

Facilitating Research at Primarily Undergraduate Institutions: Research in Undergraduate Institutions (RUI) and Research Opportunity Awards (ROA)

PROGRAM SOLICITATION NSF 14-579

REPLACES DOCUMENT(S): NSF 00-144



National Science Foundation

Office of International Science and Engineering

Directorate for Biological Sciences

Directorate for Computer and Information Science and Engineering

Directorate for STEM 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

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

Proposals Accepted Anytime

Submission deadlines vary by program and proposals must meet program-specific requirements to be considered for review. PIs should contact cognizant program officers for guidance.

IMPORTANT INFORMATION AND REVISION NOTES

Prospective principal investigators (PIs) should contact disciplinary program officers to identify specific NSF programs and determine the feasibility and timing of a Research in Undergraduate Institutions (RUI) or Research Opportunity Awards (ROA) request. For general questions see: https://www.nsf.gov/crssprgm/rui_roa/contacts.jsp.

This solicitation uses the same definition of a "primarily undergraduate institution" (PUI) as the Major Research Instrumentation (MRI) program, another Foundation-wide opportunity. Eligible PUIs are accredited colleges and universities (including two-year community colleges) that award Associate's degrees, Bachelor's degrees, and/or Master's degrees in NSF-supported fields, but have awarded 20 or fewer Ph.D./D.Sci. degrees in all NSF-supported fields during the combined previous two academic years. See Section IV for further information.

This solicitation has been modified to indicate that support for instrumentation through this solicitation varies among divisions and offices, and that the Foundation-wide Major Research Instrumentation (MRI) program should be explored as a first choice for research instrumentation requests. Prospective principal investigators (PIs) should consult with disciplinary program officers to determine the appropriateness of such requests.

Emphasis within the solicitation is provided to indicate that RUI proposals and/or collaborative proposals with one component being a ROA must be submitted in accordance with guidelines and timeframes appropriate for the division programs that will be reviewing the proposal. Clarification is provided in this solicitation on other mechanisms (besides supplements) for ROAs such as re-budgeting of existing awards, and components of new proposals. ROA supplement requests (or requests to rebudget existing awards for ROA activities) can be made at any time.

Emphasis is provided throughout the solicitation to indicate that funding for RUI and ROA awards is contained within research and education program allocations and not held as a separate allocation; funds are provided at the discretion of divisions and offices.

Any proposal submitted in response to this solicitation should be submitted in accordance with the [NSF Proposal & Award Policies & Procedures Guide \(PAPPG\)](#) that is in effect for the relevant due date to which the proposal is being submitted. The NSF PAPPG is regularly revised and it is the responsibility of the proposer to ensure that the proposal meets the requirements specified in this solicitation and the applicable version of the PAPPG. Submitting a proposal prior to a specified deadline does not negate this requirement.

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

Facilitating Research at Primarily Undergraduate Institutions:
Research in Undergraduate Institutions (RUI) and Research Opportunity Awards (ROA)

Synopsis of Program:

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 research at their home institution, and supports the integration of research and undergraduate education. ROAs similarly support PUI faculty research, but these awards typically allow faculty to work as visiting scientists at research-intensive organizations where they collaborate with other NSF-supported investigators.

Eligible PUIs are accredited colleges and universities (including two-year community colleges) that award Associate's degrees, Bachelor's degrees, and/or Master's degrees in NSF-supported fields, but have awarded 20 or fewer Ph.D./D.Sci. degrees in all NSF-supported fields during the combined previous two academic years.

All NSF directorates may support RUI and ROA funding activities. Funding for these awards is contained within research and education program allocations and not held as a separate allocation. RUI and ROA proposals are evaluated and funded by NSF programs in the disciplinary areas of the proposed research and are funded at their discretion.

Prospective PIs should contact disciplinary program officers to identify specific NSF programs and to determine the feasibility and timing of RUI/ROA requests. General RUI/ROA points of contact are available through the website https://www.nsf.gov/crssprgm/rui_roa/contacts.jsp.

1. Research in Undergraduate Institutions (RUI). An RUI proposal may be:

- A request to support an individual research project or a collaborative research project involving PUI faculty and students at their own or other institutions.
- A request involving shared research instrumentation.

2. Research Opportunity Awards (ROA). The types of ROA opportunities include:

- A supplement to an existing NSF award to support ROA activities for PUI faculty.
- Requests to rebudget funds in an existing NSF award to support ROA activities for PUI faculty.
- Submission of a new collaborative proposal between a PUI and another institution(s), with a ROA component as a subaward or as part of a linked collaborative proposal.

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.

- See Section VIII Contacts Below, telephone: 703-292-5111, email: info@nsf.gov

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: Standard Grant or Continuing Grant

Estimated Number of Awards: 245

The number of awards varies across disciplinary research programs. In recent years NSF has made approximately 200 RUI awards and 45 ROA awards per year.

Anticipated Funding Amount: \$56,000,000

Funding for RUI/ROA awards is contained within research and education program allocations and is not held as a separate allocation; funds are provided at the discretion of divisions and offices. However, in recent years NSF has invested on average approximately \$53 million each year in RUI research projects and over \$3 million in ROA awards annually. All awards are subject to the availability of funds.

RUI awards will be made as standard or continuing grants.

ROA awards will be made as supplements to existing NSF awards, requests to re-budget existing NSF awards to include ROA activities, or as standard or

continuing grants.

Eligibility Information

Who May Submit Proposals:

Proposals may only be submitted by the following:

- Eligible predominantly undergraduate institutions (PUIs) are accredited colleges and universities (including two-year community colleges) that award Associate's degrees, Bachelor's degrees, and/or Master's degrees in NSF-supported fields, but have awarded 20 or fewer Ph.D./D.Sci. degrees in all NSF-supported fields during the combined previous two academic years.

Who May Serve as PI:

See Additional Eligibility Information in Section IV.B of this solicitation.

Limit on Number of Proposals per Organization:

There are no restrictions or limits.

Limit on Number of Proposals per PI or co-PI:

The number of allowed proposals per PI varies by program and prospective PIs should contact cognizant program officers for guidance.

