQUIREMENTS

General Information
Program Title:
Materials Innovation Platforms (MIP)

Synopsis of Program:
Materials Innovation Platforms (MIP) is a mid-scale infrastructure program in the Division of Materials Research (DMR) designed to accelerate advances in materials research. MIPs respond to the increasing complexity of materials research that requires close collaboration of interdisciplinary and transdisciplinary teams and access to cutting edge tools. These tools in a user facility benefit both a user program and in-house research, which focus on addressing grand challenges of fundamental science and meet national needs. MIPs embrace the paradigm set forth by the Materials Genome Initiative (MGI), which strives to discover, manufacture, and deploy advanced materials twice as fast, at a fraction of the cost - and conduct research through iterative “closed-loop” efforts among...

Award Information
Anticipated Type of Award: Cooperative Agreement
Estimated Number of Awards: 1 to 3

The number of awards will depend on the availability of funds and the quality of the proposals.
Anticipated Funding Amount: $12,000,000

Awards totaling $15,000,000 to $25,000,000 over a five-year period are anticipated. The proposed budget must be commensurate with the scope of the project and thoroughly justified in the proposal.
MIP funding is provided yearly. Pending the availability of funds, it is anticipated that $12,000,000 will be available in Fiscal Year 2019.

Eligibility Information

Who May Submit Proposals:
Proposals may only be submitted by the following:
- Institutions of Higher Education (IHEs) - Two- and four-year IHEs (including community colleges) accredited in, and having a campus located in the US, acting on behalf of their faculty members. Special Instructions for International Branch Campuses of US IHEs. If the proposal includes funding to be provided to an international branch campus of a US institution of higher education (including through use of subawards and consultant arrangements), the proposer must explain the benefit(s) to the project of performance at the international branch campus, and justify why the project activities cannot be performed at the US campus.

Who May Serve as PI:
There are no restrictions.

Limit on Number of Proposals per Organization: 1
One (1) per organization as lead institution. Potential PIs are advised to contact their Sponsored Projects Office regarding processes used to select proposals for submission.

The institutions that were awarded a MIP in the 2015 competition as the lead institution are not eligible to submit a MIP proposal as a lead institution in the 2019 competition.

Limit on Number of Proposals per PI or Co-PI: 1
Individuals may appear as Senior Personnel (Principal Investigator/Project Director, co-PI, and other faculty or equivalent with biographical sketches included in the proposal even though their names may not be listed on the proposal Cover Sheet) on only one MIP proposal.
Types of Due Dates

**NO DEADLINES**

Proposals may be submitted at any time.

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F. When to Submit Proposals

Proposers should allow adequate time for processing of proposals (see Chapter I.H for further information). Many NSF programs accept proposals at any time. Other programs, however, establish due dates for submission of proposals. The following types of due dates are utilized by NSF:

1. **Target dates**: dates after which proposals will still be accepted, although they may miss a particular panel or committee meeting.

2. **Deadline dates**: dates after which proposals will not be accepted or will be returned without review by NSF. The deadline date will be waived only in extenuating circumstances. Such a deviation only may be authorized in accordance with Chapter II.A.
Types of Due Dates

TARGET DATES

Talk to the program office if you think you might miss the date.

1. Target dates: dates after which proposals will still be accepted, although they may miss a particular panel or committee meeting.

2. Deadline dates: dates after which proposals will not be accepted or will be returned without review by NSF. The deadline date will be waived only in extenuating circumstances. Such a deviation only may be authorized in accordance with Chapter II.A.
Types of Due Dates

**DEADLINE DATES**

Proposals will not be accepted after this date and time (5pm submitter’s local time)

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Types of Due Dates

SUBMISSION WINDOWS

Proposals will not be accepted after this date and time (5pm submitter’s local time)

3. Submission windows: designated periods of time during which proposals will be accepted for review by NSF. It is NSF’s policy that the end date of a submission window converts to, and is subject to, the same policies as a deadline date.
Types of Proposal Submissions

LETTERS OF INTENT

Enables better management of reviewers and panelists

1. Letters of Intent

Some NSF program solicitations require or request submission of a letter of intent (LOI) in advance of submission of a full proposal. An LOI is not a binding document. The predominant reason for its use is to help NSF program staff gauge the size and range of the competition, enabling earlier selection and better management of reviewers and panelists. In addition, the information contained in an LOI is used to help avoid potential conflicts of interest in the review process.

