

Geography and Spatial Sciences Program (GSS)

PROGRAM SOLICITATION

NSF 14-537

REPLACES DOCUMENT(S):

NSF 12-570



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 04, 2014

First Thursday in September, Annually Thereafter

Proposal-submission deadline

IMPORTANT INFORMATION AND REVISION NOTES

This solicitation provides instructions for preparation of a set of different kinds of proposals to the Geography and Spatial Sciences (GSS) Program, including regular research awards; proposals for awards for conferences, workshops, group-travel support, and community-development or community-serving activities; proposals for research coordination network (RCN) awards; and proposals for rapid-response research (RAPID) awards. This solicitation replaces instructions that had been included in the general GSS solicitation (previously NSF 12-570).

A different solicitation now includes instructions for preparation of proposals of Doctoral Dissertation Research Improvement (DDRI) proposals for submission to GSS (http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf14538). Note that the deadlines for submission of DDRI proposals to GSS are different than the deadlines specified for other kinds of proposals in this solicitation.

The solicitation notes **special review criteria** that GSS will ask reviewers and panel members to address regarding the expected larger-scale, 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 new **clarification regarding certain aspects of 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 lead, and a single proposal describing the entire project must be submitted by that organization, with funds distributed among partner organizations via subawards from the lead 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 17-1), which is effective for proposals submitted, or due, on or after January 30, 2017.

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 goals of the NSF Geography and Spatial Sciences (GSS) Program are:

- To promote scientific research in geography and the spatial sciences that advances theory and basic understanding and that addresses the challenges facing society.
- To promote the integration of geographers and spatial scientists in interdisciplinary research.
- To promote education and training of geographers and spatial scientists in order to enhance the capabilities of current and future generations of researchers.
- To promote the development and use of scientific methods and tools for geographic research.

The Geography and Spatial Sciences Program sponsors research on 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 on a variety of topics qualify for support if they offer promise of contributing to scholarship by enhancing 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, workshops, group-travel support, and community-development or community-serving activities
- Research coordination network (RCN) awards
- Rapid-response research (RAPID) awards
- Early-concept grants for exploratory research (EAGER) and other special kinds of award mechanisms established by NSF may be supported in rare and unusual cases. (GSS strives to be open to ideas and approaches in early stages of development and emphasizes the potential longer-term significance of new lines of inquiry as part of its merit evaluation of all proposals.)

Two different solicitations now provide information about proposals to be submitted for consideration by GSS.

One solicitation focuses on providing instruction for submission of proposals for regular research awards; proposals for awards for conferences, workshops, group-travel support, and community-development or community-serving activities; proposals for research coordination network (RCN) awards; and proposals for rapid-response research (RAPID) awards.

Proposals for doctoral dissertation research improvement (DDRI) awards are described in a separate solicitation (accessible via http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf14538). Note that there are different proposal submission deadlines for DDRI proposals submitted to GSS. Note also that there now are special eligibility requirements for doctoral students submitting DDRI proposals to GSS.

Proposals for faculty early-career development (CAREER) awards should submit proposals in accordance with the CAREER solicitation (accessible at http://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.

- Thomas J. Baerwald - Pgm Dir, telephone: (703) 292-7301, email: tbaerwal@nsf.gov
- Holly Hapke - Pgm Dir, telephone: (703) 292-8457, email: hhapke@nsf.gov
- Sunil Narumalani - Pgm Dir, telephone: (703) 292-4995, email: snarumal@nsf.gov
- Antoinette Winklerprins - Pgm Dir, telephone: (703) 292-7266, email: anwinkle@nsf.gov
- Raquel J. Robinson - Pgm Asst, telephone: (703)292-4626, email: rarobins@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

During a fiscal year, GSS expects to recommend (either on its own or jointly 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, workshops, group travel, and/or other community-development activities. Depending on circumstances and the quality of proposals submitted to GSS, 2 or 3 research coordination network (RCN) awards, RAPID awards, EAGER 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. Faculty early-career development (CAREER) awards must be a minimum of \$400,000, with CAREER awards supported by GSS rarely exceeding \$550,000. Awards to support conferences, workshops, group travel, and/or other community-development activities generally range between \$20,000 and \$300,000. 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.

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=papp.
 - 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: http://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 04, 2014
 - 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.