Proposal Preparation and Submission Instructions

A. Proposal Preparation Instructions

- **Letters of Intent:** Not required
- **Preliminary Proposal Submission:** Not required
- **Full Proposals:**
 - Full Proposals submitted via Research.gov: *NSF Proposal and Award Policies and Procedures Guide* (PAPPG) guidelines apply. The complete text of the PAPPG is available electronically on the NSF website at: https://www.nsf.gov/publications/pub_summ.jsp?ods_key=pappg.
 - Full Proposals submitted via Grants.gov: *NSF Grants.gov Application Guide: A Guide for the Preparation and Submission of NSF Applications via Grants.gov* guidelines apply (Note: The *NSF Grants.gov Application Guide* is available on the Grants.gov website and on the NSF website at: https://www.nsf.gov/publications/pub_summ.jsp?ods_key=grantsgovguide).

B. Budgetary Information

- **Cost Sharing Requirements:**

Inclusion of voluntary committed cost sharing is prohibited.
- **Indirect Cost (F&A) Limitations:**

Not Applicable
- **Other Budgetary Limitations:**

Not Applicable

C. Due Dates

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

Proposals Accepted Anytime

Submission deadlines vary by program and proposals must meet program-specific requirements to be considered for review. PIs should contact cognizant program officers for guidance.

Proposal Review Information Criteria

Merit Review Criteria:

National Science Board approved criteria. Additional merit review criteria apply. Please see the full text of this solicitation for further information.

Award Administration Information

Award Conditions:

Standard NSF award conditions apply.

Reporting Requirements:

Standard NSF reporting requirements apply.

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I. INTRODUCTION

Predominantly undergraduate institutions (PUIs) play a critically important role in U.S. science, engineering, and technology through their substantial contributions to education and to research. NSF encourages research by faculty members of these institutions to ensure a broad national base for research and to help faculty members stay at the cutting edge of their disciplines. Such research not only contributes to basic knowledge in science and engineering but also provides an opportunity for integration of scientific discovery into undergraduate education. As the ultimate in inquiry-based learning, undergraduate research is a critical component of high-quality education in science, technology, engineering, and mathematics (STEM). Undergraduate research experiences provide a strong foundation for careers in science and engineering and for graduate study. A significant number of STEM professionals receive bachelor degrees from predominantly undergraduate institutions.

For the purposes of this solicitation PUIs are defined in terms of the nature of the institution, not solely on the basis of highest degree offered. Included by the definition are two- and four-year colleges, masters-level institutions, and smaller doctoral institutions that, institution-wide, have awarded 20 or fewer Ph.D./D.Sci. degrees in all NSF-supported fields during the combined previous two academic years. (see "Eligibility Information" below).

This solicitation describes mechanisms by which NSF programs provide support for research by faculty members of PUIs. In general, all NSF directorates may support RUI and ROA activities within programs announced through their solicitations or program descriptions. However, some programs do not accept RUI/ROA submissions (including RUI/ROA Eligibility Certifications and RUI Impact Statements). Prospective PIs are advised to carefully read pertinent program guidelines and to contact cognizant NSF program officers for guidance.

Research in Undergraduate Institutions (RUI). RUI supports research by individual PUI faculty members and groups of collaborating PUI investigators. RUI proposals support PUI faculty in research that engages them in their professional field(s), builds capacity for research at their home institution, and supports the integration of research and undergraduate education. Faculty at PUIs may submit proposals to a broad range of NSF programs, consistent with eligibility requirements in program-specific solicitations and/or special competitions. Proposals from faculty at PUIs need not be submitted as RUI proposals, but doing so allows for an up-to-five-additional-page RUI Impact Statement and requires a Certification of RUI/ROA Eligibility. The RUI Impact Statement provides an opportunity to provide reviewers with information on the potential impact of the proposed research activity on the PIs institution and department, and on the faculty and student participants. The Certification of RUI/ROA Eligibility confirms at the institutional level that the criteria for RUI/ROA eligibility are met. (See Section V below for information on these documents).

RUI may also provide support for research instrumentation or other research tools depending on the availability of relevant funding opportunities in individual NSF divisions. (PUIs can also apply for instrument funding through NSF's Major Research Instrumentation (MRI) program (https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5260), which accepts proposals to obtain shared scientific and engineering instrumentation for research and research training. See the MRI solicitation for program-specific requirements.)

Research Opportunity Awards (ROAs). ROAs typically enable PUI faculty to pursue research as part of a collaborative research team as visiting scientists at other NSF-supported institutions. A ROA is intended to increase the PUI faculty member's research capability and effectiveness, to improve research and teaching at his or her home institution, and to enhance the NSF-funded research of the host principal investigator (PI). Most frequently, ROA activities are summer experiences, but partial support of sabbaticals is sometimes provided.

Prospective investigators should discuss their research plans with NSF program officers before considering submitting a formal RUI/ROA proposal or request. Program officers are typically listed as "Contacts" on program web pages. There are a number of ways to search for NSF programs including:

- **NSF Interdisciplinary/crosscutting programs:** Numerous programs specifically targeting interdisciplinary research and/or are Foundation-wide

- (crosscutting) opportunities exist at NSF. Examples of such opportunities can be found at: https://www.nsf.gov/funding/pgm_list.jsp?type=xcut.
- **Programs by topic:** Funding opportunities may be found by searching on keywords using the NSF "Find Funding" page at <https://nsf.gov/funding/>.
 - **Programs by Directorate/Division:** PIs may also search for appropriate programs through the NSF Directorate/Division webpages at <https://nsf.gov/staff/orglist.jsp>.
 - **NSF Award Search:** Abstracts of awards and the programs that funded them can be found at <https://www.nsf.gov/awardsearch/advancedSearch.jsp>. Use the "keyword" box to select word/phrases relevant to your proposed project.

For general RUI/ROA questions, please use the RUI/ROA points of contact information at https://www.nsf.gov/crssprgm/ruj_roa/contacts.jsp.

IMPORTANT NOTE: Proposed RUI/ROA activities are evaluated and funded by NSF programs in the disciplinary areas of the proposed research and are funded at their discretion. Funding for RUI/ROA awards is contained within research and education program allocations and not held as a separate allocation.

