Office of Polar Programs Postdoctoral Research Fellowships (OPP-PRF)

PROGRAM SOLICITATION
NSF 21-575

National Science Foundation
Directorate for Geosciences
Office of Polar Programs

Full Proposal Target Date(s):

June 18, 2021
February 07, 2022
First Monday in February, Annually Thereafter

IMPORTANT INFORMATION AND REVISION NOTES

This is a new solicitation. The proposal must be submitted by the Fellowship candidate. If an award is recommended, the proposal will be transferred to the proposed primary host organization where the postdoctoral Fellow will be named as the project's PI. The award will be issued to and administered by the primary host organization.

Any proposal submitted in response to this solicitation should be submitted in accordance with the revised NSF Proposal & Award Policies & Procedures Guide (PAPPG) (NSF 20-1), which is effective for proposals submitted, or due, on or after June 1, 2020.

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:
Office of Polar Programs Postdoctoral Research Fellowships (OPP-PRF)

Synopsis of Program:
The Office of Polar Programs (OPP) offers postdoctoral research fellowships (PRF) to provide opportunities for early career scientists, including social scientists, to accomplish one or more of the following goals: expand their work across traditional disciplinary lines, develop new partnerships connecting the polar regions and/or non-polar research communities, and provide entry to researchers who have traditionally had limited access to polar research resources, sites and facilities. The fellowship program encourages the integration of new investigators who have not previously worked in polar regions and/or innovative techniques that have not previously been applied to polar science into polar research. Additionally, the OPP-PRF aims to support beginning investigators with experiences that will establish them in positions of leadership in the scientific community. During their tenure, Fellows will affiliate with a host research institution(s) and conduct research on topics supported by OPP. Successful applicants will participate in a professional development program that will promote mentoring skills and coordinate their involvement in activities that increase the engagement of groups that have previously had limited engagement in polar Science, Technology, Engineering, and Mathematics (STEM).

Applicants must be U.S. citizens, nationals or permanent residents. Applicants who are women, veterans, persons with disabilities, and underrepresented minorities in STEM, or who have attended community colleges and minority-serving institutions (e.g., Historically Black Colleges and Universities, Tribal Colleges and Universities, Hispanic Serving Institutions, Alaska Native Serving Institutions, and Hawaiian Native and Pacific Islander Serving Institutions) are especially encouraged to apply.

Fellowship proposals must be submitted by individuals, however if an award is recommended, the proposal will be transferred to the host institution where the postdoctoral Fellow will be named as the PI. The award will be issued to the host institution as a regular research award, and the award will be administered by the host institution(s).

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.

- Colene M. Haffke, Program Director, Arctic Natural Sciences, W7155, telephone: (703) 292-8030, email: cohaffke@nsf.gov

This solicitation has been archived and replaced by NSF 22-516.
Erica Hill, Program Director, Arctic Social Sciences, W7176, telephone: (703) 292-4521, email: erhill@nsf.gov

Allen J. Pope, Program Director, Polar Cyberinfrastructure, W7100, telephone: (703) 292-2858, email: apope@nsf.gov

Elizabeth L. Rom, Polar Education Liaison, W8132, telephone: (703) 292-7709, email: elrom@nsf.gov

Colleen Strawhacker, Program Director, W7137, telephone: (703) 292-7432, email: colstraw@nsf.gov

David A. Sutherland, Program Director, Oceans and Atmospheric Sciences, W7100, telephone: (703) 292-7189, email: dasuther@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

**Estimated Number of Awards:** 10

Total of approximately 10 awards each year are anticipated. Each award has a two-year duration.

**Anticipated Funding Amount:** $3,000,000

Subject to availability of funds and the quality of proposals received.