An LOI normally contains the Principal Investigator’s (PI’s) and co-PI’s names, a proposed title, a list of possible participating organizations (if applicable), and a synopsis that describes the work in sufficient detail to permit an appropriate selection of reviewers. An LOI is not externally evaluated or used to decide on funding. The requirement to submit an LOI will be identified in the program solicitation, and such letters are submitted electronically to NSF. Failure to submit a required LOI identified in a program solicitation will result in a full proposal not being accepted or returned without review.
Types of Proposal Submissions

PRELIMINARY PROPOSALS

Sometimes required, sometimes optional

2. Preliminary Proposals

Some NSF program solicitations require or request submission of a preliminary proposal in advance of submission of a full proposal. The three predominant reasons for requiring submission of a preliminary proposal are to:

- reduce the proposers’ unnecessary effort in proposal preparation when the chance of success is very small. This is particularly true of exploratory initiatives when the community senses that a major new direction is being identified, or competitions that will result in a small number of awards;
- increase the overall quality of the full submission; and
- assist NSF program staff in managing the review process and in the selection of reviewers.
Types of NSF Proposals

- Research
- RAPID & EAGER
- RAISE
- GOALI
- Ideas Lab
- FASED
- Conferences
- Equipment
- Travel
- Centers
- Research Infrastructure
- Fellowships
Single Copy Documents

- Some proposal documents are for “NSF Use Only” and are not provided to reviewers
  - Authorization to deviate from proposal preparation requirements
  - List of suggested reviewers to include or not to include
  - Proprietary or privileged information
  - Proposal certifications
  - Collaborators and Other Affiliations Information
Required Sections of a Research Proposal

Proposals that do not contain the following required sections may not be accepted by NSF Systems:

- Project Summary
- Project Description
- References Cited
- Biographical Sketch(es)
- Budget
- Budget Justification
- Current and Pending Support
- Facilities, Equipment and Other Resources
- Data Management Plan
- Postdoctoral Mentoring Plan (if applicable)
Sections of an NSF Research proposal

Cover Sheet (Required)
Many of the boxes on the cover sheet are electronically pre-filled as part of the Fastlane login process.

Example from FastLane
Sections of an NSF Research Proposal

**Project Summary (Required)**

Text boxes must contain an Overview and Statements on Intellectual Merit and Broader Impacts.

Proposals that do not separately address the Overview and both Merit Review criteria in text boxes will not be accepted by FastLane. Project summaries with special characters must be uploaded as a PDF document.

**Text from the PAPPG**

Each proposal must contain a summary of the proposed project not more than one page in length. The Project Summary consists of an overview, a statement on the intellectual merit of the proposed activity, and a statement on the broader impacts of the proposed activity.

The overview includes a description of the activity that would result if the proposal were funded and a statement of objectives and methods to be employed. The statement on intellectual merit should describe the potential of the proposed activity to advance knowledge. The 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.

The Project Summary should be written in the third person, informative to other persons working in the same or related fields, and, insofar as possible, understandable to a scientifically or technically literate lay reader. It should not be an abstract of the proposal.

The Project Summary may ONLY be uploaded as a Supplementary Document if use of special characters is necessary. Such Project Summaries must be formatted with separate headings for Overview, Intellectual Merit and Broader Impacts. Failure to include these headings will result in the proposal being returned without review.

**Table of Contents**

A Table of Contents is automatically generated for the proposal. The proposer cannot edit this form.

**Project Description (Including Results from Prior NSF Support)**

The Project Description should provide a clear statement of the work to be undertaken and must include the 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.

The Project Description should outline the general plan of work, including the broad design of activities to be undertaken, and, where appropriate, provide a clear description of experimental methods and procedures. Proposers should address what they 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. The project activities may be based on previously established and/or innovative methods and approaches, but

1) If the proposal includes use of vertebrate animals, supplemental information is required. See Chapter II.D.4 for additional information.
2) If the proposal includes use of human subjects, supplemental information is required. See Chapter II.D.5 for additional information.
Sections of an NSF Research Proposal

**Project Description (Required)**

Proposers should address what they 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. A separate section within the narrative must include a discussion of the broader impacts of the proposed activities.

The Project Description must contain, as a separate section within the narrative, a section labeled “Broader Impacts.” This section should provide a discussion of the broader impacts of the proposed activities. 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 the achievement of societal 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.