II. PROGRAM DESCRIPTION

A. Research in Undergraduate Institutions (RUI)

i. Objectives and General Characteristics of RUI

The RUI opportunity aims to: (1) support high-quality research by faculty at predominantly undergraduate institutions (PUI); (2) strengthen the research environment in academic departments that are primarily oriented toward undergraduate instruction; and (3) promote the integration of research and education of undergraduate students. The overriding purpose of RUI is to support faculty research, thereby maintaining faculty members' intellectual vibrancy in the classroom and within their research community, although the involvement of undergraduate students in research is an important feature of RUI. RUI awards augment the educational strengths of primarily undergraduate institutions by providing students with research-rich learning environments.

The principal difference between RUI proposals and standard NSF proposals is the required RUI Impact Statement and Certification of RUI/ROA Eligibility. The Certification of RUI/ROA Eligibility confirms at the institutional level that the criteria for RUI/ROA eligibility are met. The RUI Impact Statement describes the expected effects of the proposed research on the research and educational environment of the PUI. (See Section V below for information on these documents). RUI proposals are evaluated competitively alongside other proposals submitted to a given program, in accordance with the NSF's standard merit review procedures for that program. The National Science Board (NSB)-approved merit review criteria as outlined in the NSF PAPPG are used, along with any additional non-RUI review criteria indicated in a program's solicitation (if applicable). Note that special RUI reviewer instructions, which call attention to the RUI Impact Statement and the special circumstances under which RUI investigators work, are supplied to reviewers.

Proposals submitted through RUI are accepted in all fields of science and engineering supported by NSF, including research on learning and education. All RUI proposals must be submitted based on the guidance and timelines indicated by individual solicitations or program announcements/descriptions; there is no single deadline or target date for submission of RUI proposals. RUI proposals are evaluated and funded by NSF programs at their discretion based on available funding; funds for RUI is contained within research and education program allocations and not held as a separate allocation. Additionally, in some cases a pre-proposal or letter of intent may be required and such possibilities should be discussed with program officers prior to considering a proposal submission.

ii. Types of RUI Proposals

a. Single-Faculty Investigator and Collaborative-Faculty Investigators Research Projects

All NSF directorates participate in the RUI opportunity and consider research proposals submitted by individual PUI faculty members or groups of collaborating PUI investigators. It is expected that the research will usually be carried out at the PUI, but there may be circumstances under which the principal research site is another institution or a research facility (e.g., to provide access to critical instrumentation or environments). Proposals for RUI faculty research projects typically request support for salaries and wages, research assistantships, fringe benefits, travel, materials and supplies, publication costs and page charges, consultant services, essential equipment, field work, research at other institutions, and indirect costs. NSF's Grant Proposal Guide provides a thorough discussion of eligible costs. While it is expected that research assistants will typically be undergraduate students, support for masters-degree or doctoral students, full-time technicians or postdoctoral researchers may be appropriate for a particular research project.

Increasingly, advances in research depend on skills and knowledge that extend beyond traditional disciplinary boundaries and often require the combined skills of several investigators with different expertise. Collaborations within disciplines or across disciplinary boundaries can enhance the pace and productivity of faculty research while affording students the opportunity to learn teamwork and acquire a broader range of research skills. A successful collaborative project focuses on a research problem that is best approached from broad perspectives. The core of a collaborative RUI research proposal will include two or more faculty members and several undergraduates from one or more predominantly undergraduate institutions. As appropriate, other personnel and collaborators at other PUIs and/or other types of institutions may be involved.

b. Shared Research Instrumentation

The Foundation-wide Major Research Instrumentation (MRI) program (https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5260) should be explored as a first choice for research instrumentation requests. Instrumentation requests that are not appropriate for MRI may be considered directly by some NSF programs; however such opportunities vary among NSF programs and prospective PIs are strongly encouraged to contact program officers in relevant NSF programs to determine if instrumentation opportunities are available.

B. Research Opportunity Awards (ROAs)

i. Objectives and General Characteristics of ROAs

Research Opportunity Awards (ROAs) are typically used to enable faculty members at PUIs to pursue research as visiting scientists with NSF-supported investigators at other institutions. An ROA is intended to increase or maintain the visitor's research capability and effectiveness, to improve research and research teaching capabilities at his or her home institution, and to enhance the impacts and outcomes of the NSF-funded research of the host principal investigator. Most frequently, ROA activities are summer experiences but partial support of sabbaticals may sometimes be provided. ROA reviews and recommendations are made at the discretion of the program officer whose budget will provide the ROA funds. Funding for ROA activities is contained within research and education program allocations and not held as a separate allocation.

Any item acceptable for inclusion under a regular grant proposal (as detailed in the NSF Grant Proposal Guide) may, in principle, be included in an ROA budget. However, most NSF programs limit support to moderate amounts, frequently including only the costs of participation (e.g., salary and fringe benefits for the visitor, travel costs, and essential supplies). The duration of support generally ranges from 2 to 12 months.

ii. Types of ROA Requests

a. ROA Supplements and Re-budgeting of Existing NSF Awards

Requests for ROA supplements to existing NSF awards and requests to re-budget existing NSF awards to include ROA activities are submitted to NSF by the institution holding the existing NSF award. PUI faculty members interested in becoming ROA visiting researchers through ROA supplements make their own arrangements with existing NSF-supported investigators. Potential host researchers may be identified through the search of award abstracts on the NSF Web site (see Section I above). Alternatively, the PI of an ongoing NSF research grant may initiate ROA collaborations. The prospective visiting PUI ROA-supported researcher and host researcher should work together to develop a research plan and budget. The nature of the research responsibility, the duration of the ROA visit, the nature of the visitor's appointment, the rate of pay, and other arrangements with respect to employment, must be negotiated between the host institution, the host researcher, and the prospective visiting scientist and his/her home institution as the proposal is developed. Such requests generally involve NSF program officer review and are not subject to external merit review.

b. New Proposals with ROA Components

New proposals with ROA components may be submitted as linked collaborative proposals with one or more of the proposals representing an ROA component of the combined project, or as a single proposal with one or more subawards to support a ROA component of the combined project.

