GEO Opportunities for Leadership in Diversity (GOLD)

An Ideas Lab Activity

PROGRAM SOLICITATION

NSF 16-516

National Science Foundation

Directorate for Geosciences

Preliminary Proposal Due Date(s) ***(required)*** (due by 5 p.m. submitter's local time):

February 01, 2016

Preliminary Proposal (Application to Participate) Deadline

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

June 02, 2016

Full Proposal (Invited Only) Submission Deadline

IMPORTANT INFORMATION AND REVISION NOTES

Any proposal submitted in response to this solicitation should be submitted in accordance with the revised *NSF Proposal & Award Policies & Procedures Guide* (PAPPG) (NSF 16-1), which is effective for proposals submitted, or due, on or after January 25, 2016. Please be advised that proposers who opt to submit prior to January 25, 2016, must also follow the guidelines contained in NSF 16-1.

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

GEO Opportunities for Leadership in Diversity (GOLD)
An Ideas Lab Activity

Synopsis of Program:

The geosciences continue to lag other science, technology, engineering, and mathematics (STEM) disciplines in the engagement, recruitment and retention of traditionally underrepresented and underserved minorities, requiring more focused and strategic efforts to address this problem. Diversity is a vital priority for the geosciences community because it promotes innovation, strengthens the community's ability to tackle complex geoscience research problems, and engenders widespread public Earth and environmental science literacy.

Prior investments made by the National Science Foundation (NSF) related to broadening participation in STEM have identified many effective strategies and model programs for engaging, recruiting, and retaining underrepresented students in the geosciences. These investments also have documented clearly the importance of committed, knowledgeable, and persistent leadership for making local progress in broadening participation in STEM and the geosciences. Achieving diversity at larger and systemic scales requires a network of diversity "champions" who can catalyze widespread adoption of these evidence-based best practices and resources. Although many members of the geoscience community are committed to the ideals of broadening participation, the skills and competencies that empower people who wish to have an impact, and make them effective as leaders in that capacity for sustained periods of time, must be cultivated through professional development. But, it is not sufficient to educate prospective leaders on the issues and resources related to broadening participation in STEM. Research on leadership development has documented the complex interplay of personal traits, motivating factors, and environmental contexts that must also be considered in making such professional development efforts successful.

This solicitation describes an Ideas Lab on “GEO Opportunities for Leadership in Diversity.” Ideas Labs are intensive workshops focused on finding innovative solutions to grand challenge problems. The ultimate aim of this Ideas Lab, organized by the NSF Directorate for Geosciences (GEO), is to facilitate the design, pilot implementation, and evaluation of innovative professional development curricula that can unleash the potential of geoscientists with interests in broadening participation to become impactful leaders within the community. The expectation is that mixing geoscientists with experts in broadening participation research, behavioral change, social psychology, institutional change management, leadership development research, and pedagogies for professional development will not only engender fresh thinking and innovative approaches for preparing and empowering geoscientists as change

agents for increasing diversity, but will also produce experiments that contribute to the research base regarding leader and leadership development. U.S. scientists and educators may submit preliminary proposals only via FastLane as an application to participate in the Ideas Lab, through which a set of multidisciplinary ideas will be developed. The Ideas Lab will be held March 20-24, 2016 in the Washington, DC metro region. Promising approaches developed through the Ideas Lab process will be submitted as full proposals from invited participants.

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.

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

- 47.050 --- Geosciences

Award Information

Anticipated Type of Award: Standard Grant

Estimated Number of Awards:

3 to 5 -- NSF anticipates inviting up to 30 individuals submitting Preliminary Proposals to participate in the GOLD Ideas Lab. In FY 2016, NSF anticipates funding between 3 and 5 full proposals that are developed through the Ideas Lab process, pending availability of funding.

Anticipated Funding Amount:

$2,000,000 -- NSF anticipates a total budget of up to $2,000,000 will be available in FY 2016 to support full proposals developed through the GOLD Ideas Lab process, pending availability of funding.

Eligibility Information

Who May Submit Proposals:

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

Who May Serve as PI:

There are no restrictions or limits.

Limit on Number of Proposals per Organization:

There are no restrictions or limits.

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

An individual may submit only one Preliminary Proposal (application to participate in the GOLD Ideas Lab). If invited to submit a full proposal following the Ideas Lab, a PI may submit only one full proposal to NSF.

Proposal Preparation and Submission Instructions

A. Proposal Preparation Instructions

- **Letters of Intent:** Not required
- **Preliminary Proposals:** Submission of Preliminary Proposals is required. Please see the full text of this solicitation for further information.
- **Full Proposals:**
    - Full Proposals submitted via FastLane: *NSF Proposal and Award Policies and Procedures Guide* (PAPPG) guidelines apply. The complete text of the PAPPG is available electronically on the NSF website at: https://www.nsf.gov/publications/pub_summ.jsp?ods_key=pappg.