Plans for data management and sharing of the products of research, including preservation, documentation, and sharing of data, samples, physical collections, curriculum materials and other related research and education products should be described in the Special Information and Supplementary Document section of the proposal (see Chapter II.C.2) for additional instructions for preparation of this section.

(ii) Page Limitations and Inclusion of Uniform Resource Locators (URLs) within the Project Description

Brevity will assist reviewers and Foundation staff in dealing effectively with proposals. Therefore, the Project Description (including Results from Prior NSF Support, which is limited to five pages) may not exceed 15 pages. Visual materials, including charts, graphs, maps, photographs and other pictorial presentations are included in the 15-page limitation. PIs are cautioned that the Project Description must be self-contained and that URLs must not be used because: 1) the information could circumvent page limitations; 2) the reviewers are under no obligation to view the sites; and 3) the sites could be altered or deleted between the time of submission and the time of review.

Conformance to the 15-page limit will be strictly enforced and may not be exceeded unless a deviation has been specifically authorized. (Chapter II.A contains information on deviations.)

(iii) Results from Prior NSF Support

The purpose of this section is to assist reviewers in assessing the quality of prior work conducted with current or prior NSF funding. If any PI or co-PI identified on the proposal has received NSF support with a start date in the past five years (including any current funding and no cost extensions), information on the award is required for each PI and co-PI, regardless of whether the support was directly related to the proposal or not. In cases where the PI or any co-PI has received more than one award (excluding amendments to existing awards), they need only report on the one award that is most closely related to the proposal. Support includes not just salary support, but any funding awarded by NSF. NSF awards such as standard or continuing grants, Graduate Research Fellowship, Major Research Instrumentation, conference, equipment, travel, and center awards, etc., are subject to this requirement.

The following information must be provided:

(a) the NSF award number, amount and period of support;
(b) the title of the project;

Text from the PAPPG
Sections of an NSF Research Proposal

References Cited (Required)
Reference information is required, and proposers must follow accepted scholarly practices in providing citations for source materials.

Text from the PAPPG
Sections of an NSF Research Proposal

Biographical Sketches (Required)

Biographical sketches are required for all senior project personnel and must not exceed two pages in length, per individual.

NSF is encouraging use of SciENcv for preparation of biographical sketches.

Text from the PAPPG
Sections of an NSF Research Proposal

Budget (Required)
Each proposal must contain a budget for each year of support requested. The budget justification should be no more than five pages for all years of the project combined.

Proposals containing subaward(s) must include a separate budget justification of no more than five pages for each subaward.
Budgetary Guidelines

Information regarding budgetary guidelines can be found in PAPPG as well as NSF program solicitations.

Amounts should be:

- Realistic and reasonable
- Well-justified and should establish need
- Consistent with program guidelines

Eligible costs consist of:

- Personnel
- Equipment
- Travel
- Participant support
- Other direct costs (e.g., sub-awards, consultant services, computer services, and publications costs)
Sections of an NSF Research Proposal

Facilities, Equipment, and Other Resources *(Required)*

This section of the proposal is used to assess the adequacy of the organizational resources available to perform the effort proposed.

Facilities, Equipment, and Other Resources

**Instructions:** Upload an aggregated description of the internal and external resources (both physical and personnel) that the organization and its collaborators will provide to the project, should it be funded. Describe only those resources that are directly applicable. The description should be narrative in nature and must not include any quantifiable financial information. If there are no Facilities, Equipment, or Other Resources identified, a statement to that effect should be indicated in this section and uploaded into FastLane. See PAPPG II.C.2.i for more information.
Sections of an NSF Research Proposal

Current and Pending Support *(Required)*

- This section of the proposal calls for information on all current and pending support for ongoing projects and proposals.

- NSF uses this information to assess the capacity of investigators to carry out the research as proposed and to help assess any potential overlap with the project being proposed.
Sections of an NSF Research Proposal

**Special Information and Supplementary Documentation**

This segment should alert NSF officials to unusual circumstances that require special handling; more information can be found in the PAPPG, Chapter II.C.2.j.