**Eligibility Information**

**Who May Submit Proposals:**

Proposals may only be submitted by the following:

- Fellowship proposals must be submitted directly by the Fellowship candidate to NSF. Each Fellowship candidate must identify a sponsoring scientist(s) and must affiliate with a U.S. host organization. Appropriate primary host organizations include:
  - Institutions of Higher Education (IHEs) Two-and four-year IHEs (including community colleges) accredited in, and having a campus located in the U.S., acting on behalf of their faculty members.
  - Non-profit, Non-academic organizations - Independent museums, observatories, research laboratories, professional societies and similar organizations located in the U.S. that are directly associated with educational or research activities.
  - For-profit research organizations – U.S. commercial organizations, especially small businesses with strong capabilities in scientific or engineering research or education.

**Who May Serve as PI:**

To be eligible to submit a proposal to the OPP-PRF Program, an individual must, as of the full proposal target date, meet all of the following criteria:

- Be a U.S. citizen, national, or permanent resident (i.e., have a "green card") at the time the proposal is submitted.
- Have earned the doctoral degree, or expect to have earned the doctoral degree, prior to the required start date of the fellowship.
- Not have worked for more than a total of 24 full-time-equivalent months in positions that require the doctoral degree.
- Provide a project plan that is appropriate for one of OPP’s research programs.

Applicants are encouraged to implement the PRF at an institution new to the applicant, since the objectives of the fellowships include broadening the perspectives and experiences of the Fellows and promoting interdisciplinary research careers. However, NSF recognizes that moving to a new location for a two-year position may not be an option for all applicants, and therefore, proposals to remain at a candidate’s current institution are allowed. If a candidate proposes to be hosted by their graduate/current institution, they must clearly explain the benefits of this choice to their research and to their professional development goals.

Proposals that fail to meet the above eligibility requirements may be returned without review.

By signing and submitting the proposal, the fellowship candidate is certifying that they meet the eligibility criteria specified in this program solicitation. Willful provision of false information in this request and its supporting documents or in reports required under an ensuing award is a criminal offense (U.S. Code, Title 18, Section 1001).

**Limit on Number of Proposals per Organization:**

There are no restrictions or limits.

**Limit on Number of Proposals per PI or Co-PI:**

1

Individuals may submit only one proposal per year.

**Proposal Preparation and Submission Instructions**

A. Proposal Preparation Instructions
Letters of Intent: Not required

Preliminary Proposal Submission: Not required

Full Proposals:

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):
  - June 18, 2021
  - February 07, 2022
  - First Monday in February, 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:
Standard NSF award conditions apply.

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

TABLE OF CONTENTS

Summary of Program Requirements

I. Introduction
II. Program Description
III. Award Information
IV. Eligibility Information
V. Proposal Preparation and Submission Instructions
  A. Proposal Preparation Instructions
  B. Budgetary Information
  C. Due Dates
  D. FastLane/Research.gov/Grants.gov Requirements
VI. NSF Proposal Processing and Review Procedures
  A. Merit Review Principles and Criteria
  B. Review and Selection Process
VII. Award Administration Information
  A. Notification of the Award
  B. Award Conditions
  C. Reporting Requirements
I. INTRODUCTION

The Office of Polar Programs (OPP) offers postdoctoral research fellowships (PRF) to provide opportunities for early career scientists, including social scientists, to accomplish one or more of the following goals: expand their work across traditional disciplinary lines, develop new partnerships connecting the polar regions and/or non-polar research communities, and provide entry to researchers who have traditionally had limited access to polar research resources, sites and facilities. The fellowship program encourages the integration of new investigators who have not previously worked in polar regions and/or innovative techniques that have not previously been applied to polar science into polar research. Additionally, the OPP-PRF aims to support beginning investigators with experiences that will establish them in positions of leadership in the scientific community. During their tenure, Fellows will affiliate with a host research institution(s) and conduct research on topics supported by OPP. Successful applicants will participate in a professional development program that will promote mentoring skills and coordinate their involvement in activities that increase the engagement of groups that have previously had limited engagement in polar research, Technology, Engineering, and Mathematics (STEM).

