

Political Science Doctoral Dissertation Research Improvement Grants (PS DDRIG)

PROGRAM SOLICITATION NSF 15-571



National Science Foundation

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

Full Proposal Target Date(s):

August 28, 2015

June 15, 2016

June 15, Annually Thereafter

IMPORTANT INFORMATION AND REVISION NOTES

This solicitation provides instructions for preparation of proposals for the Doctoral Dissertation Research Improvement Grant (DDRIG) awards to the Political Science Program. It replaces instructions that had been included in the Social, Behavioral, and Economic Sciences (SBE) Doctoral Dissertation Research Improvement Grants (SBE-DDRIG) announcement ([NSF-11-547](#)).

This solicitation outlines new submission requirements for doctoral students submitting DDRIG proposals through their faculty advisor to the Political Science Program. The advisor or another faculty member serving as the principal investigator (PI) of the proposal is required to submit a signed statement affirming that the student will be able to undertake the proposed research soon after a DDRIG award is made. In addition, the PI must affirm that she/he has read the proposal and believes that it makes a strong case for support of the dissertation research project.

Important Information

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:

Political Science Doctoral Dissertation Research Improvement Grants (PS DDRIG)

Synopsis of Program:

The Political Science Program supports scientific research that advances knowledge and understanding of citizenship, government, and politics. Research proposals are expected to be theoretically motivated, conceptually precise, methodologically rigorous, and empirically oriented. Substantive areas include, but are not limited to, American government and politics, comparative government and politics, international relations, political behavior, political economy, and political institutions.

In recent years, program awards have supported research projects on bargaining processes; campaigns and elections, electoral choice, and electoral systems; citizen support in emerging and established democracies; democratization, political change, and regime transitions; domestic and international conflict; international political economy; party activism; political psychology and political tolerance. The Program also has supported research experiences for undergraduate students and infrastructural activities, including methodological innovations, in the discipline.

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.

- Brian D. Humes - Program Director, 995 N, telephone: (703) 292-7284, email: bhumes@nsf.gov
- Monique Moore - Program Specialist, 995 N, telephone: (703) 292-4951, email: mmoore@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

Estimated Number of Awards: 30 to 40

During a fiscal year, the Political Science Program expects to recommend a total of 30-40 Doctoral Dissertation Research Improvement Grant (DDRIG) awards.

Anticipated Funding Amount: \$700,000

The Political Science Program anticipates spending up to \$700,000, pending the availability of funds. Doctoral Dissertation Research Improvement Grant (DDRIG) awards may not exceed \$15,000 in direct costs plus indirect costs for the entire duration of the award. There are no indirect cost limitations; proposals submitted in response to this solicitation are subject to the awardee's current federally negotiated indirect cost rate. Proposal budgets should be developed at scales appropriate for the work to be conducted.

Eligibility Information

Who May Submit Proposals:

Proposals may only be submitted by the following:

- Universities and Colleges - doctoral degree granting universities and colleges accredited in, and having a campus located in, the U.S., acting on behalf of their faculty members. Such organizations are also referred to as academic institutions.

Who May Serve as PI:

- The proposal must be submitted by the dissertation advisor(s) on behalf of the graduate student who is at the point of initiating or already conducting dissertation research.
- The advisor is the Principal Investigator (PI) and the doctoral student whose dissertation research will be supported must be designated as a Co-PI.
- The student must be the author of the proposal.
- The student must be enrolled at a U.S. institution but need not be a U.S. citizen.
- Proposals from women, minorities, and persons with disabilities are strongly encouraged.

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 Grants.gov: *NSF Grants.gov Application Guide: A Guide for the Preparation and Submission of NSF Applications via Grants.gov* guidelines apply (Note: The *NSF Grants.gov Application Guide* is available on the Grants.gov website and on the NSF website at: https://www.nsf.gov/publications/pub_summ.jsp?ods_key=grantsgovguide).

B. Budgetary Information

- **Cost Sharing Requirements:**

Inclusion of voluntary committed cost sharing is prohibited.

- **Indirect Cost (F&A) Limitations:**

Not Applicable

- **Other Budgetary Limitations:**

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

C. Due Dates

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

August 28, 2015

June 15, 2016

June 15, Annually Thereafter

Proposal Review Information Criteria

Merit Review Criteria:

National Science Board approved criteria apply.

Award Administration Information

Award Conditions:

Standard NSF award conditions apply.

Reporting Requirements:

Standard NSF reporting requirements apply.

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I. INTRODUCTION

The Political Science Program supports scientific research that advances knowledge and understanding of citizenship, government, and politics. Research proposals are expected to be theoretically motivated, conceptually precise, methodologically rigorous, and empirically oriented. Substantive areas include, but are not limited to, American government and politics, comparative government and politics, international relations, political behavior, political economy, and political institutions.

