This document has been archived and replaced by NSF 20-547.

Geography and Spatial Sciences Program (GSS)

PROGRAM SOLICITATION
NSF 17-566

REPLACES DOCUMENT(S):
NSF 14-537

National Science Foundation

Directorate for Social, Behavioral & Economic Sciences
  Division of Behavioral and Cognitive Sciences

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

September 07, 2017

First Thursday in September, Annually Thereafter

  Proposal submission deadline

IMPORTANT INFORMATION AND REVISION NOTES

This solicitation provides instructions for submission of proposals to the Geography and Spatial Sciences (GSS) Program for the following kinds of awards: regular research awards; awards for conferences, group travel, and research community-development activities; research coordination network (RCN) awards; and rapid-response research (RAPID) awards. This solicitation also provides guidance with respect to the preparation of faculty early-career development (CAREER) award proposals to GSS, although CAREER proposals are submitted under the terms of the NSF-wide CAREER solicitation.

GSS continues to conduct one annual competition for new proposals for regular research project awards; awards for conferences, group travel, and research community-development activities; and research coordination networks. The deadline for submission of these kinds of proposals is the first Thursday of September, as specified in this solicitation. GSS conducts one annual competition for CAREER proposals in accordance with the proposal-submission deadline date specified in the CAREER solicitation. GSS can consider RAPID proposals at any time, although investigators must discuss the rationale for submitting a RAPID proposal with GSS program directors, and they must receive permission from a GSS program director to submit a formal RAPID proposal.

A different solicitation includes instructions for preparation of proposals of Doctoral Dissertation Research Improvement (DDRI) proposals to be submitted to GSS (https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503621). In accordance with the new GSS-DDRI solicitation, DDRI proposals may be submitted to GSS at any time after July 1, 2017. Only DDRI proposals can be submitted to GSS at any time and without any prior contact between the investigators and GSS program directors.

This solicitation notes special review criteria that GSS asks reviewers and panel members to address regarding the expected larger-scope, longer-term significance of a project as well as its likelihood of success. Although the wording of these criteria is slightly different than in the previous GSS solicitation, their substance remains the same.

This solicitation provides clarification regarding proposal preparation for submission to the Geography and Spatial Sciences Program.

If a project is being undertaken by researchers at multiple organizations, a single organization must be identified as the prime, and a single proposal describing the entire project must be submitted by that organization, with funds distributed among partner organizations via subawards from the prime organization. Direct submission of linked collaborative sets of proposals by multiple organizations is not permitted.

Any proposal submitted in response to this solicitation should be submitted in accordance with the revised *NSF Proposal & Award Policies & Procedures Guide* (PAPPG) (NSF 19-1), which is effective for proposals submitted, or due, on or after February 25, 2019.

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

  Geography and Spatial Sciences Program (GSS)

Synopsis of Program:

As specified in the Geography and Spatial Sciences Program strategic plan, the mission of the NSF Geography and Spatial Sciences (GSS) Program is to promote:

- Basic scientific research in geography and spatial science that advances theory, fundamental understanding, and scientific approaches and addresses the challenges facing society.
- The education and training of geographers and spatial scientists in order to enhance the capabilities of current and future generations of researchers.
- The involvement of geographers and spatial scientists in interdisciplinary research.

The Geography and Spatial Sciences Program supports basic research about the geographic distributions and interactions of human, physical, and biotic systems on Earth. Investigators are encouraged to propose plans for research about the nature, causes, and consequences of human activity and natural environmental processes across a range of scales. Projects about a broad range of topics may be appropriate for support if they offer promise of enhancing fundamental geographical knowledge, concepts, theories, methods, and their application to societal problems and concerns.

GSS provides support through a number of different funding mechanisms:

- Regular research awards
- Doctoral dissertation research improvement (DDRI) awards
- Faculty early-career development (CAREER) awards
- Awards for conferences, group travel, and community-development activities
- Research coordination network (RCN) awards
- Rapid-response research (RAPID) awards.

In rare and unusual cases, GSS may support early-concept grants for exploratory research (EAGER), research advanced by interdisciplinary science and engineering (RAISE) awards, and other special kinds of award mechanisms established by NSF. Investigators must discuss the rationale for submitting any of these kinds of proposals with GSS program directors prior to the submission of a proposal. These types of proposals are permitted by GSS only in rare and unusual cases because GSS strives to be open to ideas and approaches in early stages of development, and GSS emphasizes the potential longer-term significance of new lines of inquiry as part of its merit evaluation of all types of proposals, including regular research proposals.

There are two different solicitations that provide information about proposals to be submitted for consideration by GSS:

This solicitation provides instructions for submission of proposals for regular research awards; proposals for awards for conferences, group travel, and community-development activities; proposals for research coordination network (RCN) awards; and proposals for rapid-response research (RAPID) awards.

A different solicitation provides instructions for proposals for doctoral dissertation research improvement (DDRI) awards. That solicitation is accessible at https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503621.

