Cultural Anthropology Program - Doctoral Dissertation Research Improvement Grants (CA-DDRIG)

PROGRAM SOLICITATION

NSF 15-556

REPLACES DOCUMENT(S): NSF 14-560



National Science Foundation

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

Full Proposal Target Date(s):

August 17, 2015

August 15, Annually Thereafter

January 15, 2016

January 15, Annually Thereafter

IMPORTANT INFORMATION AND REVISION NOTES

This solicitation provides instructions for preparation of proposals submitted to the Cultural Anthropology Program (CA) for Doctoral Dissertation Research Improvement Grants (DDRIG). It replaces instructions previously included in the Social, Behavioral, and Economic Sciences (SBE) Doctoral Dissertation Research Improvement Grants (SBE-DDRIG) announcement (NSF 11-547) and the Cultural Anthropology Program Doctoral Dissertation Research Improvement Grants (CA-DDRIG) announcement (NSF 14-560).

This revision amends the requirement that all proposals be accompanied by a letter of affirmation from the PI that, barring unforeseen circumstances, the Co-PI will be ready to undertake research. The letter is replaced by a signed template, a model of which is included in this revision. In addition, the date of readiness is now stipulated to be 12 months from the time the proposal was submitted. The template also asks the PI to specify whether or not the proposal is a resubmission and if it is, to confirm that the revision adheres to the *Grant Proposal Guide* requirements that resubmitted proposals be substantially revised and that they address the specific concerns raised by previous reviewers.

This revision does not alter the restriction that a DDRIG proposal may only be re-submitted once, unless a waiver for a third submission has been granted by a Cultural Anthropology Program Officer.

This revision expands the explanation of NSF's mandate to fund basic rather than applied research.

This revision provides additional detail on Supplementary Documents, including the Data Management Plan and letters of access.

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:

Cultural Anthropology Program - Doctoral Dissertation Research Improvement Grants (CA-DDRIG)

Synopsis of Program:

The primary objective of the Cultural Anthropology Program is to support basic scientific research on the causes, consequences, and complexities of human social and cultural variability.

Anthropological research spans a wide gamut, and contemporary cultural anthropology is an arena in which diverse research traditions and methodologies are valid. Recognizing the breadth of the field's contributions to science, the Cultural Anthropology Program welcomes proposals for empirically grounded, theoretically engaged, and methodologically sophisticated research in all sub-fields of cultural anthropology. Because the National Science Foundation's mandate is to support basic research, the NSF Cultural Anthropology Program does not fund research that takes as its primary goal improved clinical practice or applied policy. A proposal that uses

anthropological methods to understand a social problem but does not propose to make a theory-testing and/or theory expanding contribution to anthropology will be returned without review.

Program research priorities include, but are not limited to, research that increases our understanding of:

- Socio-cultural drivers of critical anthropogenic processes such as deforestation, desertification, land cover change, urbanization, and poverty
- Resilience and robustness of socio-cultural systems
- Conflict, cooperation, and altruism
- · Economy, culture, migration, and globalization
- · Variability and change in kinship and family norms and practices
- · Cultural and social drivers of health outcomes and disease transmission
- · Social regulation, governmentality, and violence
- · Origins of complexity in socio-cultural systems
- Language and culture: orality and literacy, sociolinguistics, and cognition
- Human variation through empirically grounded ethnographic descriptions
- Mathematical and computational models of sociocultural systems such as social network analysis, agentbased models, multi-level models, and modes that integrate agent-based simulations and geographic information systems (GIS)

As part of its effort to encourage and support projects that explicitly integrate education and basic research, CA provides support to enhance and improve the conduct of doctoral dissertation projects designed and carried out by doctoral students enrolled in U.S. universities who are conducting scientific research that enhances basic scientific knowledge.

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.

- Deborah Winslow-Program Director, 995.43 S, telephone: (703) 292-7315, email: dwinslow@nsf.gov
- Jeffrey Mantz-Program Director, 907.11 N, telephone: (703) 292-7783, email: jmantz@nsf.gov
- LiAnn Barden-Program Specialist, 995 N, telephone: (703) 292-4965, email: lbarden@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: 40 to 50

During a fiscal year, Cultural Anthropology expects to recommend (either on its own or jointly with one or more other NSF programs) a total of 40-50 doctoral dissertation research improvement (DDRIG) awards.