A linked collaborative proposal is one in which two or more organizations wish to collaborate on a research project. The linked collaborative proposal is reviewed as a single project and, if awarded, results in project funds being shared through separate awards to each of the submitting institutions. One or more of the (non-lead) proposals within such a linked collaborative may represent a new ROA activity for a faculty member(s) at a PUI; at least one of the proposals in the collaborative is from a research-intensive organization that serves as the lead in the collaborative. In this way, any PUI that submits a component of the linked collaborative receives and is credited with an award from NSF.

Another mechanism to request ROA funding for PUI faculty members is through a subaward within a new NSF proposal that is submitted by a research-intensive organization. Prior to proposal submission, the investigator(s) from a PUI would work closely with a PI from the research-intensive organization to establish roles and responsibilities in a collaborative research effort and to ensure that the contribution of the PUI investigator(s) to the project are incorporated into the proposal, including the subaward budget(s). Any NSF award would go only to the research-intensive organization, which would then provide funds to the PUI through a subaward.

Linked collaborative proposals with one or more proposals representing an ROA activity, or proposals from a research-intensive organization with a subaward(s) to a PUI, must be submitted based on the guidance and timelines indicated by individual solicitations or program announcements/descriptions. There is no single deadline or target date for submission of ROA proposals. These proposals are subject to the standard NSF merit review process and may be reviewed in panels, by ad hoc reviewers, or a combination of both methods. Additionally, in some cases a pre-proposal or letter of intent may be required and such possibilities should be discussed with program officers prior to considering a proposal submission.

III. AWARD INFORMATION

RUI awards for faculty research projects will typically be for a period of 3 years. In recent years, the annual award size of individual investigator RUI projects has ranged between \$75,000 and several hundred thousand dollars, although some awards are higher. Awards for collaborative proposals may be at a higher level, depending on the number of faculty and participants involved.

Typical ROA awards are for up to \$80,000 for periods of two to 12 months, although the amount varies depending on the type of request and duration.

The requested budget should be appropriate for the scope of the project being proposed. Many factors, including the nature of the project, number of investigators, and the project's duration affect the amount requested. Consultation with a cognizant NSF program officer is strongly encouraged to determine if the proposed budget is within the appropriate funding range for the particular program and circumstances.

IV. ELIGIBILITY INFORMATION

Who May Submit Proposals:

Proposals may only be submitted by the following:

- Eligible predominantly undergraduate institutions (PUIs) are accredited colleges and universities (including two-year community colleges) that award Associate's degrees, Bachelor's degrees, and/or Master's degrees in NSF-supported fields, but have awarded 20 or fewer Ph.D./D.Sci. degrees in all NSF-supported fields during the combined previous two academic years.

Who May Serve as PI:

See Additional Eligibility Information in Section IV.B of this solicitation.

Limit on Number of Proposals per Organization:

There are no restrictions or limits.

Limit on Number of Proposals per PI or co-PI:

The number of allowed proposals per PI varies by program and prospective PIs should contact cognizant program officers for guidance.

Additional Eligibility Info:

Eligibility to request support for RUI/ROA projects is outlined below and is based on institutional and PI criteria, both of which must be met. A representative of the institution submitting an RUI proposal must sign a Certification of RUI/ROA Eligibility (see Section V below for the required template) to be included in the Supplementary Documentation section of the proposal.

A. Eligible "predominantly undergraduate institutions" (PUIs) are defined by the nature of the institution and not solely on the basis of highest degree offered. Eligible PUIs are accredited colleges and universities (including two-year community colleges) that award Associate's degrees, Bachelor's degrees, and/or Master's degrees in NSF-supported fields, but have awarded 20 or fewer Ph.D./D.Sci. degrees in all NSF-supported fields during the combined previous two academic years.

RUI: RUI proposals involving more than one academic institution are permitted, but one predominantly undergraduate institution must have overall management responsibility. Collaborations between PUIs and other organizations may be proposed; however, most of the researchers must be at PUIs. Autonomous campuses in a system are considered independently, although they may be submitting their proposals through a central office. It is essential that a predominantly undergraduate campus be identified as the Primary Place of Performance on the proposal cover sheet. Each PUI must include a Certification of RUI/ROA Eligibility in the Supplementary Documents section of the proposal.

ROA: Requests involving ROA activities are managed according to the proposed ROA funding mechanism. If a new linked collaborative proposal is submitted, which includes a PUI(s) request for ROA activities, the PUI(s) assumes management responsibility for their portion of any award; the Certification of RUI/ROA Eligibility must be included as a supplementary document in the PUI's portion of the proposal. For new proposals from research-intensive organizations that include PUI ROA requests through subawards or ROA supplement requests, management responsibility rests with the research-intensive organization; the Certification of RUI/ROA Eligibility should be included as a supplementary document in the submitted proposal. For requests to rebudget existing NSF awards to include ROA activities, the Certification of RUI/ROA Eligibility should be sent to the cognizant NSF program officer by email.

B. Eligible principal investigators for RUI/ROA proposals must be employed by or have a commitment to be employed by an eligible home institution (i.e., a predominantly undergraduate institution) at the time the proposal is submitted. Co-principal investigators may be from other institutions or from doctoral departments.

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

Full Proposal Preparation Instructions: Proposers may opt to submit proposals in response to this Program Solicitation via Research.gov or Grants.gov.

- Full Proposals submitted via Research.gov: Proposals submitted in response to this program solicitation should be prepared and submitted in accordance with the general guidelines contained in the *NSF Proposal and Award Policies and Procedures Guide* (PAPPG). The complete text of the PAPPG is available electronically on the NSF website at: https://www.nsf.gov/publications/pub_summ.jsp?ods_key=pappg. Paper copies of the PAPPG may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-8134 or by e-mail from nsfpubs@nsf.gov. The Prepare New Proposal setup will prompt you for the program solicitation number.
- Full proposals submitted via Grants.gov: Proposals submitted in response to this program solicitation via Grants.gov should be prepared and submitted in accordance with the *NSF Grants.gov Application Guide: A Guide for the Preparation and Submission of NSF Applications via Grants.gov*. The complete text of the *NSF Grants.gov Application Guide* is available on the Grants.gov website and on the NSF website at: (https://www.nsf.gov/publications/pub_summ.jsp?ods_key=grantsgovguide). To obtain copies of the Application Guide and Application Forms Package, click on the Apply tab on the Grants.gov site, then click on the Apply Step 1: Download a Grant Application Package and Application Instructions link and enter the funding opportunity number, (the program solicitation number without the NSF prefix) and press the Download Package button. Paper copies of the Grants.gov Application Guide also may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-8134 or by e-mail from nsfpubs@nsf.gov.