Proposals for faculty early-career development (CAREER) awards should be prepared in accordance with the CAREER solicitation, although investigators submitting CAREER proposals to GSS should also consult this solicitation for more information about GSS and to be aware of the GSS special review criteria, which are used for the evaluation of CAREER proposals. More information about CAREER awards and a link to the CAREER solicitation is accessible at https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503214.

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.

- Jacqueline Vadjunec-Program Director, telephone: (703) 292-7064, email: jmvadjun@nsf.gov

- Scott M. Freundschuh-Program Director, telephone: (703) 292-7076, email: sfreunds@nsf.gov

- Cori Jacildone-Program Specialist, telephone: (703) 292-8740, email: cjacildo@nsf.gov

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

- 47.075 --- Social Behavioral and Economic Sciences

Award Information

Anticipated Type of Award: Standard Grant or Continuing Grant

Estimated Number of Awards: 30 to 40

Depending on the availability of funding during a fiscal year, GSS expects to recommend (either on its own or through co-funding with one or more other NSF programs) a total of 25 to 30 regular research project awards, 1 to 3 faculty early-career development (CAREER) awards, and 2 to 4 awards to support conferences, group travel, and/or other community-development activities. Depending on circumstances and the quality of proposals submitted to GSS, 0 to 3 research coordination network (RCN) awards, RAPID awards, EAGER awards, RAISE awards, and/or other kinds of special awards may be recommended.

Anticipated Funding Amount: $5,000,000 to $6,000,000

pending availability of funds. Project budgets should be developed at scales appropriate for the work to be conducted. Regular research awards supported by GSS generally range from between $40,000 to $400,000. CAREER awards must be for a minimum of $400,000; CAREER awards supported by GSS rarely exceed $550,000. Awards to support conferences, group travel, or other community-development activities generally range between $20,000 and $200,000. Research coordination network (RCN) awards generally range between $300,000 and $500,000. RAPID awards generally range between $20,000 and $60,000. All figures in the preceding sentences are totals that include both direct and indirect costs for the entire duration of the award. Somewhat larger funding amounts may be possible if other NSF programs participate in co-funding of a project with GSS.

Eligibility Information

Who May Submit Proposals:

The categories of proposers eligible to submit proposals to the National Science Foundation are identified in the *NSF Proposal & Award Policies & Procedures Guide* (PAPPG), Chapter I.E. Unaffiliated individuals are not eligible to submit proposals in response to this solicitation.

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

    September 07, 2017

    First Thursday in September, Annually Thereafter

    Proposal submission deadline

Proposal Review Information Criteria

Merit Review Criteria:

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

Award Administration Information

Award Conditions:

Standard NSF award conditions apply.

Reporting Requirements:

Standard NSF reporting requirements apply.

TABLE OF CONTENTS

I. INTRODUCTION

As specified in the Geography and Spatial Sciences Program strategic plan, the mission of the NSF Geography and Spatial Sciences (GSS) Program is to promote:

- Basic scientific research in geography and spatial science that advances theory, fundamental understanding, and scientific approaches and addresses the challenges facing society.
- The education and training of geographers and spatial scientists in order to enhance the capabilities of current and future generations of researchers.
- The involvement of geographers and spatial scientists in interdisciplinary research.

The Geography and Spatial Sciences Program supports basic research about the geographic distributions and interactions of human, physical, and biotic systems on Earth. Investigators are encouraged to propose plans for research about the nature, causes, and consequences of human activity and natural environmental processes across a range of scales. Projects about a broad range of topics may be appropriate for support if they offer promise of enhancing fundamental geographical knowledge, concepts, theories, methods, and their application to societal problems and concerns.

GSS provides support through the following kinds of funding mechanisms:

- Regular research awards
- Doctoral dissertation research improvement (DDRI) awards *(Note that there is a separate solicitation for DDRI proposals to be submitted to GSS.)*
- Faculty early-career development (CAREER) awards
- Awards for conferences, group travel, and community-development activities
- Research coordination network (RCN) awards
- Rapid-response research (RAPID) awards

In rare and unusual cases, GSS may support early-concept grants for exploratory research (EAGER), research advanced by interdisciplinary science and engineering (RAISE) awards, and other special kinds of award mechanisms established by NSF. Investigators must discuss the rationale for submitting any of these kinds of proposals with GSS program directors prior to the submission of a proposal. These types of proposals are permitted by GSS only in rare and unusual cases because GSS strives to be open to ideas and approaches in early stages of development, and GSS emphasizes the potential longer-term significance of new lines of inquiry as part of its merit evaluation of all types of proposals, including regular research proposals.

II. PROGRAM DESCRIPTION

Through its competitive grants competitions, the Geography and Spatial Sciences (GSS) Program of the U.S. National Science Foundation seeks to advance basic understanding and methods in geography, other spatial sciences, and related fields to enhance fundamental knowledge and address societal problems. GSS is committed to support basic geographic and spatial scientific research as well as wider-ranging interdisciplinary research in which geographers and

spatial scientists may play critical roles. In alignment with the NSF strategic plan for 2014 to 2018, GSS expects that the research it supports will draw upon and enhance fundamental theory in geography and/or other spatial sciences, and it will encourage and support potentially transformative research that has potential larger-scale, longer-term significance for both basic understanding and for societal benefit. As noted in the GSS strategic plan, GSS will seek to identify and support research projects that may potentially transform geography, other spatial sciences, and related fields by trying to assess a project's larger-scope, longer-term potential as well as its more immediate significance.