Anticipated Funding Amount: \$800,000

Anticipated Funding Amount is \$800,000 pending availability of funds. Project budgets should be developed at scales appropriate for the work to be conducted. The total direct costs for CA DDRIG awards may not exceed \$20,000; applicable indirect costs are in addition to (that is, on top of) that amount.

The proposer may concurrently submit a doctoral dissertation proposal to other funding organizations. Please indicate this in the "Current and Pending Support" section of the NSF proposal, so that NSF may coordinate funding with the other organizations. The "Current and Pending Support" section of the NSF proposal should also list the proposal itself. The proposer may submit a DDRIG proposal to only one NSF Program although they may request that the proposal be co-reviewed with one or more other NSF Programs; actual co-review will be at the discretion of the relevant Program Officers.

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 through regular organizational channels by the dissertation advisor(s) on behalf of the graduate student. The advisor is the Principal Investigator (PI); the student is the Co-Principal Investigator (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.

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 limitations on the number of DDRIGs that may be submitted by an organization on behalf of a single faculty member during a specific competition or over the course of her/his career. But an organization may submit

only two proposals (an original submission and if necessary a resubmission) for a particular student over his or her career, barring special dispensation from the Cultural Anthropology Program for a second resubmission. Such dispensations are rare; they are exclusively at the discretion of the CA Program Officer(s).

A student and her/his advisor therefore should carefully consider at what point during the student's graduate program the student is ready to submit a DDRIG proposal keeping in mind that proposal processing normally takes approximately six months.

This limitation was implemented starting with DDRIG proposals submitted for the August 15, 2014 target date. Proposals to support a student's dissertation research prior to that date do not count against this limitation.

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.isp?ods key=papp.
 - 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:

Not Applicable

C. Due Dates

Full Proposal Target Date(s):

August 17, 2015

August 15, Annually Thereafter

January 15, 2016

January 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 Cultural Anthropology Program awards Doctoral Dissertation Research Improvement Grants (DDRIGs) in all areas of cultural anthropological science supported by the Program. The primary objective of the Cultural Anthropology Program is to support basic scientific research on the causes, consequences, and complexities of human social and cultural variability. DDRIGs support the development of the next generation of cultural anthropologists to pursue those questions.

Anthropological research spans a wide gamut, and contemporary cultural anthropology is an arena in which diverse research traditions and methodologies are valid. Recognizing the breadth of the field's contributions to science, the Cultural Anthropology Program welcomes proposals for empirically grounded, theoretically engaged, and methodologically sophisticated research in all sub-fields of cultural anthropology. Because the National Science Foundation's mandate is to support basic research, the NSF Cultural Anthropology Program does not fund research that takes as its primary goal improved clinical practice or applied policy. Program research priorities include, but are not limited to, research that increases our understanding of:

- Socio-cultural drivers of critical anthropogenic processes such as deforestation, desertification, land cover change, urbanization, and poverty
- · Resilience and robustness of socio-cultural systems
- Conflict, cooperation, and altruism
- Economy, culture, migration, and globalization
- · Variability and change in kinship and family norms and practices
- Cultural and social drivers of health outcomes and disease transmission
- · Social regulation, governmentality, and violence
- Origins of complexity in socio-cultural systems
- Language and culture: orality and literacy, sociolinguistics, and cognition
- · Human variation through empirically grounded ethnographic descriptions
- Mathematical and computational models of sociocultural systems such as social network analysis, agent-based models, multi-level models, and modes that integrate agent-based simulations and geographic information systems (GIS)

This solicitation addresses the preparation and evaluation of proposals for Doctoral Dissertation Research Improvement Grants (DDRIG) to the Cultural Anthropology (CA) Program. It replaces instructions in the Social, Behavioral, and Economic Sciences (SBE) Doctoral Dissertation Research Improvement Grants (SBE-DDRIG) solicitation (NSF 11-547) as well as the CA DDRIG solicitation (NSF 14-560).

