NSF 23-525: Oceanographic Facilities and Equipment Support

Program Solicitation

Document Information

Document History

- **Posted:** December 2, 2022
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National Science Foundation
Directorate for Geosciences
Division of Ocean Sciences

Full Proposal Target Date(s):

February 28, 2023

January 10, 2024

January 10, Annually Thereafter

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Important Information And Revision Notes

Note that this solicitation differs from NSF 19-602 primarily in that it does not include Ship Operations, which is under a separated solicitation. Also removed are Ship Acquisition and Upgrade (SAU) and Other Facility Activities (OFA).

Proposals submitted in response to this program solicitation must be prepared and submitted via Research.gov or via Grants.gov and may not be prepared or submitted via FastLane.

Any proposal submitted in response to this solicitation should be submitted in accordance with the *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:

Oceanographic Facilities and Equipment Support

Synopsis of Program:

Oceanographic facilities and equipment are supported by the Integrative Programs Section (IPS) of the Division of Ocean Sciences (OCE), Directorate for Geosciences (GEO). These awards are made for the procurement, conversion and/or upgrade, enhancement, or annual operation of platforms in the ocean, coastal and near-shore waters, and Great Lakes. Awards are generally directed specifically to support facilities that lend themselves to shared use within the broad range of Federally supported research and education programs. Most of these platforms and facilities also receive partial support from other federal agencies, state and local governments, and private sources on a proportional basis usually through a daily rate mechanism. The primary objective of these awards is to ensure the availability of appropriate oceanographic facilities for Federally funded investigators and educators. Individual project-based facilities and instrumentation, limited to one, or a small group of, investigator(s), should be supported through appropriate research programs as opposed to through the IPS programs listed herein.

The individual programs covered within this solicitation include:

1. Oceanographic Technical Services (Tech Services)

2. Oceanographic Instrumentation (OI)
3. Shipboard Scientific Support Equipment (SSSE)

Oceanographic Technical Service (Tech Services): The Tech Services Program provides support of institutional technical services to enhance the scientific productivity of research programs, aboard research vessels and in shore-based, shared-use facilities. Research vessel technical services include quality assurance, scheduling of technical support, logistical assistance, and at-sea supervision of the instrumentation and shared-use equipment available to sea-going researchers. This program also provides baseline operational support for the University-National Oceanographic Laboratory System (UNOLS) equipment pools (wire, vans and winches). Support of research vessel technical services and UNOLS equipment pools includes salaries and related expenses, maintenance and calibration of sensors and instrumentation, and associated travel. Oceanographic technical services support requests must be directly attributable to NSF-sponsored science. With the exception of the wire pool, requests for new or replacement capital equipment must be made through the SSSE or OI programs.

Oceanographic Instrumentation (OI): The OI Program provides support to enhance the scientific capabilities and productivity of seagoing research projects that utilize research vessels as well as shore-based, shared-use facilities. Proposals may include shared-use instrumentation for the collection, processing, and analysis of oceanographic data. Typical instrumentation includes sensors, acoustic systems, data loggers, water sampling rosettes, biological net systems, coring equipment and auto-analyzers. Proposals must be for instrumentation that will support multiple research projects. OI proposals are generally submitted by the institution's Tech Services manager whose operational funding is provided through the OCE Technical Services Program.

Shipboard Scientific Support Equipment (SSSE): The SSSE Program provides support to improve safety and enhance scientific capabilities and productivity of seagoing research programs that utilize research vessels as well as shore-based, shared-use facilities.. Proposals may include new permanent or portable equipment required to outfit a vessel to conduct oceanographic research as well as overhaul of equipment previously funded under this program, including science handling systems (winches, frames, cranes, etc.), navigation and communication equipment, and safety and regulatory-related items. Requests for purchase of new winch pool or van pool capital equipment must be submitted to this program. SSSE proposals are generally submitted by the institution's Marine Superintendent whose operational funding is provided through the Ship Operations Program in OCE.

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.

- Timothy M. McGovern, telephone: (703) 292-4248, email: tmcgover@nsf.gov
- Laura W. Stolp, telephone: (703) 292-8293, email: lstolp@nsf.gov
- Brian P. Midson, telephone: (703) 292-8145, email: bmidson@nsf.gov

Applicable Catalog of Federal Domestic Assistance (CFDA) Number(s):

- 47.050 --- Geosciences

Award Information

Anticipated Type of Award: Standard Grant or Continuing Grant or Cooperative Agreement

Estimated Number of Awards: 25 to 50

1. **Oceanographic Technical Services (Tech Services).** Awards will be made in the form of a five-year, continuing grant, however other funding mechanisms may be considered.