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I. INTRODUCTION

As specified in the Geography and Spatial Sciences Program [strategic plan](#), the goals of the NSF Geography and Spatial Sciences (GSS) Program are:

- To promote scientific research in geography and the spatial sciences that advances theory and basic understanding and that addresses the challenges facing society.
- To promote the integration of geographers and spatial scientists in interdisciplinary research.
- To promote education and training of geographers and spatial scientists in order to enhance the capabilities of current and future generations of researchers.
- To promote the development and use of scientific methods and tools for geographic research.

The Geography and Spatial Sciences Program sponsors research on 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 on a variety of topics qualify for support if they offer promise of contributing to scholarship by enhancing 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 (*Note that there is a separate solicitation for DDRI proposals to be submitted to GSS.*)
- Faculty early-career development (CAREER) awards
- Awards for conferences, workshops, group-travel support, and community-development or community-serving activities
- Research coordination network (RCN) awards
- Rapid-response research (RAPID) awards

GSS may support early-concept grants for exploratory research (EAGER) and awards using other special kinds of mechanisms established by NSF in rare and unusual cases. (Be aware that GSS strives to be open to ideas and approaches in early stages of development, and GSS emphasizes the potential larger-scale, longer-term significance of new lines of inquiry as part of its merit evaluation of all 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 Fiscal Years 2012 through 2016, [Empowering the Nation Through Discovery and Innovation](#) and with the [strategic plan for the Division of Behavioral and Cognitive Sciences \(BCS\)](#) of which it is a part, 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 the longer-term potential as well as the more immediate significance of research projects.

Proposals submitted for consideration by the Geography and Spatial Sciences Program at NSF will be most competitive if the research is grounded in relevant geographical and/or spatial scientific theory, if it focuses on one or a few core questions grounded in the theoretical framework that has been established, if it articulates how scientifically sound methods will be used to explore the validity of answers to the core questions, and 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 (or joint 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" for proposers, because a single program can provide support for proposed work 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. Such early pre-proposal contact 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.)

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.)*
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 [NSF-wide CAREER specifications](#). Note that the submission deadline for CAREER proposals is at a different time than proposal-submission deadline for other proposals submitted to GSS. *(Note that there is a separate solicitation for CAREER proposals, which complements the directions provided in this solicitation.)*
4. **Awards for conferences, workshops, group-travel support, 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 \$300,000. (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 for regular research proposals.
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. Somewhat larger funding amounts may be possible if other NSF programs participate in joint funding of a project with GSS.) Additional information about RCN awards is accessible from the [RCN solicitation](#). RCN proposals submitted to GSS must be submitted by the proposal-submission deadline specified for regular research proposals.
6. **Rapid-response research (RAPID) awards.** These awards provide support for individuals or teams of researchers for one to two years to capture ephemeral data that are critical for the conduct of specific, well-formulated research projects. Although project plans may be precipitated by 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 officers must be contacted before a RAPID proposal is submitted.

III. AWARD INFORMATION

Anticipated Type of Award: Continuing Grant or Standard Grant

Estimated Number of Awards: 30 to 40

During a fiscal year, GSS expects to recommend (either on its own or jointly 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, workshops, group travel, and/or other community-development activities. Depending on circumstances and the quality of proposals submitted to GSS, 2 or 3 research coordination network (RCN) awards, RAPID awards, EAGER awards, and/or other 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. Faculty early-career development (CAREER) awards must be a minimum of \$400,000, with CAREER awards supported by GSS rarely exceeding \$550,000. Awards to support conferences, workshops, group travel, and/or other community-development activities generally range between \$20,000 and \$300,000. 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.

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 Grant Proposal Guide (GPG). The complete text of the GPG is available electronically on the NSF website at: http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpg. Paper copies of the GPG 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: (http://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.

Important Proposal Preparation Information: FastLane will check for required sections of the full proposal, in accordance with *Grant Proposal Guide* (GPG) instructions described in Chapter II.C.2. The GPG requires submission of: Project Summary; Project Description; References Cited; Biographical Sketch(es); Budget; Budget Justification; Current and Pending Support; Facilities, Equipment & Other Resources; Data Management Plan; and Postdoctoral Mentoring Plan, if applicable. If a required section is missing, **FastLane will not accept the proposal.**

Please note that the proposal preparation instructions provided in this program solicitation may deviate from the GPG instructions. If the solicitation instructions do not require a GPG-required section to be included in the proposal, insert text or upload a document in that section of the proposal that states, "Not Applicable for this Program Solicitation." Doing so will enable FastLane to accept your proposal.