II. PROGRAM DESCRIPTION

CA Doctoral Dissertation Research Improvement Grants provide funds for items not usually available from the student's U.S. academic institution. The awards are not intended to provide the full costs of a student's doctoral dissertation research. Funds may be used for valid research expenses. The funds may not be used for post-field research writing, analysis, and thesis production costs. Funds may not be used for stipends, tuition, textbooks, journals, child-care, and allowances for dependents. Further details concerning allowable as well as non-allowable expenses can be found in the Budgetary Information section of this solicitation.

While the Foundation provides support for doctoral dissertation research, the student (Co-PI) is solely responsible for the conduct of such research and preparation of results for publication. The Foundation, therefore, does not assume responsibility for such findings and their interpretation. This program does not support research with disease-related goals, including research on the etiology, diagnosis, or treatment of physical or mental disease, abnormality, or malfunction of human beings, animals or plants.

III. AWARD INFORMATION

Estimated Number of Awards: 40 to 50

During a fiscal year, Cultural Anthropology expects to recommend (either on its own or jointly with one or more other NSF programs) a total of 40-50 doctoral dissertation research improvement (DDRIG) awards.

Anticipated Funding Amount: \$800,000

Anticipated Funding Amount is \$800,000 pending availability of funds. Project budgets should be developed at scales appropriate for the work to be conducted. The total direct costs for CA DDRIG awards may not exceed \$20,000; applicable indirect costs are in addition to (that is, on top of) that amount.

The proposer may concurrently submit a doctoral dissertation proposal to other funding organizations. Please indicate this in the "Current and Pending Support" section of the NSF proposal, so that NSF may coordinate funding with the other organizations. The proposer may submit a DDRIG proposal to only one NSF Program although they may request that the proposal be co-reviewed with another NSF Program; actual co-review will be at the discretion of the relevant Program Officers.

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 through regular organizational channels by the dissertation advisor(s) on behalf of the graduate student. The advisor is the Principal Investigator (PI); the student is the Co-Principal Investigator (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.

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 limitations on the number of DDRIGs that may be submitted by an organization on behalf of a single faculty member during a specific competition or over the course of her/his career. But an organization may submit only two proposals (an original submission and if necessary a resubmission) for a particular student over his or her career, barring special dispensation from the Cultural Anthropology Program for a second resubmission. Such dispensations are rare; they are exclusively at the discretion of the CA Program Officer(s).

A student and her/his advisor therefore should carefully consider at what point during the student's graduate program the student is ready to submit a DDRIG proposal keeping in mind that proposal processing normally takes approximately six months.

This limitation was implemented starting with DDRIG proposals submitted for the August 15, 2014 target date. Proposals to support a student's dissertation research prior to that date do not count against this limitation.

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 email 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.

See Chapter II.C.2 of the GPG 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 GPG instructions.

In addition to the guidelines in the GPG or NSF Grants.gov Application Guide, specific instructions for Cultural Anthropology (CA) Doctoral Dissertation Research Improvement Grant (DDRIG) proposals are:

1. Cover Page

- The Project Title should begin with "Doctoral Dissertation Research:" The title should be descriptive rather than clever. It should emphasize the generalizable science that the research will address.
- List the primary dissertation advisor as the "PI/PD" and the student as the "Co-PI/PD."
- For the NSF organizational unit to consider the proposal, select BCS-Cultural Anthropology. You may select additional
 programs if you would like those programs to consider co-review of your proposal with CA. (Note that a request for coreview should be made only when the Pls believe the proposed work makes a strong case for advancing theory and basic
 knowledge in multiple communities served by multiple programs and when the Project Description engages literature from
 those communities.)
- · Mark human subjects as pending, approved, or exempted.

2. Project Summary

 This section must include as separate sections an Overview, the Intellectual Merit, and the Broader Impacts of the proposed activity.