A proposal submitted for consideration by the Geography and Spatial Sciences Program at NSF will be most competitive (a) if the research is grounded in relevant geographical and/or spatial scientific theory; (b) if it focuses on one or a few core questions grounded in the theoretical framework that has been established; (c) if it articulates how scientifically sound methods will be used to explore the validity of answers to the core questions; and (d) if the results are likely to contribute not only specific answers to those specific questions but also to the enhancement of broader geographic and/or spatial scientific theory. The project also can draw on and contribute to theory in other fields, but to obtain at least some funding from GSS, efforts should be made to enhance fundamental geographic and/or spatial scientific theory. The investigators should plan to disseminate their results through presentations and publications for geographers and spatial scientists as well as other relevant communities.

GSS supports research that involves development of methods and techniques to advance geographic and spatial scientific research. Proposals to develop and advance methods generally are most competitive when they also address substantive questions that are grounded in broader theoretical contexts, because the development of new methods is most compelling when their wider-ranging utility is complemented with convincing demonstrations of their practical utility to address substantive problems.

GSS frequently engages in co-review of regular research proposals with other NSF programs. Such co-review entails multiple programs coordinating the review of a single project proposal submitted to NSF. Efforts are made to enable co-review to provide "double opportunity" rather than "double jeopardy," because a single program can provide support for the project it finds meritorious even if other programs are not as enthusiastic about the proposed work. Investigators who believe that their work might be appropriate for co-review are encouraged to contact program officers for all programs they think might have interest in their work well in advance of proposal-submission deadlines. Early pre-proposal contact often includes transmission of a project prospectus by email to all program officers of programs that might have an interest in the project. The prospectus should be one page or so in length and can include summaries of the theoretical foundations of the project, the core questions on which the investigators plan to focus, the research plan they will use, and the expected intellectual and broader significance of the project. By sharing the prospectus and other questions they have with program officers from multiple programs, investigators can obtain feedback that will enable them to assess whether co-review may be a viable option and to write their proposal accordingly.

GSS provides support for projects using a set of different funding mechanisms:

1. **Regular research awards**. These awards provide support for individual researchers or teams of researchers for time periods ranging from one to five years to conduct investigations of specific research projects. Project budgets should be developed at scales appropriate for the work to be conducted. Regular research awards supported by GSS generally range from between $40,000 to $400,000. (These totals include both direct and indirect costs for the entire duration of the award. Somewhat larger funding amounts may be possible if other NSF programs participate in co-funding of a project with GSS.) Proposals for regular research project awards must be submitted by the proposal-submission deadline specified in this solicitation.

2. **Doctoral dissertation research improvement (DDRI) awards**. These awards provide support for doctoral students for time periods ranging from one to two years to conduct investigations of specific research projects associated with doctoral dissertations (or, in some graduate programs, in publications that substitute for dissertations). (Note that there is a separate solicitation for DDRI proposals to be submitted to GSS. That solicitation may be accessed from https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503621.)

3. **Faculty early-career development (CAREER) awards.** These awards provide support for five years for individual researchers at early stages in their careers to enable them to conduct research programs consisting of multiple research projects and a well-integrated educational program. Project budgets should be developed at scales appropriate for the work to be conducted. CAREER awards must be a minimum of $400,000, with CAREER awards supported by GSS rarely exceeding $550,000. (These totals include both direct and indirect costs for the entire duration of the award. Somewhat larger funding amounts may be possible if other NSF programs participate in co-funding of a project with GSS.) CAREER proposals must be prepared and submitted in accordance with specifications in the CAREER solicitation. (More information about CAREER awards and a link to the CAREER solicitation is accessible at https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503214.)

4. **Awards for conferences, group travel, and community-development activities.** These awards provide funding for groups of researchers for one to five years to support activities that show strong prospects for enhancing current and future research and related activity within and beyond geography and the spatial sciences. Project budgets should be developed at scales appropriate for the work to be conducted. These awards generally range between $20,000 and $200,000. (These totals include both direct and indirect costs for the entire duration of the award.) Proposals for any of these kinds of awards must be submitted by the proposal-submission deadline specified in this solicitation. (Additional information about the preparation of conference proposals is available in Chapter II.E.7 of the PAPPG. Additional information about the preparation of group travel proposals is available in Chapter II.E.9 of the PAPPG.)

5. **Research coordination network (RCNs) awards**. These awards provide support for groups of researchers for three to five years to facilitate and broaden interactions within and beyond geographic and spatial science research communities in ways that will enhance basic research activities in the future. Project budgets should be developed at scales appropriate for the work to be conducted. RCN awards generally range between $300,000 and $500,000. (These totals include both direct and indirect costs for the entire duration of the award.) Additional information about RCN proposals is available at https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=11691. RCN proposals submitted to GSS must be submitted by the proposal-submission deadline specified in this solicitation and must be submitted in response to this solicitation rather than in response to the RCN solicitation.