Applicants must be U.S. citizens, nationals or permanent residents. Applicants who are women, veterans, persons with disabilities, and underrepresented minorities in STEM, or who have attended community colleges and minority-serving institutions (e.g., Historically Black Colleges and Universities, Tribal Colleges and Universities, Hispanic Serving Institutions, Alaska Native Serving Institutions, and Hawaiian Native and Pacific Islander Serving Institutions) are especially encouraged to apply. The OPP-PRF emphasizes research that integrates perspectives that transcend the polar community’s traditional bounds or brings innovative techniques to the polar research community. As such, all proposals should demonstrate one or more of the three following characteristics: 1) evidence that the recipient with past polar research experience will integrate that into a broader scientific context, 2) evidence that the recipient will integrate innovative techniques and knowledge from previous work done largely outside the polar realm into the polar research community, and/or 3) evidence that the recipient will bring perspectives into the polar community that arise from their experience in institutions or with groups that have not traditionally participated in OPP-funded polar research. In addition to the description of these characteristics in the proposal text, a letter(s) of support from the identified new mentor is required that demonstrates how the candidate is poised to diversify and/or expand the breadth of the polar scientific research community (see Section V below).

II. PROGRAM DESCRIPTION

A. Appropriateness for OPP Priorities

Fellowship projects must fall within the purview of OPP, which includes a range of disciplinary and cross-disciplinary areas. OPP programs include opportunities in, and building understanding of, the Arctic and Antarctic regions. All proposals must include a polar science research effort; while education may be integrated into the project, proposals that are solely focused on education will not be considered. Projects that make use of data and samples from OPP-supported repositories are encouraged.

Arctic Research Opportunities span Arctic Natural Sciences, Arctic Social Sciences, Polar Cyberinfrastructure and Arctic System Science, among others (see solicitation NSF 21-526). The Arctic Sciences Section strives to attract research proposals that advance a fundamental, process, and/or systems-level understanding of the Arctic’s rapidly changing natural environment, social and cultural systems, and, where appropriate, to improve our capacity to project future change. The Arctic Sciences Section supports research focused on the Arctic region and its connectivity with lower latitudes. The scientific scope is aligned with, but not limited to, research priorities outlined in the Interagency Arctic Research Policy Committee (IARPC) five-year plan. Information about field support is available on the Arctic Research Support and Logistics (RSL) program page.

Antarctic Research Opportunities support cutting-edge research across a broad range of scientific disciplines and cyberinfrastructure to i) expand fundamental knowledge of Antarctic systems, biota, and processes, ii) improve understanding of interactions among the Antarctic region and global systems, and iii) utilize the unique characteristics of the Antarctic region as a science observing platform (see solicitation NSF 21-567). The Antarctic Sciences Program encourages research using existing samples, data, and models. Fieldwork is not a required component of proposals.

Fellowship awards are limited to the funding levels indicated. Additional funding support for either Arctic or Antarctic logistics costs are not allowed for submissions to the 2021 target date. Future submissions with field logistics should follow guidelines available in the Proposal Preparation section of the relevant program solicitation. Note proposals that require fieldwork in Antarctica must include the statement “This proposal requires fieldwork in the Antarctic” as the last line in the Project Summary and include a Logistics Requirement and Field Plan as a Supplementary Document. Applicants are strongly encouraged to contact the Program Director in their area of science in the Office of Polar Programs to discuss the appropriateness of their research for funding support.

B. Host Institutions:

The fellow must affiliate with a primary host institution. Appropriate primary institutions include U.S. IHEs, non-profit, non-academic institutions, or for-profit research institutions that are eligible to receive NSF funding. Federally Funded Research and Development Centers (FFRDCs) and NSF-funded FFRDCs are ineligible as primary host institutions. Government agencies and national centers, facilities or institutes funded by other federal agencies, such as NASA, NOAA, EPA or the U.S. Department of Energy, and foreign institutions are also ineligible as primary host institutions. Multiple host institutions are permitted, and may be particularly appropriate to pursue interdisciplinary work, collaborative opportunities, and activities related to broadening participation. Regardless of the number of host institutions proposed, a primary U.S. host institution, which will receive and administer the award, must be identified.