2. **Oceanographic Instrumentation (OI).** Awards will be made in the form of a one or **two-year** standard grant, depending on the award.
3. **Shipboard Scientific Support Equipment (SSSE).** Awards will be made in the form of a one or **two-year** standard grant, depending on the award.

Anticipated Funding Amount: $47,500,000

Funding under this solicitation is intended to cover the three previously listed facilities programs within OCE.

Each program is anticipated to have several awards over the solicitation performance period.

Estimated program budget and number of awards are subject to the availability of funds.

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.
- Non-profit, non-academic organizations: Independent museums, observatories, research labs, professional societies and similar organizations in the U.S. associated with educational or research activities.

Who May Serve as PI:

There are no restrictions or limits.

Limit on Number of Proposals per Organization:

There are no restrictions or limits.

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

There are no restrictions or limits.

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:**

  Other budgetary limitations apply. Please see the full text of this solicitation for further information.

C. Due Dates

- **Full Proposal Target Date(s)**:

  February 28, 2023

  January 10, 2024

  January 10, Annually Thereafter

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:

Additional award conditions apply. Please see the full text of this solicitation for further information.

Reporting Requirements:

Additional reporting requirements apply. Please see the full text of this solicitation for further information.

I. Introduction

A. Background

NSF supports construction, conversion, acquisition, and operation of major shared-use oceanographic facilities. The University-National Oceanographic Laboratory System (UNOLS) schedules the use of these facilities and other expeditionary programs. The Programs described in this solicitation support facilities necessary to conduct Federally funded research and training of oceanographers. Examples of these facilities and support services are ships, submersibles, large shipboard equipment, shared-use instruments to collect and analyze data, sea-going technical staff, pooled equipment management, at-sea internet connectivity and data repository services.

NSF highly encourages routine institutional purchase of ship and technical support days for science and educational outreach purposes, as well as support from non-federal sources for oceanographic research activities.

The Division of Ocean Sciences (OCE) comprises three Sections: Integrative Programs (IPS), Marine Geosciences (MGS), and Ocean Sciences (OS). IPS comprises the Ship Operations Program (Ship Ops), Ship Acquisition and Upgrade (SAU), Oceanographic Technology and Interdisciplinary Coordination (OTIC) Program, Oceanographic Education (OE) Program, Ocean Drilling Program (ODP), and the Ocean Observatories Initiative (OOI), as well as the programs pertaining to oceanographic facilities described in this solicitation.

Oceanographic facility awards are made for the operation, conversion, and upgrade of open-ocean, coastal, near-shore and Great Lakes platforms, instrumentation, equipment, and technical support services used for research and educational programs. Awards are principally directed to support large facilities that lend themselves to shared usage. Most of these facilities also receive partial support from other Federal agencies, state and local governments, and private sources. The primary objective of these awards is to ensure the availability of appropriate oceanographic facilities for NSF-funded investigators and education programs. Individual project-based facilities and instrumentation, limited to one, or a small group of, investigator(s), are supported through appropriate research programs, not IPS programs.

B. Science Imperatives

Vessels in the U.S. Academic Research Fleet (ARF) provide at-sea laboratories necessary to effectively and safely support oceanographic scientists, post-doctoral scholars, graduate and undergraduate students as well as engineers, technicians, and teachers as they pursue fundamental questions in marine science. These intellectual endeavors broaden human understanding, and spur new questions, about the largest and most influential environment on the surface of the planet. The ARF and related facilities are instrumental in collecting the observational and physical data that are critical in advancing human understanding of how these dynamic and natural processes work and affect our environment. The data collected and archived have led to the identification of new energy resources, have aided the discovery of life in extreme environments at and below the sea floor, and have enabled the search for marine organisms with the potential to treat human disease. At-sea sampling and observing have allowed researchers to:

- Better understand, model, and predict the responses of marine populations to long- and short-term changes in ocean conditions;
- More fully understand the physical state of the earth with regard to seismic activity and its effects on human populations; and,
- Discover changes in deep ocean circulation and heat distribution around the planet, leading to a better understanding of causes and consequences of climate change.

Oceanographic expeditions are also an extension of university classrooms and consistently provide extraordinary educational experiences. Voyages expose participants to new ideas, teach fundamental scientific principles through observation and practice, and inevitably raise questions that stimulate new thinking about how the oceans work. An increased awareness of humanity's responsibility to bring this science into the classroom and to the public has resulted in the development of new avenues to share these scientific findings. The internet is now routinely and effectively bringing active science to classrooms with real-time images, data and two-way communication between scientists at sea and students in schools across the country. These efforts have extended the sea-going experience from a handful of participants to thousands of students across the country, as well as to the general public. Scientists on academic research vessels use these opportunities to present their data through web-based approaches either at their home institutions or through websites maintained by community organizations.