6. **Rapid-response research (RAPID) awards**. These awards provide support for individuals or teams of researchers for one year to capture ephemeral data that are critical for the conduct of specific, well-formulated research projects. Although project plans may be initiated in response to sudden, unexpected events or circumstances, proposals must show the same theoretical grounding, focus on specific questions, and use of scientifically sound procedures that is expected of regular research proposals. Proposals seeking to gather data quickly and later determine how the data will be used will not be competitive. Project budgets should be developed at scales appropriate for the work to be conducted and generally should focus on activities related to the collection of ephemeral data, not to follow-up analysis and dissemination. RAPID awards generally range between $20,000 and $60,000. (These totals include both direct and indirect costs for the entire duration of the award. Somewhat larger funding amounts may be possible if other NSF programs participate in co-funding of a project with GSS.) GSS program directors must be contacted and prior written approval must be obtained from a GSS program director before a formal RAPID proposal is submitted to GSS. Note that authorization to submit a RAPID proposal to GSS does not imply that the proposal will result in an award. (Additional information about the preparation of a RAPID proposal is available in Chapter II.E.1 of the PAPPG.)

GSS employs an evaluation system known as "One-Plus." GSS permits the submission of new proposals for regular research awards; awards for conferences, group travel, and community-development activities; and research coordination network awards only one time each year, with a proposal-submission deadline on the first Thursday of September. These proposals are evaluated during the following months, with funding decisions made in

the early months of the following calendar year. To facilitate lines of inquiry with high potential significance, the GSS program directors will invite PIs whose proposals were declined but who had especially promising regular research proposals to revise and resubmit their proposals prior to the next proposal-submission deadline. These PIs will have six to eight weeks to revise and resubmit proposals if they wish to do so. Their new proposals will undergo a new round of merit review to determine whether the proposed work maintains a high level of potential significance while increasing confidence in its likelihood of success. This system permits GSS to recommend more awards early in the calendar year that previously had been possible while also permitting some additional projects that have great potential larger-scope, longer-term significance to be supported sooner than would otherwise be the case.

III. AWARD INFORMATION

Anticipated Type of Award: Continuing Grant or Standard Grant

Estimated Number of Awards: 30 to 40

Depending on the availability of funding during a fiscal year, GSS expects to recommend (either on its own or through co-funding with one or more other NSF programs) a total of 25 to 30 regular research project awards, 1 to 3 faculty early-career development (CAREER) awards, and 2 to 4 awards to support conferences, group travel, and/or other community-development activities. Depending on circumstances and the quality of proposals submitted to GSS, 0 to 3 research coordination network (RCN) awards, RAPID awards, EAGER awards, RAISE awards, and/or other kinds of special awards may be recommended.

Anticipated Funding Amount: $5,000,000 to $6,000,000 pending availability of funds. Project budgets should be developed at scales appropriate for the work to be conducted. Regular research awards supported by GSS generally range from between $40,000 to $400,000. CAREER awards must be for a minimum of $400,000; CAREER awards supported by GSS rarely exceed $550,000. Awards to support conferences, group travel, or other community-development activities generally range between $20,000 and $200,000. Research coordination network (RCN) awards generally range between $300,000 and $500,000. RAPID awards generally range between $20,000 and $60,000. All figures in the preceding sentences are totals that include both direct and indirect costs for the entire duration of the award. Somewhat larger funding amounts may be possible if other NSF programs participate in co-funding of a project with GSS.

IV. ELIGIBILITY INFORMATION

Who May Submit Proposals:

The categories of proposers eligible to submit proposals to the National Science Foundation are identified in the *NSF Proposal & Award Policies & Procedures Guide* (PAPPG), Chapter I.E. Unaffiliated individuals are not eligible to submit proposals in response to this solicitation.

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.

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 Grants.gov or via the NSF FastLane system.

- 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) 292-7827 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.

- 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) 292-7827 or by e-mail from nsfpubs@nsf.gov.

See PAPPG Chapter II.C.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.

Proposal Format Proposals not in conformance with the proposal-preparation requirements of the *PAPPG* or *NSF Grants.gov Application Guide* may be returned without review.

Proposers should be sure to note explicit formatting requirements regarding proposal pagination, fonts, margins, line spacing, and page formatting. Proposers must adhere to these requirements in order to ensure the readability of proposals and to ensure that the proposers are not seen as trying to gain an unfair advantage over other proposers in the same competition.

For some sections of a proposal to be submitted to GSS, guidance provided below takes precedent over the requirements specified in the *PAPPG* and *NSF Grants.gov Application Guide*. Proposers should carefully review all of these instructions so that they can prepare their proposal properly before it is submitted to NSF. If proposers have specific questions about these instructions, they should contact the GSS program directors a week or more before the relevant proposal-submission deadline. **Failure to comply with GSS solicitation-specific instructions may result in a proposal being returned without review**.