In general, NSF expects that the fellowship will support work at an institution(s) other than the Fellow’s graduate institution or institution of current affiliation because the objectives of the fellowships include broadening the perspectives and experiences of the Fellows and promoting interdisciplinary research careers. However, NSF recognizes that moving to a new location for a two-year position may not be an option for all applicants, and therefore, proposals to remain at a candidate’s current institution are allowed. If a candidate proposes to be hosted by their graduate/current institution, they must clearly explain the benefits of this choice to their research and to their professional development goals.
The annual fellowship amount of $79,000 in Year 1 and $81,000 in Year 2 consists of two types of direct costs:

Salary and Allowances:
- During the second year of the Fellowship.

Candidates selected to receive fellowships will be contacted by NSF and asked to provide additional information, such as acceptance forms and starting certificates. The candidates must also submit forms required for a pre-award transfer to the initial (lead) host institution. Successful candidates who have not completed the PhD at the time of proposal submission must provide certification of the completion of all PhD degree requirements before receiving their fellowship award. Normally fellowships will be held at institutions specified in the proposal, but under certain circumstances and with suitable justification, fellows may transfer during the tenure of the fellowship to a new institution upon approval by NSF.

III. AWARD INFORMATION

Duration and Tenure: Up to 24 full-time-equivalent months of support may be requested. Fellows must begin their Fellowship within 12 months following the submission target date.

Within the fellowship period, one month per year of fellowship duration may be used for paid leave, including parental or family leave. The paid leave cannot be used to increase the level of NSF support beyond the duration of the fellowship. NSF enables career-life balance through a variety of mechanisms. For more information, please see https://www.nsf.gov/career-life-balance/.

Candidates selected to receive fellowships will be contacted by NSF and asked to provide additional information, such as acceptance forms and starting certificates. The candidates must also submit forms required for a pre-award transfer to the initial (lead) host institution. Successful candidates who have not completed the PhD at the time of proposal submission must provide certification of the completion of all PhD degree requirements before receiving their fellowship award. Normally fellowships will be held at institutions specified in the proposal, but under certain circumstances and with suitable justification, fellows may transfer during the tenure of the fellowship to a new institution upon approval by NSF.

During the period of the fellowship, no additional appointment or fellowship may be held without prior permission of the cognizant NSF program officer.

If a Fellow chooses to accept employment (i.e., a tenure-track position) during the first year of the Fellowship, the fellowship award will be terminated upon the start of the new position. In such cases, the primary host institution is responsible for initiating procedures for a termination by mutual agreement in accordance with Chapter XII of the NSF PAPPG. Fellows are encouraged to consult with the OPP-PRF program officer if they choose to accept a tenure-track position during the second year of the Fellowship.

Salary and Allowances:
The annual fellowship amount of $79,000 in Year 1 and $81,000 in Year 2 consists of two types of direct costs:

- A $64,000 salary in Year 1 and $66,000 in Year 2.
- Up to $15,000 a year in Year 1 and Year 2 to cover expenses directly related to the conduct of the proposed research and professional development goals, including but not limited to, materials and supplies, equipment, computing resources, access to databases, domestic and international travel, publication charges, and subscription fees.

Fellowship budgets can be increased to include a Facilitation Award for Scientists and Engineers with Disabilities (FASED). When requesting FASED funding, applicants should contact the OPP-PRF program officer prior to applying.

OPP would like to encourage a close partnership between the Fellow and the host institution, allow the Fellow access to institutional benefits such as healthcare, and decrease the burden of grant management that is placed on the Fellow when an award is made directly to an individual. Therefore, OPP will review proposals as submitted by individuals, but all awards will be made to the primary host institution, using the Pre-award Transfer Process, after the review process is complete. Budgets and award documents will be adjusted to include institutional fringe and overhead costs. The Fellow must be listed as the PI on the award.