II. Program Description

The objective of this solicitation is to provide properly equipped and managed facilities in support of oceanographic research primarily funded by NSF.

Relationship to other NSF Programs: OCE facility awards are generally limited to support for shared-use facilities. Other facility or equipment requirements generated by a single research project should be included as an integral part of the scientific funding request for that project. Prospective principal investigators seeking scientific support should refer to the NSF website (https://beta.nsf.gov/funding) for information about funding opportunities and science program descriptions.

All OCE research proposals and any proposal submitted to NSF requesting support for research ship time must include a UNOLS Ship-time & Marine Equipment Request Form (SME). The SME serves several purposes:

1. Identifies sea-going field work projects requiring research vessel support;
2. Enables OCE to predict and plan for vessel, technical services, and equipment requirements; and
3. Assists ship operators and program managers in preparing ship schedules and cruise logistics.

The ship time request form can be obtained from the UNOLS web site (https://www.mfp.us/programme/map). Any investigator who needs assistance in requesting ship time should contact the UNOLS Office at office@unols.org.

The individual programs covered within this solicitation include:

1. Oceanographic Technical Services (Tech Services)
2. Oceanographic Instrumentation (OI)
3. Shipboard Scientific Support Equipment (SSSE)

Detailed descriptions of the programs are provided below. Additional information and guidance on using the specific templates should be accessed at https://www.nsf.gov/geo/oce/programs/ips/index.jsp.

1. Oceanographic Technical Services Program (Tech Services)

The purpose of the Oceanographic Technical Services (Tech Services) Program is to enhance the scientific productivity of research programs that utilize vessels of the ARF, as well as shore-based, shared-use facilities. The shore-based facilities offer support to the ARF through access to a centralized facility, rather than requiring each institution to duplicate efforts. The shared-use facilities include two winch pools, two van pools and a wire pool. In addition, the following shared-use facilities are supported through the Technical Service Program: Rolling Deck to Repository (R2R) (long-term underway data management), SWAB (radioisotope testing), University of Hawaii Data Acquisition System (UHDAS) (ADCP support), HiSeasNet (internet connectivity), MARine Sediment SAMpling (MARSSAM) (coring and dredging support), Multibeam Advisory Committee (MAC) (multibeam sonar support), SATellite Network Advisory Group (SATNAG), and the Technician Pool.

Tech Services includes the maintenance and calibration of instruments/sensors, logistical assistance, the management of shore-based equipment pools, and at-sea support of the instrumentation and shared-use equipment available to sea-going researchers.

Except for shore-based facilities, all institutions requesting Tech Services funding must provide basic at-sea and shore-based technical services (Basic Services, described below). The full extent of Basic Services considered for support depends on the shared-use instruments made available, the scientific capabilities of the research vessel(s), and the management structure of the technical support activities.

Institutions may also include requests for Specialized Support Services associated with NSF-funded shipboard research projects. To qualify for such support, the specialized shared-use instrumentation must be maintained and operated under the direction of the Tech Services Program.

Activities in support of Basic Services should be addressed in the narrative sections of the proposal. These sections should describe the institution's plan for the fundamental activities necessary for the successful completion of all scientific research expeditions utilizing shipboard and shared-use instrumentation, including shore and sea-going support provided to all ship users as well as the training and travel necessary to do so effectively. Typical Basic Services activities include, but are not limited to:

Basic Technician Activities Ashore:

1. Communication and coordination in preparation of each research expedition.
2. Logistics of loading, unloading and shipping.

3. Management, calibration and repair of shipboard and shared-use instrumentation and satellite communication systems.
4. Management of data including distribution and contribution to R2R.

Basic Technician Activities at Sea:

1. Support and operation of shipboard and shared-use instrumentation and satellite communication systems.
2. Serve as a liaison between the research vessel and scientific staff including safety and over the side operations.
3. Assistance with installation and removal, operation of, and interfacing with temporarily installed PI-provided equipment.

Charges for Basic Services are based on the total annual operating days of each ship and represented as a daily rate for each ship. This day rate multiplied by the total number of operating days will represent the total operating budget for Basic Services.