In recent years, program awards have supported research projects on bargaining processes; campaigns and elections, electoral choice, and electoral systems; citizen support in emerging and established democracies; democratization, political change, and regime transitions; domestic and international conflict; international political economy; party activism; political psychology and political tolerance. The Program also has supported research experiences for undergraduate students and infrastructural activities, including methodological innovations, in the discipline.

This solicitation provides instructions for preparation of proposals for the Doctoral Dissertation Improvement Grant (DDRIG) proposals to the Political Science Program. It replaces instructions included in the Social, Behavioral and Economic Sciences (SBE) Doctoral Dissertation Improvement Grant (SBE-DDRIG) announcement ([NSF 11-547](#)).

II. PROGRAM DESCRIPTION

Through its competitive grants competitions, the Political Science Program of the U.S. National Science Foundation seeks to advance basic understanding and methods in Political Science and related fields to enhance fundamental knowledge and practice. The Political Science Program is committed to supporting basic research that advances knowledge and understanding of citizenship, government, and politics and research that is theoretically motivated, conceptually precise, methodologically rigorous, and empirically oriented. The Program seeks to encourage and support potentially transformative research that has potential larger-scale, longer-term significance for both basic understanding and for societal benefit.

The Political Science Program dissertation research improvement grants are awarded to support high quality doctoral dissertation research in political science. A proposal submitted for consideration by the Political Science Program at NSF will be most competitive if the research contributes to theoretical development and substantive knowledge, rather than merely focusing on specific topics of political interest. Competitive proposals focus on one or a few core questions that are theoretically derived and empirically oriented, and examined with methodological rigor. As a general rule, proposals that review well are those that clearly state a central research question, make an argument that engages and/or debates relevant literatures, specifies the data that will be gathered and the analytic procedures that will apply to those data. Additionally, strong proposals state what the researcher expects to find or show through the research. Projects designed primarily to "expand," "explore," or "develop" our understanding of a phenomenon tend to be too preliminary for NSF support. Likewise, the Political Science Program does not fund evaluation projects or those with a primarily applied focus. NSF-funded Political Science proposals tend to be theoretically framed and make clear contributions to political science theory, and the strongest proposals have a research design that permits falsification.

The Political Science Program does not co-review DDRIG proposals. Proposals submitted to the DDRIG program in Political Science will only be reviewed by the Political Science Program. Also, the Program will not co-review DDRIG proposals submitted to other NSF programs. Doctoral Dissertation Research Improvement Grant (DDRIG) awards provide support to enhance and improve the conduct of doctoral dissertation projects conducted by doctoral students enrolled in U.S. universities who are conducting scientific research that enhances basic scientific knowledge. As noted in the title of the awards, DDRIG awards are meant to improve the conduct of the dissertation research. All DDRIG proposals recommended for funding by the Political Science Program must clearly demonstrate how the proposed research will contribute to the advancement of basic political-science scientific theory and knowledge. The most competitive proposals will be those that also demonstrate how already significant research will be improved with DDRIG funding.

DDRIG awards are not intended to provide the full costs of a student's doctoral dissertation research. DDRIG awards recommended by Political Science may not exceed \$15,000 in allowable direct costs for the entire duration of the award. Indirect costs are in addition to this maximum direct cost limitation and are subject to the awardee's current federally negotiated indirect cost rate. Project budgets should be developed at scales appropriate for the work to be conducted and may only include costs directly associated with the conduct of dissertation research. DDRIG awards provide funding for research costs not normally covered by the student's university. Examples of the kinds of expenses that may be included in a DDRIG proposal budget are the following:

- Costs associated with travel and related expenses to conduct research at field sites, archives, specialized collections, and/or facilities away from the student's campus
- Costs for data-collection activities, including the conduct of surveys, questionnaires, and/or focus groups or the purchase of extant data
- Costs for equipment necessary for the conduct of the project that will be devoted to the project over the duration of the award (Note that any equipment purchased with NSF funds becomes property of the awardee organization)
- Costs for payments to research subjects and/or informants
- Costs for non-routine materials and supplies required for the conduct of the project
- Costs for data transcription (a letter outlining service and service costs will be required before an award will be recommended)
- Analysis and research services not otherwise available
- Costs for training in qualitative and quantitative methods required to complete the dissertation

The Political Science Program, due to budgetary constraints, will not support travel to professional conferences to present research results. Costs that cannot be reimbursed by DDRIG awards include the following:

- A stipend or salary for the doctoral student or advisor (Note that salaries or payments for work by other individuals whose assistance may be essential to conduct the project may be permitted when there is sound justification for such expenses)
- Costs for tuition, textbooks, or other items not directly related to the conduct of dissertation research
- Publication costs for articles based on the dissertation, except when the university's degree requirements permit the substitution of published research results for a free-standing dissertation
- Costs for travel of the advisor to the field site

DDRIG awards may be for one or two years in duration. The dissertation does not have to be completed during that time period, but costs associated with research activities to be reimbursed with DDRIG funds must be incurred when the award is active.