Pre-Award Transfer Process: To process the Pre-award Proposal Transfer, the Fellow, acting as the original proposing institution’s Authorized Organizational Representative (AOR), must submit to the cognizant OPP-PRF Program Officer (PO) an e-mail concurring with the transfer of the proposal to the host institution. This documentation will be added to the files by the PO as correspondence associated with the proposal. The cognizant PO then will request that the host institution submit to NSF a revised:

- Cover Sheet (with Fellow named as PI) and Certification pages signed by the AOR.
- Budget and Budget Justification. The Fellow must be named as the PI and receive a monthly or bi-weekly salary equal to $64,000 in Year 1 and $66,000 in Year 2 plus institutional employee benefits. The primary host institution’s budget is expected to include fringe benefit costs for the Fellow. The $15,000 per year for research costs may be distributed in the budget to cover other direct research costs, including but not limited to, materials and supplies, equipment, computing resources, access to databases, domestic and international travel, publication charges, and subscription fees. The applicable U.S. Federally negotiated indirect cost rate(s) must be used in computing indirect costs (F&A). Institutions that do not have a current negotiated rate agreement with a cognizant Federal agency may request indirect cost recovery up to the de minimis rate of 10% of modified total direct costs.

The PO will update the proposal system with the new institutional and budget data so that processing of the proposal award to the host institution can proceed. The Fellow’s original Cover Sheet and Certification pages will not be modified and will be retained for the historical record of how the proposal was submitted to NSF.
IV. ELIGIBILITY INFORMATION

Who May Submit Proposals:

Proposals may only be submitted by the following:

- Fellowship proposals must be submitted directly by the Fellowship candidate to NSF. Each Fellowship candidate must identify a sponsoring scientist(s) and must affiliate with a U.S. host organization. Appropriate primary host organizations include:
  - Institutions of Higher Education (IHEs) Two-and four-year IHEs (including community colleges) accredited in, and having a campus located in the U.S., acting on behalf of their faculty members.
  - Non-profit, Non-academic organizations - Independent museums, observatories, research laboratories, professional societies and similar organizations located in the U.S. that are directly associated with educational or research activities.
  - For-profit research organizations – U.S. commercial organizations, especially small businesses with strong capabilities in scientific or engineering research or education.

Who May Serve as PI:

To be eligible to submit a proposal to the OPP-PRF Program, an individual must, as of the full proposal target date, meet all of the following criteria:

- Be a U.S. citizen, national, or permanent resident (i.e., have a "green card") at the time the proposal is submitted.
- Have earned the doctoral degree, or expect to have earned the doctoral degree, prior to the required start date of the fellowship.
- Not have worked for more than a total of 24 full-time-equivalent months in positions that require the doctoral degree.
- Provide a project plan that is appropriate for one of OPP’s research programs.

Applicants are encouraged to implement the PRF at an institution new to the applicant, since the objectives of the fellowships include broadening the perspectives and experiences of the Fellows and promoting interdisciplinary research careers. However, NSF recognizes that moving to a new location for a two-year position may not be an option for all applicants, and therefore, proposals to remain at a candidate’s current institution are allowed. If a candidate proposes to be hosted by their graduate/current institution, they must clearly explain the benefits of this choice to their research and to their professional development goals.

Proposals that fail to meet the above eligibility requirements may be returned without review.

By signing and submitting the proposal, the fellowship candidate is certifying that they meet the eligibility criteria specified in this program solicitation. Willful provision of false information in this request and its supporting documents or in reports required under an ensuing award is a criminal offense (U.S. Code, Title 18, Section 1001).

Limit on Number of Proposals per Organization:

There are no restrictions or limits.

Limit on Number of Proposals per PI or Co-PI: 1

Individuals may submit only one proposal per year.

Additional Eligibility Info:

Fellowship proposals must be submitted directly by the Fellowship candidate to NSF. Each Fellowship candidate must identify a sponsoring scientist(s) and must affiliate with a U.S. host institution. FFRDCs, including NSF-funded FFRDCs, are ineligible as primary host institutions. Government agencies and national centers, facilities or institutes funded by other federal agencies, such as NASA, NOAA, EPA or the U.S. Department of Energy, and foreign institutions are also ineligible as primary host institutions.