Definitions of Personnel
Different individuals may play different roles in the conduct of a project. Use the following definitions to determine which personnel fall into which category.

- *Principal Investigators* -- Individuals who will assume administrative responsibility for an award resulting from this competition, will help manage the award, and are listed on the cover sheet of the proposal.
- *Senior Personnel* -- All principal investigators, any other named senior personnel who will receive salary support, and any non-salaried senior investigators who will play lead roles in the conduct of the project. This group may include active participants in the research team from outside the U.S. (For RCN proposals, all members of the proposed steering committee are considered to be senior personnel.)
- *Project Participants* -- Every person involved with the research project, including students.

Proposal Sections to Be Prepared as Directed in the PAPPG and the NSF Grants.gov Application Guide
The following sections of the proposal are mandatory and should be prepared in accordance with instructions regarding those sections in the *Proposal and Award Policies and Procedures Guide* (*PAPPG*) or the *NSF Grants.gov Application Guide*:

- **References Cited** (Note that this is a separate section of the proposal and that it immediately follows the Project Description.)
- **Biographical Sketches** (Note that biographical sketches for the PI, co-PIs, and other senior personnel should include all required sections and that there are a maximum number of items that may be listed for some categories. Note that lists of collaborators and other affiliations must not be included in biographical sketches.)
- **Budgets** (Note that a narrative with budget justification should follow the budget forms, with explanations for all costs being as detailed as possible within the three-page limit for each organization's budget. Separate budgets for all subawardee organizations must be attached along with budget narratives for each of the subaward budgets.)
- **Current and Pending Support** (Note that this proposal is considered a pending activity and should be listed on the form for the PI, co-PIs, and all other senior personnel.)
- **Facilities, Equipment, and Other Resources** (Note that descriptions of other resources that may assist in the conduct of the project may be identified, but these descriptions should be narrative in nature and must not include any quantifiable financial information. These descriptions must be general in character and must not provide specifics regarding how facilities, equipment, and other resources will be used within this specific project. If there are no facilities, equipment, or other resources to describe, a statement to that effect must be included in the section.)

Collaborators and Other Affiliations Information. (Note that a single-copy document that accompanies the proposal but technically is not part of the proposal must be submitted to provide information about the collaborators and other affiliations of all individuals serving as a PI, co-PI, or senior personnel. This information should be prepared in accordance with the PAPPG Chapter II.C.1. For additional information about the submission of information about collaborators and other affiliations, refer to https://nsf.gov/bfa/dias/policy/coa.jsp.)

Proposal Sections with Special Instructions for Proposals Submitted in Response to This Solicitation

The following sections of the proposal are mandatory and should be prepared in accordance to the following supplementary instructions as well as to guidance in the PAPPG or the *NSF Grants.gov Application Guide*.

Proposal Cover Sheet

The solicitation number for this solicitation should be specified as the program solicitation number unless the proposal is for a CAREER award. Proposers should not use the number for the GSS Doctoral Dissertation Research Improvement solicitation or the number of the PAPPG.

For the NSF organizational unit to consider the proposal, select BCS-Geography and Spatial Sciences. You may select additional programs if you would like those programs to consider co-review of your proposal with GSS. (Investigators who would like another program to manage your proposal but have GSS engage in co-review should select that program first and then select BCS-Geography and Spatial Sciences. Note in such cases that the proposal must be submitted prior to the due date for the lead program and must be prepared in accordance with the proposal-preparation guidelines for the solicitation or program description for that program.)

The title of the proposal should describe the project in concise, informative language so that a scientifically or technically literate reader could understand what the project is about. The title should emphasize the scientific work to be undertaken. Proposers should not use cute or attention-grabbing subtitles, because such phrases will lead reviewers to question the intellectual significance of the project.

Personnel Listed on the Cover Sheet. Provide complete information requested on the cover sheet for the PI and for up to four co-PIs. Note the following special requirement:

- For **RCN proposals**, the network coordinator must be listed as the PI and up to four members of the RCN steering committee may be listed as co-PIs.

All other members of the RCN steering committee should be entered into FastLane as senior personnel.

Project Summary

As specified in the PAPPG and the *NSF Grants.gov Application Guide*, the Project Summary must not exceed one page in length and must include separate sections with the following headings: Project Overview, Intellectual Merit, and Broader Impacts.

- For **RCN proposals**, a list of all members of the steering committee and their home organizations must be included in the Project Overview section of the Project Summary.

Project Description

As specified in Chapter II.C.2.d of the PAPPG and in the comparable section of the *NSF Grants.gov Application Guide*, the Project Description should be a clear statement of the work to be undertaken. **Proposers should note that the Project Description must contain, as a separate section within the narrative, a section labeled "Broader Impacts."**

To be competitive for GSS funding, the Project Description should provide clear descriptions of relevant literature and theoretical frameworks within which the project is set, a complete description of the research methods that will be used, and discussion of the expected intellectual merit and broader impacts that may result from the project.

Proposers should note the special review criteria that are used to complement consideration of the standard NSF merit review criteria and to explicitly identify the expected larger-scope, longer-term significance of their project as well as its likelihood of success.