Specialized Support Services are for the costs to support efforts that are not distributed to all users (i.e., not included in the day rate), and that require technical support beyond basic services for their successful operation. Examples include the Oceanographic Data Facility (ODF) for processing of hydrographic data; additional, cruise-specific technicians; portable seismic support; internet expansions, etc. This is not limited to expeditions scheduled aboard the institution's own vessels and is often provided through the shared-use facilities described above. Support for these services is not included in the Basic Services day rate and is charged only to those who use the service.

In general, the maintenance and calibration for shared-use instrumentation falls under the Basic Services component of the Program. However, the following activities are appropriate to consider for Specialized Support Services:

1. Shipping specialized instruments to research vessel
2. Installation of specialized instruments on research vessel
3. Technician(s) salary and overtime required for operation of specialized instruments
4. Expenses associated with the support of additional basic services technician(s) at-sea when previously approved by program manager
5. Spare parts and expendable supplies required for operation of specialized instruments

The Program will evaluate each request for a Specialized Support Service individually and requires a budget for each specialized effort. The Program does not allow for requests for:

1. Upkeep and operation of scientific instrumentation that is under development or maintained for individual research projects
2. Routine underway watch-standing
3. Data reduction or analysis

2. Oceanographic Instrumentation (OI)

The purpose of the Oceanographic Instrumentation Program is to enhance the scientific capabilities and productivity of Federally funded oceanographic field research projects that utilize the ARF research vessels as well as shore-based, shared-use facilities. A principal criterion for this Program is that the instrumentation requested is for shared use. Shared-use instrumentation is operated, maintained, and repaired by the requesting institution. It is expected to be made available for use on other vessel/projects when possible. Costs associated with maintenance and operation of instrumentation acquired under this program will be included in the institution's Tech Services Program proposal.

Proposals may include "shipboard" instrumentation, which is predominantly installed for operation aboard a single vessel, or "portable" instruments that will be made available to other ARF vessels. Examples of "shipboard" instruments include, but are not limited to, shipboard computer networks, meteorological sensor suites, and hull-mounted sonars. Items considered "portable" instruments include biological net systems, coring equipment, towed instruments such as

undulating profilers or side-scan sonars, current meters, moored current profilers, surface buoy systems and associated instruments.

Proposals for the acquisition or upgrade of specialized instrumentation utilized in a shore-based laboratory (e.g., mass spectrometers, department computer systems) are not eligible for support under the OI Program. This type of proposal should be submitted to the appropriate research program in OCE or to the NSF Major Research Instrumentation (MRI) program. OI requests must be justifiable in terms of multi-project utilization in support of NSF-funded science. Instrumentation or equipment that is project-specific in nature, i.e., justifiable only in terms of a single project or principal investigator, is not eligible for support from the OI Program. These requests should be submitted to the appropriate science program.

Proposals for instrumentation may include costs associated with design or fabrication if it is demonstrably more efficient to build it in-house rather than to purchase it commercially. Appropriate documentation should be provided to address this. Costs associated with installation may also be included. Routine maintenance items should be included with the appropriate Ship Operations or Tech Services Program and are not appropriate for OI.

Costs for instruments less than $5000 will not be considered for award. These should be procured through the appropriate Ship Operations or Tech Services programs. It is acceptable to request funding for composite systems of lower cost components where a suitable justification for the component nature of the system is provided

3. Shipboard Scientific Support Equipment (SSSE)

The purpose of the Shipboard Scientific Support Equipment (SSSE) Program is to improve safety, promote regulatory compliance, and enhance scientific capabilities and productivity of Federally funded oceanographic research projects that utilize research vessels as well as shore-based, shared-use facilities. All equipment funded through the SSSE Program is considered shared use. Shared-use equipment is operated, maintained, and repaired by the requesting institution. It is expected to be made available for use on other vessel/projects when possible. Costs associated with maintenance and operation of equipment acquired under this program will be included in the institution's Ship Operations or Tech Services Program as appropriate.

Proposals may include "permanent" installations or "portable" equipment required to upgrade or enhance the capabilities of an existing oceanographic research vessel. This includes equipment such as load-handling systems and components (winches, cranes, frames, etc.), navigation and communication equipment, and safety and regulatory-related items.

Requests must be justifiable in terms of multi-project utilization in support of NSF-funded science. Equipment that is project-specific in nature, i.e., justifiable only in terms of a single project or principal investigator, is not eligible for support from the SSSE Program. These requests should be submitted to the appropriate science Program. Routine maintenance items should be included in the appropriate Ship Operations or Tech Services Program and are not appropriate for SSSE.

Costs for equipment less than $5,000 will not be considered for award. These should be procured through the appropriate Ship Operations or Tech Services programs. It is acceptable to request funding for composite systems of lower cost components. where a suitable justification for the component nature of the system is provided.