In determining which method to utilize in the electronic preparation and submission of the proposal, please note the following:

Collaborative Proposals. All collaborative proposals submitted as separate submissions from multiple organizations must be submitted via Research.gov. PAPPG Chapter II.E.3 provides additional information on collaborative proposals.

See PAPPG Chapter II.D.2 for guidance on the required sections of a full research proposal submitted to NSF. Please note that the proposal preparation instructions provided in this program solicitation may deviate from the PAPPG instructions.

In general, preliminary proposals or letters of intent are not required for RUI proposals or proposals with an ROA component. If submitting a proposal under a special solicitation that requires preliminary proposals or letters of intent, follow the instructions in that solicitation. Only include a Certification of RUI/ROA Eligibility and/or an RUI Impact Statement in the preliminary proposal or letter of intent if instructed to do so by the cognizant program officer.

i. RESEARCH IN UNDERGRADUATE INSTITUTIONS (RUI) PROPOSALS

Unlike standard NSF proposals, RUI proposals must contain the following as supplemental documents:

1. a Certification of RUI/ROA Eligibility (see below); and
2. a separate RUI Impact Statement (see below).

The format of a RUI proposal must otherwise follow the guidelines in relevant program solicitations and the PAPPG (or the NSF Grants.gov Application Guide).

Note: when in conflict, solicitation guidance takes precedence. The following additional guidance for certain sections is provided to facilitate the preparation of an RUI proposal.

Cover Sheet. Along with the guidelines in the PAPPG or the NSF Grants.gov Application Guide for instructions on creating the Cover Sheet, please follow these instructions to ensure that your proposal is properly identified and directed.

- Program announcement/solicitation block. For a RUI proposal from a PUI, select only the number for this RUI/ROA solicitation; do not select another solicitation number, even if you are submitting in response to a specific NSF solicitation. (Instead identify any other solicitation number within the Project Summary.) At the next screen, select the Division and Program to which the proposal should be directed. In a collaborative submission, a non-PUI proposal that is linked to a RUI proposal in a collaborative should not be labeled as "RUI" and should be submitted to the relevant solicitation for the program that will provide funding.
- Title: Include the acronym "RUI:" in the proposal title on the Cover Sheet, e.g. "RUI: Metabolic Cycles in Arctic Ruminants." Also include any other appropriate program acronym in the title. Be sure to identify any other solicitation number in the Project Summary, and follow instructions in that solicitation to identify the appropriate Division and Program to which your RUI proposal should be directed. In a collaborative submission, a non-PUI proposal that is linked to a RUI proposal in the collaborative should not include "RUI" in the title.

Project Summary. Please follow the guidelines in the PAPPG or the NSF Grants.gov Application Guide for instructions on creating the Project Summary. Additionally, if relevant, within the Project Summary identify any program solicitation to which this RUI proposal is responding.

Biographical Sketches. Please follow the guidelines in the PAPPG or the NSF Grants.gov Application Guide for instructions on creating the Biographical Sketches. (Publications with undergraduate co-authors can be included and should be labeled by an asterisk and be so noted.)

Supplementary Documentation. See the PAPPG/ NSF Grants.gov Application Guide and RUI-specific guidance below.

- **Certification of RUI/ROA Eligibility.** A Certification of RUI/ROA Eligibility, *following the format below and executed by an Authorized Organizational Representative*, must be included in RUI/ROA requests. A current, signed Certification, included on institutional letterhead, should be scanned and included as a searchable PDF file in the proposal as Supplementary Documentation.

Certification of RUI/ROA Eligibility

By submission of this proposal, the institution hereby certifies that the originating and managing institution is an accredited college or university that awards Associate's degrees, Bachelor's degrees, and/or Master's degrees in NSF-supported fields, but has awarded 20 or fewer PhD/DSci degrees in all NSF-supported fields during the combined previous two academic years.

Authorized Organizational Representative.....

Typed Name and Title.....

Signature..... Date.....

- **RUI Impact Statement.** All RUI proposals must include a RUI Impact Statement that does not exceed five (5) pages. The statement is an opportunity to provide information that will help a reviewer to assess the likely impact of the proposed project on the research environment of the predominantly undergraduate institutions(s); the impact on the career(s) of the faculty participants, and on the ability of the involved department(s) to better prepare students for entry into advanced-degree programs and/or careers in science and engineering. An enhanced departmental environment may be reflected in direct student training in research and in increased involvement of the faculty in competitive research. These factors, in turn, may lead to improved student preparation, curricular impact and faculty development.

The RUI Impact Statement should highlight the record of the department(s) and institution(s) in educating undergraduates for science and engineering careers. The statement should also discuss the plans to attract qualified undergraduate students to the project, including the criteria for their selection, and any provisions that will increase the participation of groups underrepresented in science and engineering. (Underrepresented groups include women, persons with disabilities, African Americans, Hispanic Americans, Native Americans, Alaska Natives and Native Hawaiians and other Pacific Islanders.) It should explain any plans for measuring the effect of project participation on the participating students during and after their undergraduate years. Finally, the RUI Impact Statement should explain the anticipated contribution of any new research tools (instrumentation, databases, etc.) to both the education and research opportunities for students and faculty.

The RUI Impact Statement may include information on factors affecting research productivity, such as teaching loads, availability (or lack) of support personnel, nature of experimental and computational facilities, and features of the student population. It may also describe institutional support for research activity by faculty and students and the anticipated impact of that support on the proposed project.