As specified in Chapter II.C.2.d.ii of the PAPPG and in the comparable section of the *NSF Grants.gov Application Guide*, the specification of URLs or inclusion of working links to external sources is not permitted in a Project Description, because the Project Description must be self-contained.

As specified in Chapter II.C.2.d.iii of the PAPPG and in the comparable section of the *NSF Grants.gov Application Guide*, the results from prior NSF support should be described in a separate section within the Project Description if the PI and/or any co-PIs have had NSF awards that started within the last five years. Note that information about results from a past award should include the information as specified in PAPPG and the *NSF Grants.gov Application Guide*, including discussion of the intellectual merit and broader impacts of each previous award discussed in the Project Description.

With the exception noted below, the Project Description may not be more than fifteen **(15)** pages in length. Those exceptions are as follows:

- For **RAPID proposals**, as specified in Chapter II.E.1 of the PAPPG and in the comparable section of the *NSF Grants.gov Application Guide*, the Project Description is expected to be no longer than five **(5)** pages in length. (Note that prior approval from a GSS program officer is required to submit a RAPID proposal of any length to GSS. If a PI wishes to submit a somewhat longer RAPID project description, permission should be obtain from the program director during pre-submission communications.)

Special Information and Supplementary Documentation

Following are supplementary documents for which special instructions are provided for proposals submitted in response to this solicitation that supplement guidance in the PAPPG and the *NSF Grants.gov Application Guide*:

Post-Doctoral Mentoring Plan

As specified in Chapter II.C.2.j of the PAPPG and the comparable section of the *NSF Grants.gov Application Guide*, a Post-Doctoral Mentoring Plan must be provided if any funding is requested to support a post-doctoral researcher in the proposal budget. (This requirement applies to both the submitting organization's budget and to any subaward budgets.) This is required whether the funding for the post-doctoral researcher(s) is requested in the prime institution's budget or through a subaward. The Post-Doctoral Mentoring Plan must be no longer than one (1) page in length for the project as a whole and must be included as a Supplementary Document. Although some NSF programs permit or require a mentoring plan for undergraduate and/or graduate students to be supported by an award, GSS does **not** permit the inclusion of a graduate and/or undergraduate student mentoring plan as a Supplementary Document. PIs who wish to include such student mentoring plans as part of the Project Description for their proposal may do so.

Data-Management Plan

All proposals must include a plan for data management and for sharing the products of research. The Data-Management Plan to be submitted with a proposal must be no longer than two (2) pages in length and must be included as a Supplementary Document.

When preparing their Data-Management Plans, proposers should address all five of the points specified in Chapter II.C.2.j of the PAPPG and the comparable section of the *NSF Grants.gov Application Guide*. Proposers should specify how they intend to make data, software, and other products of the research readily available to potential users through **institutionally maintained** archives, repositories, and/or distribution networks so that the products may be easily accessed by others over long time periods.

Letters of Collaboration

Brief statements, whether written as letters or as free-standing email messages from individuals and/or organizations that will work with the PIs and/or assist in the conduct of the proposed project, may be included as Supplementary Documents. Such letters are not needed from individuals included as senior personnel on a project or from subawardee organizations, because their involvement in the project is affirmed by the inclusion of their biographical sketches and/or subaward budgets.

Letters of collaboration included as a Supplementary Document must focus solely on the willingness of the letter's author and/or the author's organization to directly collaborate with the investigators and/or assist in the conduct of the project in ways that have been outlined in the Project Description. Such letters should not argue for support of the project by articulating in greater detail what activities the collaborator will undertake and/or by elaborating reasons for supporting the project. (If proposers wish to include letters from others written explicitly to express support for a project or to articulate more fully how the individual or organization would assist with the project, they can include the text of such letters in the Project Description, although the number of pages permitted for the Project Description may not be increased to accommodate such text.)

GSS program directors strongly encourage the use of a template like the following for letters of collaboration. If this template or very similar text is not used, the text provided by the letter's author must be equally brief and to-the-point. Inclusion of longer letters may result in the PIs being forced to

remove such letters (with no other changes to the proposal permitted), or NSF may return the proposal without review. If proposers want to ascertain whether alternate text will be acceptable, they should send a draft of any questionable letters to the GSS program directors for comment at least one week prior to the submission of the proposal.

Suggested template for a letter of collaboration:

To: NSF Geography and Spatial Sciences (GSS) Program

From: _____ *[Insert the name of the individual collaborator or the name of the organization and name and position of the official submitting this letter]*

By signing below or by transmitting this message electronically, I acknowledge that my organization and/or I *[Select appropriate words]* will collaborate with the investigators on this project and/or will provide assistance for the project described in the proposal titled _____," *[Insert proposal title]* with _____ *[Insert the PI's name]* as the Principal Investigator.

My organization and/or I will be involved in the manner described in the project description of this proposal.