III. Award Information

Anticipated Type of Award: Continuing Grant or Cooperative Agreement or Standard Grant

Estimated Number of Awards: 25 to 50

Multiple grants and/or cooperative agreements (CAs) are expected to be made under this solicitation based on annual operational requirements in support of federally funded science.

Anticipated Funding Amount: $47,500,000 annually, subject to the availability of funds

IV. 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.
- Non-profit, non-academic organizations: Independent museums, observatories, research labs, professional societies and similar organizations in the U.S. associated with educational or research activities.

Who May Serve as PI:

There are no restrictions or limits.

Limit on Number of Proposals per Organization:

There are no restrictions or limits.

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

There are no restrictions or limits.

Additional Eligibility Info:

OCE support for major facilities is distributed throughout the U.S. at a number of institutions suitably located and geographically positioned to carry out operations in support of ocean science research and education. Ship operator institutions may include IHEs, non-profit research institutions, and associations of colleges and universities. To qualify for an award from this solicitation, an institution must have a substantial in-house ocean science research program and must demonstrate the capability to operate the facility effectively and economically with procedures to support qualified researchers from other parts of the oceanographic community. Appropriate quality control, safety, shared-use instrumentation access and technical support procedures must be provided. Except for the shared-use pools, A concurrent Ship Operations Program award is required to qualify for Tech Services support.

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 addition to the guidance in the PAPPG and NSF Grants.gov Application Guide, the following proposal preparation instructions should be followed for all proposals. Additionally, individual programs have other specific proposal preparation guidelines that must be followed. These instructions are listed below.

For awards issued to existing Major Facilities you must also follow any proposal instructions or requirements in the Research Infrastructure Guide at https://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf21107.

General Proposal Preparation Instructions

1. **Page Limits**. Proposals under this solicitation are exempt from the 15-page project description limit. Instead, they have a 45-page project description limit with a total limit of 250 pages (including the special information and supplementary documents). The entire proposal, including all charts, diagrams, and figures, must be submitted via Research.gov or Grants.gov. Due to the complexity of the proposals being submitted, however, use of Research.gov to prepare and submit proposals is strongly encouraged.
2. **References Cited**. These Programs do not require a "References cited" section, however this is a required section of the proposal. To enable Research.gov to accept your proposal, upload a document that states "This proposal contains no references."
3. **Facilities, Equipment and Other Resources**. These Programs do not require a "Facilities, Equipment and Other Resources" section, however this is a required section of the proposal. To enable Research.gov to accept your proposal, upload a document that states "See Project Description."

Specific Proposal Preparation Instructions by Program

Additional supplementary documentation that may be required for programs in this solicitation is listed below.

1. Oceanographic Technical Services Program (Tech Services)

All Technical Services proposals must contain the following, see Oceanographic Technical Services Format & Tables available at https://www.nsf.gov/geo/oce/programs/ips/index.jsp.

Cover Sheet

- TITLE OF PROPOSED PROJECT: "Institution/Vessel Name Oceanographic Technical Services - Year X of 5"
- NSF ORGANIZATION UNIT: "OCE - Oceanographic Technical Services"
- FUND CODE: 5415

Project Description

- Section 1: Description of Management Structure
- Section 2: Inventory of Shared Use Equipment
- Section 3: Basic Technical Services Provided
- Section 4: Basic Services Proposed Year Program Plan
    - Operating Days (Tech Services Table 4.1)
    - Personnel Calendar Months Charged to Basic Services (Tech Services Table 4.2)
    - Summary 12 Month Basic Services Budget (Tech Services Table 4.3)
        - Salaries, Wages and Fringe (by calendar year) (Tech Services Table 4.3.I)
        - Other Direct Costs (by calendar year) (Tech Services Table 4.3.II)
        - Indirect Costs (by calendar year) (Tech Services Table 4.3.III)
        - Total Basic Services Program Budget (by calendar year) (Tech Services Table 4.3.IV)
        - Reductions/Additions to NSF Request (by calendar year) (Tech Services Table 4.3.V)
        - Final NSF Basic Services Request (by calendar year) (Tech Services Table 4.3.VI)
- Section 5: Specialized Support Services for Proposed Year (if applicable)
    - Summary of Specialized Support Services (Tech Services Table 5.1)
    - Specialized Support Services 12 Month Budget(s) (Tech Services Table(s) 5.2.X)
    - Specialized Support Services NSF Carry-forward (Tech Services Table 5.3)
    - Total NSF Specialized Support Services Request
- Section 6: Technician Exchanges and Tech Pool Usage (Tech Services Table 6.1)
- Section 7: Total NSF Request Summary (Tech Services Table 7.1)
- Section 8: Post Cruise Assessment Review
- Section 9: Broader Impacts

For proposals and reports for the van, wire and winch pools, see Oceanographic Pool Services Format & Tables available at https://www.nsf.gov/geo/oce/programs/ips/index.jsp.