If an award is recommended, the proposal will be transferred to the proposed primary host institution where the postdoctoral Fellow will be named as the project's PI. The award will be issued to and administered by the primary host institution. See Section III for additional information about the Pre-Award Transfer Process.

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

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

- Full proposals submitted via FastLane: Proposals submitted in response to this program solicitation should be prepared and submitted in accordance with the general guidelines contained in the NSF Proposal & Award Policies & 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. Proposers are reminded to identify this program solicitation number in the program solicitation block on the NSF Cover Sheet For Proposal to the National Science Foundation. Compliance with this requirement is critical to determining the relevant proposal processing guidelines. Failure to submit this information may delay processing.
Before starting proposal preparation, the proposer must be registered as an individual. Proposers must register as a new individual in Research.gov and/or as a new individual in Grants.gov. Fellowship proposals must be submitted by the Fellowship proposer, not by the proposer's current or proposed primary institutional host. 

Applicants are advised to begin the proposal well in advance of the submission deadline and to submit as early as possible. Partially completed proposals may be saved for future completion and submission. The submission of incomplete proposals is not permitted.

Proposals must include all of the following items. In cases where requirements given in this document differ from those given in the PAPPG or Grants.gov Application Guide, this solicitation takes precedence.

1. NSF Cover Sheet. FastLane Users: Select the OPP-PRF program solicitation number shown at the beginning of this solicitation from the drop-down menu. Grants.gov Users: The program solicitation number will be pre-populated by Grants.gov on the NSF Grant Application Cover Page. The title must start with "OPP-PRF", followed by a descriptive title of the research. If the project will involve international partners, check the "International Cooperative Activities" box and identify the country/ies involved.
2. Information about Principal Investigators/Project Directors.
3. Table of Contents. This form will be automatically generated by FastLane or Grants.gov.
4. Project Summary, not more than one page in length, that includes an overview of the project and separate statements that clearly address the intellectual merit and broader impacts. If proposing fieldwork in the Antarctic, the statement "This proposal requires fieldwork in the Antarctic" must be included as the last line in the Project Summary. In addition, the Project Summary must also identify (in the overview section):
   - Proposed sponsoring scientist(s) and proposed host institution(s).
5. Project Description, not to exceed 10 single-spaced pages (including any figures, pictures and tables), which must include the following:
   - Research plan
   - Justification for the choice of the host institution(s) and sponsoring scientist(s) that relates the proposed fellowship work to available expertise, facilities and resources.
   - Statement about the array of expected broader impacts, including a specific description of how the proposed fellowship project will enhance the diversity and/or breadth of polar scientific research.
   - Description of the candidate's long-term career goals and the role of this postdoctoral experience in achieving them, including any prior evidence of leadership in the scientific community.
   - Description of Eligibility for Fellowship - including the month and year when PhD was (or is expected to be) received. If more than 24 months have elapsed between the date that the doctoral degree was conferred and the OPP-PRF proposal target date, include the following statement: "I affirm that I have not worked for more than 24 full-time-equivalent months in positions for which the doctoral degree was a requirement." Do not include personal information such as birth date or place of birth.

Special certifications and permits may be required when projects involve human subjects, vertebrate animals, endangered species, hazardous materials, collecting in foreign countries, or other elements. The research plan should provide general information on these matters and address feasibility. If selected, candidates must submit required documentation to the NSF program officer before a fellowship award can be processed.

6. References cited. See guidance contained in the PAPPG.
8. NSF Budget and Budget Justification. Enter the Fellow’s name and salary amounts of $64K in Year 1 and $66K in Year 2 on Line A.1 Senior Personnel, and enter the $15K per year on Line G.6 Other Direct Costs. Co-PIs and other senior personnel are not allowed in OPP-PRF proposals.