Signed: _____ *[Insert the signature or name of the author of this letter]*

Organization: _____ *[Insert the name of the organization the letter's author is representing or with which the author is associated]*

Date: _____ *[Insert the date when the letter is signed or transmitted]*

IRB and/or IACUC Certifications

If the submitting organization's Institutional Review Board (IRB) has approved plans for research involving human subjects or the Institutional Animal Care and Use Committee (IACUC) has approved research involving vertebrate animals, certification of IRB and/or IACUC approval may be included in appropriate sections of the cover sheet. Documentation of the certification may be included as a supplementary document, but that is not required if sufficient information is provided by the sponsored research office on the cover sheet of the proposal.

If the IRB and/or IACUC have not approved the research plans when the proposal is submitted, the appropriate box(es) should be checked on the cover sheet and "Pending" should be listed on the line that follows. If IRB or IACUC approval is granted while the proposal is under review at NSF, certification of the approval should be sent to the GSS program directors. If the IRB or IACUC asks that plans be forwarded to it only when the investigators have received word that their project may be supported, the investigators should have the application ready for prompt submission, because notification from the NSF program directors that they would like to recommend the proposal for an award may come with a very brief time period during which necessary materials (including the IRB or IACUC certification) must be obtained. If the required certifications cannot be supplied quickly, GSS program directors may have to turn their attention to other meritorious projects that can be funded right away.

Most IRB or IACUC approvals are valid for specific time periods. If the expiration of the current approval will occur before or soon after the possible start date for an award, investigators should seek renewal of the approval so that they have an active certification if they are informed the proposal will be recommended for funding. Once the investigators receive written certification that the renewal has been approved, it should be forwarded to the managing NSF program officer for the proposal.

Research at Undergraduate Institutions (RUI) Supplementary Documents

If the proposal is submitted to GSS as a Research at Undergraduate Institutions (RUI) proposal, one RUI Impact Statement may be submitted as a supplementary document. In addition, a Certification of RUI Eligibility for the submitting organization may be included as a supplementary document. A Certification of RUI Eligibility may also be included for any subawardee organizations that qualify as predominantly undergraduate institutions. These documents must be prepared in accordance with the Facilitating Research at Primarily Undergraduate Institutions (RUI) solicitation. (Proposers should follow the guidance in the RUI solicitation with respect to including "RUI:" as a prefix to the title of the proposal on the cover sheet.)

Research Experiences for Undergraduates (REU) Supplementary Documents

If a proposal submitted to GSS includes support for undergraduate students in accordance provisions outlined in the Research Experiences for Undergraduates (REU) solicitation, text describing the nature of the REU activities must be included in the project description. Such text cannot be included as a supplementary document in a proposal submitted to GSS. *(Note that this guidance runs counter to text in the REU solicitation, but because the proposal is being submitted to GSS, the GSS guidance must be used.)*

Other Supplementary Documents

Unless authorized here or in PAPPG or the *NSF Grants.gov Application Guide*, no other materials should be included in this section. Survey or interview protocols are not permitted in this section, nor are reprints of articles previously published by the investigators. Proposals that include materials in this section that are appropriate in the project description but are inappropriate as supplementary documents may be returned without review.

Investigators who have questions regarding the appropriateness of submitting specific items as supplementary documents should contact the GSS program officers well in advance of the proposal-submission deadline to obtain guidance regarding how to proceed.

Appendices

No appendices are permitted.

Other Issues to Address When Preparing a Proposal for This Solicitation

Proposals Involving Multiple Organizations

In the case of a proposal involving multiple organizations, a single organization must be identified as the prime, and a single proposal describing the entire project must be submitted by that organization. Funds may be distributed among partner organizations via subawards from the prime organization. A

budget on the standard NSF budget form should be submitted for each subawardee. The requirement for a single organization to submit the sole proposal for a project is designed to facilitate effective coordination among participating organizations and to avoid difficulties that ensue in funded projects when individuals change organizations and/or cease to fulfill project responsibilities. Of the two types of collaborative proposal formats described in the PAPPG, this solicitation allows only a single proposal submission with subawards administered by that prime organization. Direct submission of linked collaborative sets of proposals by multiple organizations is not permitted.

Proposals Involving Collaborators at Foreign Organizations

Proposers are reminded they must provide biographical sketches of all senior project personnel, including those associated with foreign organizations.

Letters of collaboration (prepared in accordance with the guidelines specified in an earlier subsection in this solicitation) should be provided as supplementary documents from organizations that will not be supported through subawards.

While non-U.S. institutions are not eligible to submit proposals to this competition, the prime U.S. institution may, in limited cases, request funding for non-U.S. institutions through subawards. Indirect costs for such organizations should be determined in accordance with guidance provided in Chapter II.C.2.g.viii of the PAPPG and the comparable section of the *NSF Grants.gov Application Guide.*

Subawards

In accordance with the applicable award terms and conditions, proposers are reminded of their responsibilities with regard to subawardees. Should an award be made, the prime awardee is responsible for flowing down the appropriate terms and conditions to, as well as management and oversight of, any subawardees on the project, including any foreign subawardees.

B. Budgetary Information

Cost Sharing:

Inclusion of voluntary committed cost sharing is prohibited.