Cover Sheet

- TITLE OF PROPOSED PROJECT: "Institution Pool Services - Year X of 5"
- NSF ORGANIZATION UNIT: "OCE - Oceanographic Technical Services"
- FUND CODE: 5415

Project Description

- Section 1: Description of Management Structure
- Section 2: Inventory of Pooled Equipment (Pool Services Table 1.1)
- Section 3: Pool Operation Description
- Section 4: Previous Year
    - Usage (Pool Services Table 2.1)
    - Budget (Pool Services Table 2.2)
        - Personnel Costs
        - Travel

        - Maintenance services and supplies
        - Other Direct Costs
        - Logistics (Crane, Shipping, etc.) - NSF/OCE only
- Section 5: Current Year
    - Personnel Calendar Months (Pool Services Table 3.1)
    - Estimated Usage (Pool Services Table 3.2)
    - Proposed Budget (Pool Services Table 3.3)
        - Personnel Costs
        - Travel
        - Maintenance services and supplies
        - Other Direct Costs
        - Logistics (Crane, Shipping, etc) - NSF/OCE only
- Section 6: Total NSF Request Summary (Pool Services Table 4.1)
- Section 7: Broader Impacts

2. Oceanographic Instrumentation (OI)

All proposals must contain the following, see Oceanographic Instrumentation Format & Tables available at https://www.nsf.gov/geo/oce/programs/ips/index.jsp.

Cover Sheet

- TITLE OF PROPOSED PROJECT: "Institution/Vessel Name Oceanographic Instrumentation"
- NSF ORGANIZATION UNIT: "OCE - Oceanographic Instrumentation"
- FUND CODE: 5413

Project Description

1. Ranking of Instrumentation Requests (Table 1.1): Provide an annotated table that includes a description of each request, its anticipated cost, and its priority within the proposal. Each request should include the following (Items 2-4):

2. Request Description: A complete description of sufficient detail including background information, justification, and costs must be included for each request in the Ranking of Instrumentation Requests. The requests must support goals consistent with fleet enhancement and ability to support NSF-funded ocean science research. These descriptions must be sufficient for technical evaluation by external merit reviewers. To that end, the Request Description should include the following (Subitems a-g):

a. A discussion using specific statements of what issue(s) the request intends to address and how it will do so. Include alternate solutions and their ramifications as well as the consequences of the request being denied. If the request is for a component of a larger system, include a description of its relationship to the whole. The discussion should include the information necessary to ensure the reviewer fully understands the issue and why the proposed solution is appropriate.

b. If the request is for the replacement of equipment in a shared-use inventory, an explanation of which science projects used the equipment in the past, their funding source, and frequency.

c. If the request is for major repair/overhaul of existing equipment, a cost comparison between the repair/overhaul and a replacement of the equipment as well as the anticipated effect on its lifespan.

d. Evidence of support within the ARF community to ensure consistency and fleet enhancement.

e. Justification for NSF support must be provided. An explanation of how the request contributes to shared-use efforts, enhances NSF-sponsored research, meets safety and regulatory requirements, and increases efficiency for both current and long-term needs. Indicate available or anticipated funding from additional sources including joint funding requests.

f. Supporting justification from Post-Cruise Assessments and Ship Inspections when available.

g. A thoroughly researched installation process and timeline, including any potential issues meeting that timeline, a management plan addressing spares and future quality control. Detailed schedule and anticipated research projects that will likely be impacted either positively or negatively by the request.

3. Broader Impacts

4. Itemized budget tables (Table 2.x) for the costs associated with the request including shipping and handling charges, installation charges, tax, and IDC. Every cost associated with the request must be explained in the Request Description (Item 2).

5. Other Supplementary Documents. Successful proposals include:

a. Quotes from multiple vendors or sole-source justification, including but not limited to purchase, installation, and shipping.

b. Technical specifications from web sites, catalogs or brochures. Edit the documentation only to pages necessary to support the request.

c. Engineering Analysis when applicable

d. Photographs, sketches, and drawings of existing equipment, deck layouts, and concept.

e. Additional information as required to document or justify the requests.

3. Shipboard Scientific Support Equipment (SSSE)

All proposals must contain the following, see SSSE Format & Tables available at https://www.nsf.gov/geo/oce/programs/ips/index.jsp.