A budget justification of no more than two pages must list and justify estimated expenditures under the annual fellowship allowance.

Should a proposal be recommended for award, the primary host institution will be required to submit a revised budget and budget justification that allocates the proposed direct costs to the appropriate NSF budget line item(s). Institutional fringe benefits and indirect costs will also be added to the budget prior to award in accordance with the guidance provided in Section III above.

9. Current and Pending Support. Include current support for research and training. Under pending support, include this proposal, as well as pending and planned applications to other fellowship or research programs. The project submitted to this solicitation should not be concurrently under review by another program. This information is to be submitted only for the applicant; not for the sponsoring scientist(s).
10. Facilities, Equipment and Other Resources, as applicable. Insert text or upload a document that states: "See Letter(s) of Collaboration from the prospective host institution(s)."

The following must be submitted as Supplementary Documentation:

11. Abstract of the candidate’s PhD thesis (limited to one page).
12. Data Management Plan, not to exceed two pages, and which describes plans for data management and sharing of the products of research or asserts the absence of the need for such plans. See OPP data reporting requirements at https://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf16055. Note that proposals that target Arctic or Antarctic research areas specifically may be subject to additional guidelines by those particular program areas.
13. Letter(s) of Collaboration from the prospective host institution(s), signed by the department chair (or equivalent) and the Sponsored Research Office, certifying that adequate facilities and support will be provided for the fellow to accommodate the proposed activities and certifying plans to appoint the Fellow as project PI if an award is recommended. Should the candidate propose to hold the fellowship concurrently or sequentially at more than one institution during the two-year tenure, letters of collaboration must be provided from all institutions. The primary host institution's letter must specifically acknowledge that 1) the institution is aware that award recommendations will require a pre-award transfer of the proposal to the primary host institution, 2) the institution will submit all documents required for a pre-award transfer, including a new cover page that lists the Fellow as the PI and a budget that adds funding for institutional fringe and overhead costs to support the Fellow's benefits, and 3) the institution will administer the award to provide the Fellow's salary, benefits and proposed research activities. If a host institution is not the primary host institution and if the institution is eligible to receive NSF funding, the letter must acknowledge that the institution is willing to administer the award if the Fellow requests a transfer of the award to the institution. Awards cannot be transferred to foreign institutions or government agencies. If the host institution has not received prior NSF funding, the institution will need to submit "New Awardee" documentation, which will be subject to NSF’s evaluation before an award can be made or transferred.

14. A signed letter(s) of support, not to exceed two pages each, from the proposed sponsoring scientist(s) certifying that the fellowship proposal has been read and approved, and including discussion of:
   - The role the proposed scientific mentor(s) will play in the professional development of the fellow.
   - The opportunities for research and professional development at the host institution that will be of particular benefit to the fellow.
   - The potential for the candidate to diversify and/or expand the breadth of the polar scientific research community.

15. If applicable, documents from research support providers that outline the scope and cost of the support requested as part of the project, not to exceed two pages each. This includes the Arctic Research Support and Logistics Services contractor, Research Support or Ocean Projects Managers in the Antarctic Infrastructure and Logistics Section, the Ice Drilling Program, Polar Geospatial Center, or other 3rd-party support providers (e.g., IRIS, UNAVCO, etc.) necessary to perform the work. Ship Time Request forms are also appropriate.

16. A Biographical Sketch(es), not to exceed two pages and conforming to the NSF Proposal & Award Policies & Procedures Guide (PAPPG), of the sponsoring scientist(s).

17. For individuals who have not completed the PhD at the time of proposal submission, a signed letter from the graduate advisor or Dean confirming the expectation that the candidate will receive the degree within 12 months of the full proposal target date.

Letters of recommendation will not be considered. Letters from the proposed host institution(s), sponsoring scientist(s), and, as needed, the candidate's current graduate advisor, should not reflect a letter of recommendation and should make no subjective statements regarding either the candidate or their proposed activities. Signed letters should be scanned into Portable Document Format (PDF) and uploaded as supplementary documentation.