- **Statements of Commitment.** The proposal should include signed statements of commitment on appropriate letterhead that document the commitment of proposed collaborations of significance to the project. These statements should be scanned and included as searchable PDF files in the proposal as supplementary documentation. Note that the nature of the collaboration itself should be described within the proposal - letters of support/endorsement are not permitted. Statements of commitment are especially relevant when collaborators are not employees of the awardee institution or when the project depends on access to facilities or instrumentation at other institutions.

ii. RESEARCH OPPORTUNITY AWARDS (ROA)

Since ROA activities typically occur away from the PUI campus, a RUI Impact Statement should not be included in a ROA request; otherwise the same type of information that is supplied for a RUI proposal should also be supplied for a ROA request.

a. New Proposals with ROA Components

Linked collaborative proposals with one submission representing an ROA activity, or a proposal with a ROA activity as a subaward, are submitted as standard NSF proposals following PAPPG/solicitation guidelines. A certification of RUI/ROA Eligibility is required (see above).

b. ROA Supplements and Re-budgeting of Existing NSF Awards

A formal request for an ROA supplement, or rebudgeting in an existing NSF award to support RUI activities, must be made by the host institution of the NSF-supported PI who wishes to host a faculty member from a PUI institution.

Arrangements for supplemental ROA support to an existing active NSF award should be discussed with the cognizant disciplinary program officer overseeing the award, and approval obtained prior to submission of the request. The formal ROA supplement request must be endorsed by the grantee organization and submitted at least 3 months before funds will be needed. The supplement request must include a description of the arrangements and the work to be performed

by the PUI faculty member, and a description of the contribution of this work to the NSF-supported project, to the PUI faculty member's future research and teaching efforts and to the impact on his/her home organization. The request should also specify a budget with appropriate explanatory information and include the PUI faculty member's biographical sketch. A certification of RUI/ROA eligibility is required. A RUI Impact Statement should not be included in a ROA supplement request.

If funds for the ROA are generated by rearranging the project budget of an ongoing NSF award without changing the scope of the project, notification of the NSF program officer is the only requirement. If the scope of the project will be changed, a formal grantee-initiated request to the NSF program officer is required. A certification of RUI/ROA eligibility and a biographical sketch for the PUI faculty member should be sent by email to the cognizant NSF program officer.

B. Budgetary Information

Cost Sharing:

Inclusion of voluntary committed cost sharing is prohibited.

C. Due Dates

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

Proposals Accepted Anytime

Submission deadlines vary by program and proposals must meet program-specific requirements to be considered for review. PIs should contact cognizant program officers for guidance.

All RUI proposals and proposals that contain an ROA component: PIs should contact the appropriate disciplinary program to obtain information about current program deadline dates for proposal submissions. Prospective PIs must consult with the appropriate disciplinary program prior to submitting a request for ROA supplemental funding or re-budgeting of funds in an existing NSF award to support ROA activities.

D. Research.gov/Grants.gov Requirements

For Proposals Submitted Via Research.gov:

To prepare and submit a proposal via Research.gov, see detailed technical instructions available at: https://www.research.gov/research-portal/appmanager/base/desktop?_nfpb=true&_pageLabel=research_node_display&_nodePath=/researchGov/Service/Desktop/ProposalPreparationandSubmission.html. For Research.gov user support, call the Research.gov Help Desk at 1-800-673-6188 or e-mail rgov@nsf.gov. The Research.gov Help Desk answers general technical questions related to the use of the Research.gov system. Specific questions related to this program solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this funding opportunity.

For Proposals Submitted Via Grants.gov:

Before using Grants.gov for the first time, each organization must register to create an institutional profile. Once registered, the applicant's organization can then apply for any federal grant on the Grants.gov website. Comprehensive information about using Grants.gov is available on the Grants.gov Applicant Resources webpage: <https://www.grants.gov/web/grants/applicants.html>. In addition, the NSF Grants.gov Application Guide (see link in Section V.A) provides instructions regarding the technical preparation of proposals via Grants.gov. For Grants.gov user support, contact the Grants.gov Contact Center at 1-800-518-4726 or by email: support@grants.gov. The Grants.gov Contact Center answers general technical questions related to the use of Grants.gov. Specific questions related to this program solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this solicitation.

Submitting the Proposal: Once all documents have been completed, the Authorized Organizational Representative (AOR) must submit the application to Grants.gov and verify the desired funding opportunity and agency to which the application is submitted. The AOR must then sign and submit the application to Grants.gov. The completed application will be transferred to Research.gov for further processing.

Proposers that submitted via Research.gov may use Research.gov to verify the status of their submission to NSF. For proposers that submitted via Grants.gov, until an application has been received and validated by NSF, the Authorized Organizational Representative may check the status of an application on Grants.gov. After proposers have received an e-mail notification from NSF, Research.gov should be used to check the status of an application.

VI. NSF PROPOSAL PROCESSING AND REVIEW PROCEDURES

Proposals received by NSF are assigned to the appropriate NSF program for acknowledgement and, if they meet NSF requirements, for review. All proposals are carefully reviewed by a scientist, engineer, or educator serving as an NSF Program Officer, and usually by three to ten other persons outside NSF either as *ad hoc* reviewers, panelists, or both, who are experts in the particular fields represented by the proposal. These reviewers are selected by Program Officers charged with oversight of the review process. Proposers are invited to suggest names of persons they believe are especially well qualified to review the proposal and/or persons they would prefer not review the proposal. These suggestions may serve as one source in the reviewer selection process at the Program Officer's discretion. Submission of such names, however, is optional. Care is taken to ensure that reviewers have no conflicts of interest with the proposal. In addition, Program Officers may obtain comments from site visits before recommending final action on proposals. Senior NSF staff further review recommendations for awards. A flowchart that depicts the entire NSF proposal and award process (and associated timeline) is included in PAPPG Exhibit III-1.

A comprehensive description of the Foundation's merit review process is available on the NSF website at: https://www.nsf.gov/bfa/dias/policy/merit_review/.

Proposers should also be aware of core strategies that are essential to the fulfillment of NSF's mission, as articulated in *Leading the World in Discovery and Innovation, STEM Talent Development and the Delivery of Benefits from Research - NSF Strategic Plan for Fiscal Years (FY) 2022 - 2026*. These strategies are integrated in the program planning and implementation process, of which proposal review is one part. NSF's mission is particularly well-implemented through the integration of research and education and broadening participation in NSF programs, projects, and activities.