Please note that per guidance in the GPG, the Project Description must contain, as a separate section within the narrative, a discussion of the broader impacts of the proposed activities. Unless otherwise specified in this solicitation, you can decide where to include this section within the Project Description.

Proposal Format

Proposals not in conformance with the proposal-preparation requirements of the *GPG* 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 *GPG* and *NSF Grants.gov Application Guide*. Proposers should carefully review this section to ensure that their proposal is prepared properly before the proposal is submitted to GSS. **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 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 Grant Proposal Guide or 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 *Grant Proposal Guide* or the *NSF Grants.gov Application Guide*:

- **Project Summary** (Note the requirements regarding explicit discussion of the intellectual merit and broader impacts in separate subsections. Those submitting an RCN proposal should note special requirements for items to be included in the project summary as specified in the RCN solicitation.)
- **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.)
- **Collaborators and Other Affiliations Information** (Note that a Single-Copy Document is required for all PIs, co-PIs, and other senior personnel. Each document should have the individual's name at the top and should consist of a list of collaborators and other affiliations in accordance with GPG Chapter II.C.1.e.)
- **Budgets** (Note that a narrative with budget justification should follow the budget forms, with explanations for all costs being as detailed as possible. Separate budgets for all subaward organizations should also be attached along with budget narratives for 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. Note also that if there are no facilities, equipment, or other resources to describe, a statement to that effect must be included in the proposal.)

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 *Grant Proposal Guide* 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 NSF Grant Proposal Guide:

- For **CAREER proposals**, use the solicitation number for the [CAREER solicitation](#)

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 joint 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. No special prefixes are needed for regular research proposals or proposals for conferences, workshops, group-travel, or other community-development activities, but use the following prefixes for these other specific types of proposals:

- For **CAREER proposals**, place "CAREER:" at the start of the title.
- For **RCN proposals**, place "RCN:" at the start of the title.
- For **RAPID proposals**, place "RAPID:" at the start of the title.

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 requirements

- For **RCN proposals**, the network coordinator should be listed as the PI and up to four members of the RCN steering committee listed as co-PIs. Any other members of the RCN steering committee should be entered into FastLane as senior personnel.
- For **CAREER proposals**, specify only the CAREER proposer as a PI. No co-PIs are permitted.

Project Description

As specified in Chapter II, Section C.2.d of the NSF *Grant Proposal Guide* 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 a separate section within the narrative that discusses the broader impacts of the proposed activities.**

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-scale, longer-term significance of their project as well as its likelihood of success.

Letters of support from other individuals and/or organizations that are not permitted as supplementary documents may be included in the project description.

As specified in Chapter II, Section C.2.d.iii of the NSF *Grant Proposal Guide* 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 funding within the last five years.

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

- For **RCN proposals**, note special requirements for items to be included in the project description as specified in the RCN solicitation.
- For **RAPID proposals**, as specified in Chapter II, Section D.1 of the Grant Proposal 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 obtained 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 *Grant Proposal Guide* and the *NSF Grants.gov Application Guide*:

Post-Doctoral Mentoring Plan

As specified in Chapter II, Section C.2.j of the *Grant Proposal Guide* 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 is required whether the funding for the post-doctoral researcher(s) is requested in the lead institution's budget or through a subaward. The post-doc 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. While 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 plans as part of the project description for their proposal may do so.

Data-Management Plan

All proposals must include as a supplementary document a plan for data management and 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.

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

Letters of Collaboration or Letters of Commitment

Brief statements, whether written as letters or as free-standing e-mail messages from individuals and/or organizations that will work with the PIs and/or provide in-kind support for 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 or letters of commitment should focus solely on the willingness of the letter's author to collaborate or provide in-kind support for 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. Such additional text may be included in the project description of the proposal but is not permitted in a supplementary document.

GSS program directors **strongly recommend the use of a template like one of the following for letters of collaboration or letters of commitment. If one of these templates 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.**

Suggested template for a letter of collaboration:

To: NSF Geography and Spatial Sciences (GSS) Program

From: _____ [Insert the name of the individual collaborator or 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 I am listed as a collaborator on the proposal titled _____," [Insert proposal title] with _____ [Insert the PI's name] as the Principal Investigator.

I agree to undertake the tasks associated with me as 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]

Suggested template for a letter of commitment:

To: NSF Geography and Spatial Sciences (GSS) Program

From: _____ [Insert the name of the individual collaborator or 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 I am listed as a collaborator on the proposal titled _____," [Insert proposal title] with _____ [Insert the PI's name] as the Principal Investigator.