Cover Sheet

- TITLE OF PROPOSED PROJECT: "Institution/Vessel Name SSSE"
- NSF ORGANIZATION UNIT: OCE - Shipboard Scientific Support Equip
- FUND CODE: 5416

Project Description

1. Ranking of Equipment Requests (Table 1.1): Provide an annotated table that includes a description of each request, its anticipated cost, and its priority within the proposal. Each request should include the following (Items 2-4):

2. Request Description: A complete description of sufficient detail including background information, justification, and costs must be included for each request in the Ranking of Equipment Requests. The requests must support goals consistent with fleet enhancement and ability to support NSF-funded ocean science research. These descriptions must be sufficient for technical evaluation by external merit reviewers. To that end, the Request Description should include the following (Subitems a-g):

a. A discussion using specific statements of what issue(s) the request intends to address and how it will do so. Include alternate solutions and their ramifications as well as the consequences of the request being denied. If the request is for a component of a larger system, include a description of its relationship to the whole. The discussion should include the information necessary to ensure the reviewer fully understands the issue and why the proposed solution is appropriate.

b. If the request is for the replacement of equipment in a shared-use inventory, an explanation of which science projects used the equipment in the past, their funding source, and frequency.

c. If the request is for major repair/overhaul of existing equipment, a cost comparison between the repair/overhaul and a replacement of the equipment as well as the anticipated effect on its lifespan.

d. Evidence of support within the ARF community to ensure consistency and fleet enhancement.

e. Justification for NSF support must be provided. An explanation of how the request contributes to shared-use efforts, enhances NSF-sponsored research, meets safety and regulatory requirements, and increases efficiency for both current and long-term needs. Indicate available or anticipated funding from additional sources including joint funding requests.

f. Supporting justification from Post-Cruise Assessments and Ship Inspections when available.

g. A thoroughly researched installation process and timeline, including any potential issues meeting that timeline, a management plan addressing spares and future quality control. Detailed schedule and anticipated research projects that will likely be impacted either positively or negatively by the request.

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b. Technical specifications from web sites, catalogs or brochures. Edit the documentation only to pages necessary to support the request.

c. Engineering Analysis when applicable

d. Photographs, sketches, and drawings of existing equipment, deck layouts, and concept.

e. Additional information as required to document or justify the requests

B. Budgetary Information

Cost Sharing:

Inclusion of voluntary committed cost sharing is prohibited.

Other Budgetary Limitations:

Annual Institutional purchase of ship days and technical support for the purposes of research, education and/or outreach is highly encouraged in Tech Services proposals.

Indirect Cost (F&A) Limitations: Not Applicable

C. Due Dates

- **Full Proposal Target Date(s)**:

  February 28, 2023

  January 10, 2024

  January 10, Annually Thereafter

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/ProposalPreparationa 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

All NSF proposals must address the two NSF Merit Review Criteria (Intellectual Merit and Broader Impacts) explicitly. Proposals that do not adhere to this requirement will be returned without review. In addition, proposals must address the additional review criteria outlined below by program.

1. Oceanographic Technical Services (Tech Services)

The following equally weighted criteria will be used in the evaluation of Tech Services proposals:

1. The likely success of proposed technician activities to provide effective support for scientific research using institutional facilities and personnel;
2. The extent to which the scope of basic technical support services matches the facility, i.e. research vessel operating areas and schedule for the calendar year, size and capability of the vessel, and its scientific outfit and capability;
3. The degree to which specialized instrument support activities, if requested, match the capabilities of the institution, vessel and technical support personnel;
4. The costs of the support activities in terms of day rate and specialized service costs. Rates will be evaluated in the context of the historical rates as well as the working schedule of a particular vessel;
5. The proportion of NSF-sponsored activities supported by the institutional facilities relative to total technical support activities and available funding; and
6. The utility, necessity, and available funding for specialized services proposals.

2. Oceanographic Instrumentation (OI)

Evaluation of OI proposals is based on the following equally weighted criteria:

1. Amount of federally sponsored research that will utilize this instrument;
2. Requested budget providing appropriate detail and including more than one vendor quotation when applicable/available;
3. Potential for improving an existing ship's oceanographic research capability;
4. Degree of multi-project use;
5. History, description and condition of existing instrumentation;
6. Urgency to meet safety standards, regulatory requirements, and/or science program requirements;
7. Examination of alternatives, including the overhaul of existing instrumentation;
8. Technical sufficiency of equipment proposed, including compliance with latest UNOLS standards;
9. Installation details, including arrangement drawings/sketches and photographs;
10. Evidence of proper engineering studies (as required);
11. Long-term maintenance plan(s); and
12. Costs: Reasonableness, degree of budget detail, provision of more than one vendor quotation when applicable/available. This includes purchase cost, installation, maintenance, and management and administration if associated with the shared-use equipment pools.