One of the strategic objectives in support of NSF's mission is to foster integration of research and education through the programs, projects, and activities it supports at academic and research institutions. These institutions must recruit, train, and prepare a diverse STEM workforce to advance the frontiers of science and participate in the U.S. technology-based economy. NSF's contribution to the national innovation ecosystem is to provide cutting-edge research under the guidance of the Nation's most creative scientists and engineers. NSF also supports development of a strong science, technology, engineering, and mathematics (STEM) workforce by investing in building the knowledge that informs improvements in STEM teaching and learning.

NSF's mission calls for the broadening of opportunities and expanding participation of groups, institutions, and geographic regions that are underrepresented in STEM disciplines, which is essential to the health and vitality of science and engineering. NSF is committed to this principle of diversity and deems it central to the programs, projects, and activities it considers and supports.

A. Merit Review Principles and Criteria

The National Science Foundation strives to invest in a robust and diverse portfolio of projects that creates new knowledge and enables breakthroughs in understanding across all areas of science and engineering research and education. To identify which projects to support, NSF relies on a merit review process that incorporates consideration of both the technical aspects of a proposed project and its potential to contribute more broadly to advancing NSF's mission "to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense; and for other purposes." NSF makes every effort to conduct a fair, competitive, transparent merit review process for the selection of projects.

1. Merit Review Principles

These principles are to be given due diligence by PIs and organizations when preparing proposals and managing projects, by reviewers when reading and evaluating proposals, and by NSF program staff when determining whether or not to recommend proposals for funding and while overseeing awards. Given that NSF is the primary federal agency charged with nurturing and supporting excellence in basic research and education, the following three principles apply:

- All NSF projects should be of the highest quality and have the potential to advance, if not transform, the frontiers of knowledge.
- NSF projects, in the aggregate, should contribute more broadly to achieving societal goals. These "Broader Impacts" may be accomplished through the research itself, through activities that are directly related to specific research projects, or through activities that are supported by, but are complementary to, the project. The project activities may be based on previously established and/or innovative methods and approaches, but in either case must be well justified.
- Meaningful assessment and evaluation of NSF funded projects should be based on appropriate metrics, keeping in mind the likely correlation between the effect of broader impacts and the resources provided to implement projects. If the size of the activity is limited, evaluation of that activity in isolation is not likely to be meaningful. Thus, assessing the effectiveness of these activities may best be done at a higher, more aggregated, level than the individual project.

With respect to the third principle, even if assessment of Broader Impacts outcomes for particular projects is done at an aggregated level, PIs are expected to be accountable for carrying out the activities described in the funded project. Thus, individual projects should include clearly stated goals, specific descriptions of the activities that the PI intends to do, and a plan in place to document the outputs of those activities.

These three merit review principles provide the basis for the merit review criteria, as well as a context within which the users of the criteria can better understand their intent.

2. Merit Review Criteria

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?

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 other

underrepresented groups 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 United States; and enhanced infrastructure for research and education.

Proposers are reminded that reviewers will also be asked to review the Data Management Plan and the Postdoctoral Researcher Mentoring Plan, as appropriate.

Additional Solicitation Specific Review Criteria

Specific to RUI and ROA

RUI proposals are evaluated with all other proposals submitted to a given program in accordance with the Foundation's merit review procedures. The reviewers of these proposals usually include several individuals from predominantly undergraduate institutions, but also researchers from other institutions who are experts in the particular research area. Special reviewer instructions are supplied with the request for reviews. These instructions call attention to the RUI Impact Statement and the special circumstances under which PUI investigators work. Reviewers are also asked to recognize that the publication rate of PUI investigators and the pace of their research may be slower than at a major research university. The slower pace can be attributed to heavier teaching loads and limited availability of support personnel, facilities and equipment, as well as the involvement of undergraduates rather than graduate students in the research activities.

Reviewers will look for indications of impacts such as: increased faculty involvement in the mainstream of research; direct student experience in research; enhanced departmental ability to prepare students for entry into graduate study or scientific and engineering careers; and creation of a research-enriched learning environment for all students. Evaluation of research instrumentation proposals may consider additional factors, including the criticality of the instrumentation for the research proposed, the expected extent of usage of the instrumentation and the number of investigators and students benefiting and the institution's commitment for operation and maintenance.

Review of proposals with ROA components is similar to that of RUI proposals, except that no RUI Impact Statement is included. ROA supplements or requests to rebudget an existing NSF award for ROA activities are reviewed internally by the program officer for the existing NSF award. Consideration is given to the capability of the investigators, the technical soundness of the proposed effort, the contribution of the ROA activity to the ongoing research project, and its potential impact upon the PUI investigator and his/her institution.

B. Review and Selection Process

Proposals submitted in response to this program solicitation will be reviewed by Ad hoc Review and/or Panel Review.

Reviewers will be asked to evaluate proposals using two National Science Board approved merit review criteria and, if applicable, additional program specific criteria. A summary rating and accompanying narrative will generally be completed and submitted by each reviewer and/or panel. The Program Officer assigned to manage the proposal's review will consider the advice of reviewers and will formulate a recommendation.

After scientific, technical and programmatic review and consideration of appropriate factors, the NSF Program Officer recommends to the cognizant Division Director whether the proposal should be declined or recommended for award. NSF strives to be able to tell applicants whether their proposals have been declined or recommended for funding within six months. Large or particularly complex proposals or proposals from new awardees may require additional review and processing time. The time interval begins on the deadline or target date, or receipt date, whichever is later. The interval ends when the Division Director acts upon the Program Officer's recommendation.

After programmatic approval has been obtained, the proposals recommended for funding will be forwarded to the Division of Grants and Agreements or the Division of Acquisition and Cooperative Support for review of business, financial, and policy implications. After an administrative review has occurred, Grants and Agreements Officers perform the processing and issuance of a grant or other agreement. Proposers are cautioned that only a Grants and Agreements Officer may make commitments, obligations or awards on behalf of NSF or authorize the expenditure of funds. No commitment on the part of NSF should be inferred from technical or budgetary discussions with a NSF Program Officer. A Principal Investigator or organization that makes financial or personnel commitments in the absence of a grant or cooperative agreement signed by the NSF Grants and Agreements Officer does so at their own risk.