The following must be submitted as Single Copy Documents:

18. The proposer and the proposed mentor(s) should submit their collaborator information under "Collaborators & Other Affiliations (COA)" specified in the PAPPG using the instructions and spreadsheet template.

19. List of suggested reviewers (optional).

B. Budgetary Information

Cost Sharing:

Inclusion of voluntary committed cost sharing is prohibited.

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):
  - June 18, 2021
  - February 07, 2022
  - First Monday in February, Annually Thereafter

D. FastLane/Research.gov/Grants.gov Requirements

For Proposals Submitted Via FastLane or Research.gov:

To prepare and submit a proposal via FastLane, see detailed technical instructions available at: https://www.fastlane.nsf.gov/a1/newstan.htm. To prepare and submit a proposal via Research.gov, see detailed technical instructions available at: https://www.research.gov/research-portal/appmanager/base/desktop?_nflp=true&_pageLabel=research_node_display&_nodePath=/researchGov/Service/Desktop/ProposalPreparationandSubmission.html. For FastLane or Research.gov user support, call the FastLane and Research.gov Help Desk at 1-800-673-6188 or e-mail fastlane@nsf.gov or rgov@nsf.gov. The FastLane and Research.gov Help Desk answers general technical questions related to the use of the FastLane and Research.gov systems. 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
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 Building the Future: Investing in Discovery and Innovation - NSF Strategic Plan for Fiscal Years (FY) 2018 – 2022. 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.C.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.C.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 underrepresented minorities in science, technology, engineering, and mathematics (STEM); improved STEM education and educator development at any level; increased public scientific literacy and public engagement with science and technology; improved well-being of individuals in society; development of a diverse, globally competitive STEM workforce; increased partnerships between academia, industry, and others; improved national security; increased economic competitiveness of the 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**

Additional merit review criteria apply. Please see the full text of this solicitation for further information. The following additional review criteria will be used in evaluation of the fellowship proposals:

- Qualifications of the candidate and their potential for enhancing the diversity and/or breadth of the existing polar scientific research community
- Evidence of prior leadership in scientific research and their potential for leadership in the polar research community
- Suitability of the sponsoring scientist(s) and available facilities, equipment and other resources

### 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 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. 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 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.


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.


Additional award conditions apply.

Co-PIs and other senior personnel are not allowed in OPP-PRF proposals.

A Fellow may transfer to another eligible host institution at any time during the award period. The primary host institution will facilitate the transfer of the award using NSF’s standard PI Transfer process. Before such a transfer will be approved by NSF, the Fellow’s new institution must supply to the cognizant NSF Program Officer documentation required of a primary host institution that is detailed in Section V of this solicitation. Transfer of an award issued under this solicitation to a substitute PI is not permissible, and the awardee cannot terminate the award without NSF’s concurrence.

If a Fellow chooses to accept employment (i.e., a tenure-track position) during the first year of the Fellowship, the fellowship award will be terminated upon the start of the new position. In such cases, the primary host institution is responsible for initiating procedures for a termination by mutual agreement in accordance with Chapter XII of the NSF 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:

- Colene M. Haffke, Program Director, Arctic Natural Sciences, W7155, telephone: (703) 292-8030, email: cohaffke@nsf.gov
- Erica Hill, Program Director, Arctic Social Sciences, W7176, telephone: (703) 292-4521, email: erhill@nsf.gov
- Allen J. Pope, Program Director, Polar Cyberinfrastructure, W7100, telephone: (703) 292-2858, email: apope@nsf.gov
- Elizabeth L. Rom, Polar Education Liaison, W8132, telephone: (703) 292-7709, email: efrom@nsf.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.E.6 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
National Science Foundation
Alexandria, VA 22314

National Science Foundation, 2415 Eisenhower Avenue, Alexandria, Virginia 22314, USA
Tel: (703) 292-5111; FIRS: (800) 877-8339 | TDD: (703) 292-5090 or (800) 281-8749

Text Only