3. Project Description

- This section is limited to 10 single-spaced pages of text with one-inch margins, in one of the fonts approved by the Grant Proposal Guide, and no more than six lines per vertical inch of text. The Project Description must have page numbers; note that FastLane does not automatically paginate.
- If the proposal is a resubmission, the first paragraph of the Project Description must summarize how the proposal has responded to previous reviewer concerns.
- The Project Description should include:
 - a statement of the research problem and its scientific importance, specific aims, expectations, or hypotheses;
 - a review of the scholarly literatures relevant to the project and an explanation of how the project will move those literatures and related theory forward:
 - a discussion of any preliminary studies performed by the student, the results of those studies, and how they inform the project;
 - an account of whether the student has the relevant technical training, language competence, and other preparation necessary to make the project feasible;
 - a research design that includes a discussion of the research site(s) and source(s) of data, the methods by which
 data will be collected, and the reasons those methods are the most appropriate;
 - a developed data analysis plan (usually at least a page in length);
 - a research schedule or timeline.
- The Project Description must describe the project's potential contribution to advancing anthropological theory beyond the site and context of the project itself.
- The Project Description must contain, as a separate section within the narrative, a section labeled "Broader Impacts of the Proposed Work". This section should provide a discussion of the broader impacts of the proposed activities. You can decide where to include this section within the Project Description.
- The Research Schedule should indicate the date that funds are required.
- The "Results from Prior NSF Support" section is NOT required for DDRIG proposals.

4. References Cited

- · Only references cited should be included.
- · Any standard and consistent citation system is acceptable. There are no page limits for the References Cited section.

5. Biographical Sketches

- The Biographical Sketches must be submitted for both the PI and the Co-PI. Each may not exceed 2 pages.
- Please use the formatting described in Chapter II of the NSF Grant Proposal Guide.

6. Budget and Budget Justification

- Travel expenses may include food and lodging as well as transportation while the researcher is living away from the
 researcher's normal place of residence. All travel expenses should be requested under "Travel Domestic" or "Travel Foreign"
- All other expenses should be requested under "Other Direct Costs."
- The Budget Justification pages should be used to detail and explain the rationale for each item requested. Any software requested should be at academic pricing where available.
- Salaries or stipends for the graduate student or the advisor are not eligible for support. Therefore, after the PI and Co-PI
 are entered on the Cover Page, 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.

7. Current and Pending Support.

- · Current and Pending Support forms must be submitted for both the PI (advisor) and Co-PI (student).
- . Both forms must include the current proposal (the one you are now submitting).

8. Facilities, Equipment & Other Resources.

 You must submit this form. If not applicable, insert text or upload a document in this section of the proposal that states, "Not Applicable."

9. Supplementary Documentation

Up to two pages of technical illustrations, maps, or sample survey questions may be included as a Supplementary Document.

Each DDRIG must be accompanied by a letter from the PI using the template below. Letters deviating from this template will not be accepted.

Template to be used for PI letter

To: NSF Cultural Anthropology DDRIG Program

From:

(Printed name of the Principal Investigator)

I confirm that this proposal, which is entitled, "______ " is a (delete the one that does not apply)

First-time submission

Revised, re-submission.

By signing below, I affirm that I have read the proposal, that it is appropriate for support by the NSF Cultural Anthropology Program, and that, barring unforeseen circumstances; the student will be prepared to undertake the research within 12 months of the submission deadline or target date.

If this is a resubmission, I also affirm that the proposal has been substantially revised and that it addresses the particular concerns raised by the reviewers of the previous submission.

Signed:

Organization:

Date:

Letters of reference or evaluation are NOT allowed. The Cultural Anthropology Program does NOT require a letter from the department assessing the student's progress to degree.

A Data Management Plan (DMP) is required for all research proposals and proposals that do not include one will not be able to be submitted. The DMP should address the following questions:

- What kinds of data, software, and other materials will your research produce?
- How will you manage them (e.g., standards for metadata, format, organization, etc.)?
- How will you give other researchers access to your data, while preserving confidentiality, security, intellectual property, & other rights and requirements?
- How will you archive data and preserve access in the short and the long term?

Pls are encouraged to consult the American Anthropological Association's Statement on Professional Ethics, Sections 5, "Make Your Results Accessible," and 6, "Protect and Preserve Your Records" (http://ethics.americananthro.org/category/ethics-statement/.

If the research depends on access to a particular research site (such as a clinic, workplace, or archive), it is strongly recommended that a letter, preferably on letterhead, that promises such access be included with the proposal as a supplementary document. The letter should not evaluate the project (that is, it should not be a reference letter); it should simply affirm that access will be granted.