Once an award or declination decision has been made, Principal Investigators are provided feedback about their proposals. In all cases, reviews are treated as confidential documents. Verbatim copies of reviews, excluding the names of the reviewers or any reviewer-identifying information, are sent to the Principal Investigator/Project Director by the Program Officer. In addition, the proposer will receive an explanation of the decision to award or decline funding.

VII. AWARD ADMINISTRATION INFORMATION

A. Notification of the Award

Notification of the award is made to *the submitting organization* by an NSF Grants and Agreements Officer. Organizations whose proposals are declined will be advised as promptly as possible by the cognizant NSF Program administering the program. Verbatim copies of reviews, not including the identity of the reviewer, will be provided automatically to the Principal Investigator. (See Section VI.B. for additional information on the review process.)

B. Award Conditions

An NSF award consists of: (1) the award notice, which includes any special provisions applicable to the award and any numbered amendments thereto; (2) the budget, which indicates the amounts, by categories of expense, on which NSF has based its support (or otherwise communicates any specific approvals or disapprovals of proposed expenditures); (3) the proposal referenced in the award notice; (4) the applicable award conditions, such as Grant General Conditions (GC-1)*; or Research Terms and Conditions* and (5) any announcement or other NSF issuance that may be incorporated by reference in the award notice.

Cooperative agreements also are administered in accordance with NSF Cooperative Agreement Financial and Administrative Terms and Conditions (CA-FATC) and the applicable Programmatic Terms and Conditions. NSF awards are electronically signed by an NSF Grants and Agreements Officer and transmitted electronically to the organization via e-mail.

*These documents may be accessed electronically on NSF's Website at https://www.nsf.gov/awards/managing/award_conditions.jsp?org=NSF. Paper copies may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-8134 or by e-mail from nsfpubs@nsf.gov.

More comprehensive information on NSF Award Conditions and other important information on the administration of NSF awards is contained in the NSF *Proposal & Award Policies & Procedures Guide* (PAPPG) Chapter VII, available electronically on the NSF Website at https://www.nsf.gov/publications/pub_summ.jsp?ods_key=pappg.

Administrative and National Policy Requirements

Build America, Buy America

As expressed in Executive Order 14005, *Ensuring the Future is Made in All of America by All of America's Workers* (86 FR 7475), it is the policy of the executive branch to use terms and conditions of Federal financial assistance awards to maximize, consistent with law, the use of goods, products, and materials produced in, and services offered in, the United States.

Consistent with the requirements of the Build America, Buy America Act (Pub. L. 117-58, Division G, Title IX, Subtitle A, November 15, 2021), no funding made available through this funding opportunity may be obligated for an award unless all iron, steel, manufactured products, and construction materials used in the project are produced in the United States. For additional information, visit NSF's [Build America, Buy America](#) webpage.

C. Reporting Requirements

For all multi-year grants (including both standard and continuing grants), the Principal Investigator must submit an annual project report to the cognizant Program Officer no later than 90 days prior to the end of the current budget period. (Some programs or awards require submission of more frequent project reports). No later than 120 days following expiration of a grant, the PI also is required to submit a final project report, and a project outcomes report for the general public.

Failure to provide the required annual or final project reports, or the project outcomes report, will delay NSF review and processing of any future funding increments as well as any pending proposals for all identified PIs and co-PIs on a given award. PIs should examine the formats of the required reports in advance to assure availability of required data.

PIs are required to use NSF's electronic project-reporting system, available through Research.gov, for preparation and submission of annual and final project reports. Such reports provide information on accomplishments, project participants (individual and organizational), publications, and other specific products and impacts of the project. Submission of the report via Research.gov constitutes certification by the PI that the contents of the report are accurate and complete. The project outcomes report also must be prepared and submitted using Research.gov. This report serves as a brief summary, prepared specifically for the public, of the nature and outcomes of the project. This report will be posted on the NSF website exactly as it is submitted by the PI.

More comprehensive information on NSF Reporting Requirements and other important information on the administration of NSF awards is contained in the NSF *Proposal & Award Policies & Procedures Guide* (PAPPG) Chapter VII, available electronically on the NSF Website at https://www.nsf.gov/publications/pub_summ.jsp?ods_key=pappg.

VIII. AGENCY CONTACTS

Please note that the program contact information is current at the time of publishing. See program website for any updates to the points of contact.

General inquiries regarding this program should be made to:

- See Section VIII Contacts Below, telephone: 703-292-5111, email: info@nsf.gov

For questions related to the use of NSF systems contact:

- NSF Help Desk: 1-800-673-6188
- Research.gov Help Desk e-mail: rgov@nsf.gov

For questions relating to Grants.gov contact:

- Grants.gov Contact Center: If the Authorized Organizational Representatives (AOR) has not received a confirmation message from Grants.gov within 48 hours of submission of application, please contact via telephone: 1-800-518-4726; e-mail: support@grants.gov.

RUI/ROA inquiries regarding this announcement should be directed to discipline-specific contacts found at https://www.nsf.gov/crssprgm/rui_roa/contacts.jsp.

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>.

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 proposal forms and project reports is solicited under the authority of the National Science Foundation Act of 1950, as amended. The information on proposal forms will be used in connection with the selection of qualified proposals; and project reports submitted by awardees will be used for program evaluation and reporting within the Executive Branch and to Congress. The information requested may be disclosed to qualified reviewers and staff assistants as part of the proposal review process; to proposer institutions/grantees to provide or obtain data regarding the proposal review process, award decisions, or the administration of awards; to government contractors, experts, volunteers and researchers and educators as necessary to complete assigned work; to other government agencies or other entities needing information regarding applicants or nominees as part of a joint application review process, or in order to coordinate programs or policy; and to another Federal agency, court, or party in a court or Federal administrative proceeding if the government is a party. Information about Principal Investigators may be added to the Reviewer file and used to select potential candidates to serve as peer reviewers or advisory committee members. See [System of Record Notices](#), NSF-50, "Principal Investigator/Proposal File and Associated Records," and NSF-51, "Reviewer/Proposal File and Associated Records." Submission of the information is voluntary. Failure to provide full and complete information, however, may reduce the possibility of 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 3145-0058. Public reporting burden for this collection of information is estimated to

average 120 hours per response, including the time for reviewing instructions. Send comments regarding the 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
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