3. Shipboard Scientific Support Equipment (SSSE)

Evaluation of SSSE proposals is based on the same weighted criteria as OI proposals (see above).

B. Review and Selection Process

Proposals submitted in response to this program solicitation will be reviewed by Ad hoc Review and/or Panel Review, Internal NSF Review, Site Visit Review, or Cost, Schedule, & Management Review.

Prior to final award of full proposals, some projects may be evaluated via a Cost, Schedule, and Management Review, generally involving a reverse site visit with specialist reviewers, as a prerequisite to the awarding of funds.

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 an 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.

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 a Grants Officer in the Division of Grants and Agreements or the Division of Acquisition and Cooperative Support. 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.

For awards already designated a Major Research Facility you must also follow the Modifications and Supplemental Financial & Administrative Terms and Conditions for Major Multi-User Research Facility Projects and Federally Funded Research and Development Centers.

*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.

Special Award Conditions:

Any cooperative agreement awarded in response to this solicitation will contain the following term and condition:

Ensuring Adequate COVID-19 Safety Protocols

a. This clause implements Section 3(b) of Executive Order 14042, Ensuring Adequate COVID Safety Protocols for Federal Contractors, dated September 9, 2021 (published in the Federal Register on September 14, 2021, 86 FR 50985). Note that the Department of Labor has included "cooperative agreements" within the definition of "contract-like instrument" in its rule referenced at Section 2(e) of this Executive Order, which provides:

For purposes of this order, the term "contract or contract-like instrument" shall have the meaning set forth in the Department of Labor's proposed rule, "Increasing the Minimum Wage for Federal Contractors, " 86 Fed. Reg. 38816, 38887 (July 22, 2021). If the Department of Labor issues a final rule relating to that proposed rule, that term shall have the meaning set forth in that final rule.

a. The awardee must comply with all guidance, including guidance conveyed through Frequently Asked Questions, as amended during the performance of this award, for awardee workplace locations published by the Safer Federal Workforce Task Force (Task Force Guidance) at https://www.saferfederalworkforce.gov/contractors/.

b. *Subawards*. The awardee must include the substance of this clause, including this paragraph (c), in subawards at any tier that exceed the simplified acquisition threshold, as defined in Federal Acquisition Regulation 2.101 on the date of subaward, and are for services, including construction, performed in whole or in part within the United States or its outlying areas. That threshold is presently $250,000.

c. *Definition*. As used in this clause, *United States or its outlying areas* means:

1. The fifty States;

2. The District of Columbia;

3. The commonwealths of Puerto Rico and the Northern Mariana Islands;

4. The territories of American Samoa, Guam, and the United States Virgin Islands; and

5. The minor outlying islands of Baker Island, Howland Island, Jarvis Island, Johnston Atoll, Kingman Reef, Midway Islands, Navassa Island, Palmyra Atoll, and Wake Atoll.

The Foundation will take no action to enforce this article, where the place of performance identified in the award is in a U.S. state or outlying area subject to a court order prohibiting the application of requirements pursuant to the Executive Order (hereinafter, "Excluded State or Outlying Area". A current list of such Excluded States and Outlying Areas is maintained at https://www.saferfederalworkforce.gov/contractors/.

C. Reporting Requirements

For all multi-year grants (including both standard and continuing grants) and Cooperative Agreements, 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.

For awards issued to existing Major Facilities you must also follow any reporting requirements in the Research Infrastructure Guide at https://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf21107.

In order to negotiate budgets annually after the first year, reports are required for Tech Services programs. These reports are not a requirement for the other programs covered in this solicitation unless they are multi-year awards.

Oceanographic Technical Services Program

Annual reports will be submitted in Years 2-5. They should contain the information necessary to document costs for the previous year and negotiate the budgets for the subsequent year. The format should be the same as the original proposal (https://www.nsf.gov/geo/oce/programs/ips/index.jsp). Although the award is dependent on the number of ship days and that information is not known beyond the current year, the original proposal should contain a 5-year budget. This should be an estimate based on current year schedules.

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:

- Timothy M. McGovern, telephone: (703) 292-4248, email: tmcgover@nsf.gov
- Laura W. Stolp, telephone: (703) 292-8293, email: lstolp@nsf.gov
- Brian P. Midson, telephone: (703) 292-8145, email: bmidson@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.

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 (FASED) 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
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