- **Postdoctoral Researcher Mentoring Plan.** Each proposal that requests funding to support postdoctoral researchers must upload a description of the mentoring activities that will be provided for such individuals. A mentoring plan must describe the mentoring that will be provided to all postdoctoral researchers supported by the project, regardless of whether they reside at the submitting organization, any subrecipient organization, or at any organization participating in a simultaneously submitted collaborative proposal. Proposers are advised that the mentoring plan must not be used to circumvent the 15-page Project Description limitation. See Chapter II.D.5 for additional information on collaborative proposals. Mentoring activities provided to postdoctoral researchers supported on the project will be evaluated under the Broader Impacts review criterion.

Examples of mentoring activities include, but are not limited to: career counseling; training in preparation of grant proposals, publications and presentations; guidance on ways to improve teaching and mentoring skills; guidance on how to effectively collaborate with researchers from diverse backgrounds and disciplinary areas; and training in responsible professional practices.

- **Plans for Data Management and Sharing of the Results of Research.** Proposals must include a document of no more than two pages uploaded under "Data Management Plan" in the supplementary documentation section of FastLane. This supplementary document should describe how the proposal will conform to NSF policy on the dissemination and sharing of research results (see Chapter XI.D.4.), and may include:
  1. the types of data, samples, physical collections, software, curriculum materials, and other materials to be produced in the course of the project;
  2. the standards to be used for data and metadata format and content (where applicable).
Special Information and Supplementary Documentation

- Data Management Plans
- Post-doctoral Mentoring Plans
- Letters of Collaboration
Mentoring for Postdoctoral Researchers

• Proposals that include funding to support postdoctoral researchers must include a description of the mentoring activities that will be provided for such individuals.

• Proposed mentoring activities will be evaluated as part of the merit review process, under NSF’s Broader Impacts merit review criterion.

• Proposals that identify a postdoc on the budget but do not include a maximum one-page mentoring plan as a supplementary document will be prevented from submission in FastLane.

• For collaborative proposals, the lead organization must submit a mentoring plan for all postdoctoral researchers supported under the entire collaborative project.
Mentoring for Postdoctoral Researchers

- Mentoring activities may include:
  - Providing career counseling, training in the preparation of grant proposals, or training in responsible professional practices
  - Developing publications and presentations
  - Offering guidance on techniques to improve teaching and mentoring skills
  - Providing counseling on how to effectively collaborate with researchers from diverse backgrounds and disciplinary areas
Data Management Plan Requirements

• All proposals are required to include, as a supplementary document, a Data Management Plan of up to two pages.

• Plan should describe how the proposal will conform to NSF policy on dissemination and sharing of research results.

• A valid Data Management Plan may include only the statement that no detailed plan is needed, as long as a clear justification is provided.

• Plan will be reviewed as part of the Intellectual Merit and/or Broader Impacts of the proposal.
Data Management Plan Requirements

Dissemination and Sharing of Research Results

NSF DATA SHARING POLICY

Innovations are expected to share with other researchers, at no more than incremental cost and within a reasonable time, the primary data, data sets, physical collections, and other supporting materials created or gathered in the course of work under NSF grants. Practices are expected to encourage and facilitate such sharing. See Award and Administration Guide (AAG) Section V.A.6.A.

NSF DATA MANAGEMENT PLAN REQUIREMENTS

Proposals submitted or due on or after January 18, 2011, must include a supplementary document of no more than two pages titled “Data Management Plan.” This supplementary document should describe how the proposal will conform to NSF policy on the dissemination and sharing of research results. See Grant Proposal Guide (GPG) Chapter I.C.2. for full policy implementation.

REQUIREMENTS BY DIRECTORATE, OFFICE, DIVISION, PROGRAM, OR OTHER NSF UNIT

Links to data management requirements and plans relevant to specific Directors, Offices, Divisions, Programs, or other NSF units, are provided below. If guidance specific to the program is not provided, then the requirements specified in Grant Proposal Guide, Chapter I.C.2. apply.

Please note that if a specific program solicitation provides guidance on completion of data management plans, such guidance must be followed.

- Biological Sciences Directorate (BIO)
  - Director’s Office Guidance
- Computer & Information Science & Engineering (CISE)
  - Director’s Office Guidance
- Education & Human Resources Directorate (EHR)
  - Director’s Office Guidance
- Engineering Directorate (ENG)
  - Director’s Office Guidance
- Geosciences Directorate (GEO)
  - Director’s Office Guidance
For More Information:
Ask Early, Ask Often!

policy@nsf.gov