B. Budgetary Information

Cost Sharing:

Inclusion of voluntary committed cost sharing is prohibited.

Budget Preparation Instructions:

Proposers may request up to \$20,000 in direct costs and duration of up to 24 months. 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. Indirect costs are in addition to (that is, on top of) the maximum direct cost request of up to \$20,000. 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. Please allow 6 to 8 months after the target date for an award to be made.

DDRIG awards provide funding for research costs not normally covered by the student's university. Expenses that may be included in a DDRIG proposal budget include:

- 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.
- Costs for modest field equipment (e.g., laptops; photo, video, or audio equipment), and materials and supplies 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 should be based on appropriateness to
 the scientific need of the study and current market prices. Top-of-the-line equipment is generally not funded unless there is
 a specific and well-justified explanation as to why standard equipment will not suffice.
- Costs of providing informant incentives as needed to assure participation in the research or compensation for having participated. Please note that gifts are usually not allowed. For example:
 - NOT ALLOWABLE: donation of books to a needy school or gifts simply because it is cultural custom.
 - ALLOWABLE: purchase of books needed to perform a study that will take place at a school, incentives (including
 pre-paid gift cards) for participation in a study that would likely not be able to be completed without incentives (i.e.
 very long survey to fill out, a study that requires multiple follow-up sessions, medical testing, etc.), subject
 payments for survey respondents.
- · Costs for research assistance if essential to the execution of the study.
- Costs for other research services not otherwise available and essential for the research.
- · Costs for travel specific insurance (such as for medical evacuation and repatriation of remains), if appropriately justified.
- Costs for modest (i.e., student-level rather than State Department per diem rates) living expenses for the Co-PI during fieldwork in locations away from the university or normal place of residence.
- Costs of obtaining a visa required for the research.

Costs that cannot be reimbursed by DDRIG awards include the following:

- · A stipend or salary for the doctoral student or advisor.
- Costs for tuition, university fees, textbooks, journals, dissertation preparation, routine medical insurance, mortgage
 payments, personal clothing, toiletries, over-the-counter medicines, or other items not directly related to the conduct of
 dissertation research.
- Costs for the expenses of relatives or dependents, including childcare.
- · Costs for transcription services.
- · Costs for expensive cameras and computers unless justified in terms of the research goals.
- Insurance for equipment.
- "Gifts" or "tokens" for informants that are requested because it is a cultural norm to exchange gifts.

C. Due Dates

Full Proposal Target Date(s):

August 17, 2015

August 15, Annually Thereafter

January 15, 2016

January 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: 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 PAPPG Exhibit III-1.

A comprehensive description of the Foundation's merit review process is available on the NSF website at: http://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 Pls 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, Pls 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 decisionmaking 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

B. Review and Selection Process

Proposals submitted in response to this program solicitation will be reviewed by 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.

Pls 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:

- Deborah Winslow-Program Director, 995.43 S, telephone: (703) 292-7315, email: dwinslow@nsf.gov
- Jeffrey Mantz-Program Director, 907.11 N, telephone: (703) 292-7783, email: jmantz@nsf.gov
- LiAnn Barden-Program Specialist, 995 N, telephone: (703) 292-4965, email: lbarden@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 (FASED) provide funding for special assistance or equipment to enable persons with disabilities to work on NSF-supported projects. See the NSF Proposal & Award Policies & Procedures Guide Chapter II.E.6 for instructions regarding preparation of these types of proposals.

The National Science Foundation has Telephonic Device for the Deaf (TDD) and Federal Information Relay Service (FIRS) capabilities that enable individuals with hearing impairments to communicate with the Foundation about NSF programs, employment or general information. TDD may be accessed at (703) 292-5090 and (800) 281-8749, FIRS at (800) 877-8339.

The National Science Foundation Information Center may be reached at (703) 292-5111.

The National Science Foundation promotes and advances scientific progress in the United States by competitively awarding grants and cooperative agreements for research and education in the sciences, mathematics, and engineering.

To get the latest information about program deadlines, to download copies of NSF publications, and to access abstracts of

awards, visit the NSF Website at http://www.nsf.gov

• Location: 4201 Wilson Blvd. Arlington, VA 22230

• For General Information (703) 292-5111

(NSF Information Center):

• 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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