I commit to provide or make available the resources designated in the project description of the proposal that seeks support for this project.

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]

Lengthier letters from others that articulate what activities a collaborator may undertake and/or that provide

(Note: When special program solicitations, such as the Facilitating Research at Primarily Undergraduate Institutions (RUI) solicitation, permit special kinds of supplementary documents, they may be permitted in proposals submitted to GSS. If you have questions regarding the appropriateness of certain kinds of submissions, contact the GSS program officers well in advance of the proposal-submission deadline for clarification.)

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 that may be included on 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 for approval, have the application ready to go, because notification from the program director that she/he 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, be prepared to seek renewal of the approval so that you have active certification if you are informed the proposal will be recommended for funding. Once you receive written certification that your renewal has been approved, forward it to the managing program officer of your proposal.

Other Supplementary Documents

Unless authorized here or in the *Grant Proposal Guide* 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 belong in the project description may be returned without review.

- For **RCN proposals**, one-page summaries of the relationship between the proposed RCN project and the current research activities for each investigator may **NOT** be included as supplementary documents. Such information may be included for members of the steering committee within the project description, or brief reference to relevant activities may be specified in the list of "synergistic activities" in the biographical sketches of the steering committee members. (This restriction on the use of "Current Activities" statements for steering-committee members now is in accordance with the guidance provided in the [RCN solicitation](#).)

Note that funding for undergraduate students may be provided in new proposals using funding comparable to the support provided for Research Experiences for Undergraduates (REU) supplements. While preparation of budgets for such students should be prepared in accordance with guidelines in the REU solicitation accessible from the [REU website](#), proposals submitted to GSS may not include additional text describing activities for the students in a supplementary document. All descriptions of such activities must be contained in the project description of the proposal.

Appendices

No appendices are permitted.

Other Issues to Address When Preparing a Proposal for This Solicitation

Proposals Involving Multiple Organizations

In the case of proposals involving multiple organizations, a single organization must be identified as the lead, 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 lead 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 NSF Grant Proposal Guide, this solicitation allows only a single proposal submission with subawards administered by that lead 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, and letters of collaboration (prepared in accordance with the guidelines specified above) 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 lead U.S. institution may, in limited cases, request funding for non-U.S. institutions through subawards. As described in Chapter V, Section D.1.b of the NSF *Award and Administration Guide*, indirect costs may not be charged by a non-U.S. organization unless that organization has a previously negotiated rate with a U.S. federal agency.

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, workshops, 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 \$300,000. 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 two years in duration.

C. Due Dates

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

September 04, 2014

First Thursday in September, Annually Thereafter

Proposal-submission deadline

The GSS conducts three competitions annually:

The deadlines for submission of **full proposals for Doctoral Dissertation Research Improvement (DDRI) awards** are the **second Thursday in February** and the **second Thursday in August**. (Note that there now is a separate solicitation for DDRI proposals to be submitted to GSS.)

The deadline for submission of **full proposals for regular research project awards; for awards for conferences, workshops, group-travel support, and community-development or community-serving activities; and for research coordination network (RCN) awards** is the **first Thursday in September**. (Note that the solicitation for submission of these proposals now is separate from the solicitation for DDRI proposals to be submitted to GSS. Information about the submission of DDRI proposals to GSS is accessible at: http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503621&org=SBE&from=home.)

GSS also considers proposals for Faculty Early-Career Development (CAREER) awards, but the deadline for submission of those proposals is specified in the CAREER solicitation. This deadline normally is in the latter half of July annually. (Note that a few specific points regarding submission of CAREER proposals to GSS are included in this solicitation).

D. FastLane/Grants.gov Requirements

For Proposals Submitted Via FastLane:

To prepare and submit a proposal via FastLane, see detailed technical instructions available at: <https://www.fastlane.nsf.gov/a1/newstan.htm>. For FastLane user support, call the FastLane Help Desk at 1-800-673-6188 or e-mail fastlane@nsf.gov. The FastLane Help Desk answers general technical questions related to the use of the FastLane system. Specific questions related to this program solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this funding opportunity.