Other Budgetary Limitations:

Project budgets should be developed at scales appropriate for the work to be conducted. Within that context, the following budgetary ranges and limitations should be considered. Note that all figures provided are total support (including both direct and indirect costs) for the entire duration of a project. Except when there are fixed upper limits for specific kinds of awards, somewhat larger funding amounts may be possible if other NSF programs participate in joint funding of a project with GSS

- For **regular research proposals**, there are no absolute limitations, but awards supported by GSS generally range from between $40,000 to $400,000. Regular research awards may be up to five years in duration.
- For **CAREER proposals**, awards recommended by GSS must be for a minimum of $400,000. CAREER awards supported by GSS rarely exceed $550,000. CAREER awards must be five years in duration.
- For **proposals seeking support for conferences, group travel, and/or other community-development activities**, there are no absolute limitations, but these kinds of awards supported by GSS generally range between $20,000 and $200,000. These kinds of awards may be up to five years in duration.
- For **RCN proposals**, awards recommended by GSS may not exceed $500,000. RCN awards supported by GSS generally range between $300,000 and $500,000. RCN awards may be up to five years in duration.
- For **RAPID proposals**, awards recommended by GSS may not exceed $200,000. RAPID awards recommended by GSS generally range between $20,000 and $60,000. RAPID awards may be up to one year in duration.

C. Due Dates

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

    September 07, 2017

    First Thursday in September, Annually Thereafter

        Proposal submission deadline

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?
_nfpb=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 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 the NSF FastLane system for further processing.

Proposers that submitted via FastLane or 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 *Investing in Science, Engineering, and Education for the Nation's Future: NSF Strategic Plan for 2014-2018*. 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

As noted in the GSS strategic plan, GSS encourages and supports potentially transformative research that has potential larger-scope, longer-term significance for both basic understanding and for societal benefit. To help identify research projects that may potentially transform geography, other spatial sciences, and related fields, GSS seeks to assess the longer-term potential as well as the more immediate significance of research projects. As a complement to assessing the intellectual merit and the potential broader impacts of a proposed project, members of GSS advisory panels and other reviewers will be asked to provide responses to two questions:

- *As described in the proposal, what is the expected larger-scope, longer-term significance of the project if the project is conducted successfully?*
- *As described in the proposal, what is the likelihood that the project will be conducted successfully?*

Reviewers and GSS advisory panel members will be asked to assign scores in response to each of these questions using a 5-point scale:

> *As described in the proposal, what is the expected larger-scope, longer-term significance of the project if the project is conducted successfully?*
>
>> 5 Extremely significant
>> 4 Very significant
>> 3 Moderately significant
>> 2 Mildly significant
>> 1 Not significant
>
> *As described in the proposal, what is the likelihood that the project will be conducted successfully?*
>
>> 5 Extremely likely to succeed
>> 4 Very likely to succeed
>> 3 Moderate chances of success
>> 2 Minimal chances of success
>> 1 Unlikely to succeed

Proposals generally will be most competitive if both scores assessing potential significance and likelihood of success are high.

GSS employs an evaluation system known as "GSS One-Plus." GSS permits the submission of new proposals for regular research awards; awards for conferences, group travel, and community-development activities; and research coordination network awards only one time each year, with a proposal-submission deadline on the first Thursday of September. These proposals are evaluated during the following months, with funding decisions made in the early

months of the following calendar year. To facilitate lines of inquiry with high potential significance, the GSS program directors will invite PIs whose proposals were declined but who had especially promising regular research proposals to revise and resubmit their proposals prior to the next proposal-submission deadline. These PIs will have six to eight weeks to revise and resubmit proposals if they wish to do so. Their new proposals will undergo a new round of merit review to determine whether the proposed work maintains a high level of potential significance while increasing confidence in its likelihood of success. This system permits GSS to recommend more awards early in the calendar year that previously had been possible while also permitting some additional projects that have great potential larger-scope, longer-term significance to be supported sooner than would otherwise be the case.

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

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

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

C. Reporting Requirements

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

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

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

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

VIII. AGENCY CONTACTS

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

General inquiries regarding this program should be made to:

- Jacqueline Vadjunec-Program Director, telephone: (703) 292-7064, email: jmvadjun@nsf.gov

- Scott M. Freundschuh-Program Director, telephone: (703) 292-7076, email: sfreunds@nsf.gov

- Cori Jacildone-Program Specialist, telephone: (703) 292-8740, email: cjacildo@nsf.gov

For questions related to the use of FastLane or Research.gov, contact:

- FastLane and Research.gov Help Desk: 1-800-673-6188

  FastLane Help Desk e-mail: fastlane@nsf.gov.

  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.

For all general inquiries to the GSS program, please email gss-info@nsf.gov. This email will reach all current GSS program officers and one of them will reply to you.

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) 292-7827
> - **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
Office of the General Counsel
National Science Foundation
Alexandria, VA 22314

Policies and Important Links | Privacy | FOIA | Help | Contact NSF | Contact Web Master | SiteMap

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