III. AWARD INFORMATION

Anticipated Type of Award: Standard Grant

Estimated Number of Awards: 30 to 40

During a fiscal year, the Political Science Program expects to recommend a total of 30-40 Doctoral Dissertation Research Improvement Grant (DDRIG) awards.

Anticipated Funding Amount: \$700,000

The Political Science Program anticipates spending up to \$700,000, pending the availability of funds. Doctoral Dissertation Research Improvement Grant (DDRIG) awards may not exceed \$15,000 in direct costs plus indirect costs for the entire duration of the award. There are no indirect cost limitations; proposals submitted in response to this solicitation are subject to the awardee's current federally negotiated indirect cost rate. Proposal budgets should be developed at scales appropriate for the work to be conducted.

Estimated program budget, number of awards and average award size/duration are subject to the availability of funds.

IV. ELIGIBILITY INFORMATION

Who May Submit Proposals:

Proposals may only be submitted by the following:

- Universities and Colleges - doctoral degree granting universities and colleges accredited in, and having a campus located in, the U.S., acting on behalf of their faculty members. Such organizations are also referred to as academic institutions.

Who May Serve as PI:

- The proposal must be submitted by the dissertation advisor(s) on behalf of the graduate student who is at the point of initiating or already conducting dissertation research.
- The advisor is the Principal Investigator (PI) and the doctoral student whose dissertation research will be supported must be designated as a Co-PI.
- The student must be the author of the proposal.
- The student must be enrolled at a U.S. institution but need not be a U.S. citizen.
- Proposals from women, minorities, and persons with disabilities are strongly encouraged.

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.

In addition to the PAPPG guidelines, specific instructions for Political Science Doctoral Dissertation Research Improvement Grants are:

1. Cover Sheet
 - The Project Title should begin with "Doctoral Dissertation Research." The substantive title of the proposal should follow. This substantive portion of the title should describe the project in concise, informative language so that a scientifically or technically literate reader could understand what the project is about.
 - List the primary dissertation advisor as the "PI" and the student as the "Co-PI."
 - Mark human subjects as pending, approved, or exempted.
2. Project Summary
 - This section consists of an overview, a statement on the intellectual merit of the proposed activity, and a statement on the broader impacts of the proposed activity.
3. Project Description
 - This section should describe the scientific significance of the work, including its relationship to other current research, and the design of the project in sufficient detail to permit evaluation. It should also present and interpret progress to date if the research is already underway.
 - To be competitive for Political Science Program 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.
 - A Research Schedule should be included and should indicate the date that funds are required.
 - The "Results from Prior NSF Support" section is not required.
 - The project description may not be more than ten (10) pages in length. If the PI or Co-PI has had NSF funding within the last three years, information regarding that funding may be included as an additional 11th page.

NOTE: Per guidance in the PAPPG, the Project Description must contain, as a separate section within the narrative, a discussion of the broader impacts of the proposed activities. You can decide where to include this section within the Project Description.

4. References Cited
 - Only references cited should be included.
 - This is a separate section of the proposal and it immediately follows the Project Description.
5. Biographical Sketches and Collaborators and Other Affiliations Information
 - Biographical sketches are required for the advisor (PI), doctoral student (Co-PI), additional Co-PIs, and other Senior Personnel and should include all required sections.
 - Biographical sketches should not exceed 2 pages each and should not include transcripts or letters of reference.
 - A Single-Copy Document (Collaborators and Other Affiliations Information) is also 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 PAPPG Chapter II.C.1.e.
6. Budget
 - Total of relevant travel expenses should be included in Domestic Travel and/or Foreign Travel.
 - All other expenses should be included in "Other Direct Costs," unless otherwise specified by this solicitation.
 - There are no salaries or stipends for the graduate student or the advisor; please check this solicitation for maximum allowed costs for dissertation expenses.
 - A narrative with budget justification should follow the budget forms, with explanations for all costs being as detailed as possible.
7. Current and Pending Support
 - Forms should be submitted for both the PI (advisor) and Co-PI (student).
 - This proposal is considered a pending activity and should be listed on the form for the advisor and doctoral student.
8. Facilities, Equipment & Other Resources
 - Follow guidance in the Grant Proposal Guide. 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.
 - If there are no facilities, equipment, or other resources to describe, a statement to that effect must be included on this form.