For Proposals Submitted Via Grants.gov:

Before using Grants.gov for the first time, each organization must register to create an institutional profile. Once registered, the applicant's organization can then apply for any federal grant on the Grants.gov website. Comprehensive information about using Grants.gov is available on the Grants.gov Applicant Resources webpage: <http://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 are strongly encouraged to use FastLane 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 the GPG as [Exhibit III-1](#).

A comprehensive description of the Foundation's merit review process is available on the NSF website at: http://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 [Empowering the Nation Through Discovery and Innovation: NSF Strategic Plan for Fiscal Years \(FY\) 2011-2016](#). 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 core strategies 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 provide abundant opportunities where individuals may concurrently assume responsibilities as researchers, educators, and students, and where all can engage in joint efforts that infuse education with the excitement of discovery and enrich research through the variety of learning perspectives.

Another core strategy in support of NSF's mission is broadening 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. ([GPG 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 [GPG 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
 1. Advance knowledge and understanding within its own field or across different fields (Intellectual Merit); and
 2. 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-scale, 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-scale, 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 7-point scale:

What is the expected larger-scale, longer-term significance of the project (as described in the proposal) if the project is conducted successfully?

- 7 Extremely significant
- 6 Very significant
- 5 Significant
- 4 Moderately significant
- 3 Somewhat significant
- 2 Very mildly significant
- 1 Not significant

What is the likelihood that the project (as described in the proposal) will be conducted successfully?

- 7 Very, very likely to succeed
- 6 Very likely to succeed
- 5 Reasonably likely to succeed
- 4 Moderate chances of success
- 3 Minor chances of success
- 2 Minimal chances of success
- 1 Very unlikely to succeed

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

In order to facilitate lines of inquiry with high potential significance, GSS program officers will invite PIs with especially promising regular research proposals to revise and resubmit their proposals prior to the next proposal-submission deadline. The deadline for resubmission of proposals will be in the letters of invitation sent to PIs when their proposals are formally declined by NSF. PIs will have six to eight weeks to revise and resubmit proposals if they wish to do so. Revised proposals will be evaluated independently to determine whether the proposed work maintains a high level of potential significance while increasing confidence in its likelihood of success.

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 http://www.nsf.gov/awards/managing/award_conditions.jsp?org=NSF. Paper copies may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 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=papp.

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=papp.

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:

- Thomas J. Baerwald - Pgm Dir, telephone: (703) 292-7301, email: tbaerwal@nsf.gov
- Holly Hapke - Pgm Dir, telephone: (703) 292-8457, email: hhapke@nsf.gov
- Sunil Narumalani - Pgm Dir, telephone: (703) 292-4995, email: snarumal@nsf.gov
- Antoinette Winklerprins - Pgm Dir, telephone: (703) 292-7266, email: anwinkle@nsf.gov
- Raquel J. Robinson - Pgm Asst, telephone: (703)292-4626, email: rarobins@nsf.gov

For questions related to the use of FastLane, contact:

- FastLane Help Desk, telephone: 1-800-673-6188; e-mail: fastlane@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 <http://www.grants.gov>.

ABOUT THE NATIONAL SCIENCE FOUNDATION

The National Science Foundation (NSF) is an independent Federal agency created by the National Science Foundation Act of 1950, as amended (42 USC 1861-75). The Act states the purpose of the NSF is "to promote the progress of science; [and] to advance the national health, prosperity, and welfare by supporting research and education in all fields of science and engineering."

NSF funds research and education in most fields of science and engineering. It does this through grants and cooperative agreements to more than 2,000 colleges, universities, K-12 school systems, businesses, informal science organizations and other research organizations throughout the US. The Foundation accounts for about one-fourth of Federal support to academic institutions for basic research.

NSF receives approximately 55,000 proposals each year for research, education and training projects, of which approximately 11,000 are funded. In addition, the Foundation receives several thousand applications for graduate and postdoctoral fellowships. The agency operates no laboratories itself but does support National Research Centers, user facilities, certain oceanographic vessels and Arctic and Antarctic research stations. The Foundation also supports cooperative research between universities and industry, US participation in international scientific and engineering efforts, and educational activities at every academic level.

Facilitation Awards for Scientists and Engineers with Disabilities (FASSED) provide funding for special assistance or equipment to enable persons with disabilities to work on NSF-supported projects. See the *NSF Proposal & Award Policies & Procedures Guide* Chapter II.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 <http://www.nsf.gov>

- **Location:** 4201 Wilson Blvd. Arlington, VA 22230
- **For General Information** (NSF Information Center): (703) 292-5111
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