9. Supplementary Documentation

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.

Signed Statement from the Principal Investigator

- The advisor or other faculty member serving as the principal investigator (PI) of the proposal now is required to submit a signed statement affirming that the student will be able to undertake the proposed research soon after a DDRIG award is made. In addition, the PI must affirm that she/he has read the proposal and believes that it makes a strong case for support of the dissertation research project.
- The following template must be used to prepare this statement, with changes permitted only to provide information where there are blank lines in the template. Additional text is not permitted. The statement must be signed by the PI. (In very unusual cases, an electronic signature or equivalent may be permitted, but replacement of a real signature with a PI's real equivalent is permitted only with prior written approval from a Political Science program officer).

Required template for a statement signed by the PI

To: NSF Political Science Program

From: _____ [Insert name of the PI]

By signing below, I acknowledge that I am listed as the Principal Investigator on this proposal, entitled "_____" (insert title of the DDRIG proposal from the Cover Sheet), with my doctoral student advisee _____ (insert typed/printed name of the Co-PI) as the Co-Principal Investigator.

I affirm that the doctoral student is at a stage in her/his graduate program that makes it very likely that the student will be able to undertake the dissertation research described in this proposal soon after a DDRIG award is made.

I affirm that I have read this proposal, and I believe that this proposal makes a strong case for NSF support for this project.
[Print this paragraph in bold text]

Signed: _____ [Insert PI's signature]

University: _____ [Insert university name]

Date: _____ [Insert date that the statement is signed by the PI]

Letters of Collaboration

Brief statements (whether written as letters or as free-standing e-mail messages) from individuals and/or organizations that will work with the doctoral student and/or provide in-kind support for the proposed project may be included as supplementary documents. Such letters are not needed from other individuals at the student's university or from that university.

Letters of collaboration should focus 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 first ten pages of the project description of the proposal, but such supportive text is not permitted in a supplementary document.

Political Science program directors strongly recommend the use of the following template for letters of collaboration. If this template or very similar text is not used, the text provided by the letter's author should be equally brief and to-the-point. Inclusion of longer letters may result in the PI 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 Political Science 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 or transmitting this message electronically, I acknowledge that I am listed as a collaborator on the proposal titled "_____" [Insert proposal title], which is a doctoral dissertation research project to be undertaken by _____ [Insert doctoral student's name].

I agree to collaborate with and support the doctoral student by undertaking 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]

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 must 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 projects 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 managing Political Science program director. 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.

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 an 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 NSF Grant Proposal Guide or the NSF Grants.gov Application Guide, no other materials should be included in this section. Letters of recommendation, letters of support, transcripts, and other such materials should not be included as supplementary documents.

Appendices

No appendices are permitted.

B. Budgetary Information

Cost Sharing:

Inclusion of voluntary committed cost sharing is prohibited.

Other Budgetary Limitations:

- In general, grants are awarded for up to 24 months but 12 months is often the norm.
- Funds are to be used exclusively for necessary expenses incurred in the actual conduct of the dissertation research.
- These funds may not be used as a stipend for the student, for tuition, textbooks, notebooks, journals, or for the typing, reproduction, or publication costs of the student's dissertation.
- Although stipends are not permitted, an allowance for expenses during time away from the student's U.S. academic institution may be allowed.
- Funds may be requested for research assistants only in special circumstances, which should be carefully justified. Many of the limitations are program specific.
- Please consult the relevant program's website and contact the program assistant or program director if necessary.

Budget Preparation Instructions:

Since salaries or stipends for the doctoral student or their advisor(s) are not eligible for support, after the PI and Co-PI(s) are entered on the Cover Sheet, their names must be manually removed from the Senior Personnel listing on the budget pages. This is to avoid construal as voluntary committed cost sharing, which is not permitted.

C. Due Dates

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

August 28, 2015

June 15, 2016

June 15, Annually Thereafter

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: <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 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 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.

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) 292-7827 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=papppg.

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=papppg.

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:

- Brian D. Humes - Program Director, 995 N, telephone: (703) 292-7284, email: bhumes@nsf.gov
- Monique Moore - Program Specialist, 995 N, telephone: (703) 292-4951, email: mmoore@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.

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 <https://www.nsf.gov>

- **Location:** 4201 Wilson Blvd. Arlington, VA 22230
- **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 Systems of Records, [NSF-50](#), "Principal Investigator/Proposal File and Associated Records," 69 Federal Register 26410 (May 12, 2004), and [NSF-51](#), "Reviewer/Proposal File and Associated Records," 69 Federal Register 26410 (May 12, 2004). 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
Arlington, VA 22230

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