- Full Proposals submitted via Research.gov: *NSF Proposal and Award Policies and Procedures Guide* (PAPPG) guidelines apply. The complete text of the PAPPG is available electronically on the NSF website at: https://www.nsf.gov/publications/pub_summ.jsp?ods_key=pappg.
- Full Proposals submitted via Grants.gov: *NSF Grants.gov Application Guide: A Guide for the Preparation and Submission of NSF Applications via Grants.gov* guidelines apply (Note: The *NSF Grants.gov Application Guide* is available on the Grants.gov website and on the NSF website at: https://www.nsf.gov/publications/pub_summ.jsp?ods_key=grantsgovguide).

B. Budgetary Information

- **Cost Sharing Requirements:**

  Inclusion of voluntary committed cost sharing is prohibited.

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

  Not Applicable

- **Other Budgetary Limitations:**

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

C. Due Dates

- **Preliminary Proposal Due Date(s)** ***(required)*** (due by 5 p.m. submitter's local time):

  February 01, 2016

  Preliminary Proposal (Application to Participate) Deadline

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

  June 02, 2016

  Full Proposal (Invited Only) Submission Deadline

Proposal Review Information Criteria

Merit Review Criteria:

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

Award Administration Information

Award Conditions:

Standard NSF award conditions apply.

Reporting Requirements:

Standard NSF reporting requirements apply.

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IX. **Other Information**

I. INTRODUCTION

Diversity is a critical driver of excellence in research and innovation in the science, technology, engineering and mathematics (STEM) disciplines in the 21st century (Page, 2007; NRC, 2011; PCAST, 2012). Full representation of all of America's STEM talent is a competitive advantage to enrich this diversity of thoughts and approaches, and thus advance innovations in the science and engineering enterprise. Broadening participation of those who have been traditionally underserved and/or underrepresented in all STEM fields, including underrepresented ethnic/racial groups, women and girls, and persons with disabilities is thus vital to the well-being of the Nation and has been a major investment priority for the National Science Foundation (NSF).

The new NSF INCLUDES (Inclusion across the Nation of Communities of Learners that have been Underrepresented for Diversity in Engineering and Science) initiative recently proposed in the President's FY 2016 budget serves as the latest example of NSF's commitment to making progress in this important area. NSF INCLUDES seeks to bring renewed focus to solving broadening participation challenges through a set of “bold visions for inclusion” at the national level that collectively increase the preparation, participation, advancement, and success of underrepresented communities in STEM. The long-term goal of NSF INCLUDES is to fund new research, models, and partnerships that lead to demonstrable progress in meeting the challenge of broadening participation in science and engineering. With special attention to the cross-cutting areas of inclusion, relevance, scalability, and sustainability, NSF expects to support a new set of strategic investments to expand the culture of diversity in science and engineering across all sectors.

The Directorate for Geosciences (GEO) has identified increasing the participation of underrepresented minorities within geoscience education and career pathways as a long-time strategic priority (AC-GEO, 2012). A rich and diverse set of perspectives strengthens the ability of the scientific community to tackle the complex nature of geoscience research and confront the grand challenges facing our country and the world. Just as important is the need to foster public Earth and environmental science literacy, particularly among communities and people that have not traditionally had access to, or engaged in, high quality education related to these topics. Our nation is strengthened by having all citizens understand the scientific underpinnings of important geoscience-based topics that are increasingly relevant to policy decisions, national prosperity and security, and personal lives, including issues such as global climate change, energy and fresh water resources, sustainability, and natural hazards.

Investments made by NSF and GEO to make progress on these diversity goals have produced documentable increases in the engagement, recruitment, and retention of a diverse population of students (Wilson, 2014) and have fostered improvements in public Earth system science literacy and career awareness among a variety of minority communities, although more progress is still needed (Velasco and Velasco, 2010; O'Connell and Holmes, 2011). OEDG investments have also developed a suite of new insights, successful resources, and model strategies for broadening participation that can be used to support students at different stages in the pipeline (e.g., Riggs and Alexander, 2007; Apple et al., 2014; Callahan et al., 2015; Blake et al., 2015; Dalbotten et al., 2014).

Important insights about the barriers and obstacles that are common among all STEM disciplines, as well as some of the unique considerations that impact recruitment and retention of minorities in the geosciences specifically have been realized through these programs (Levine et al., 2007; Pyrtle and Williamson Whitney, 2008). As is true for all STEM disciplines, programs that address multiple factors, including negative stereotypes, cultural barriers, academic isolation, perceptions of ability or self-efficacy, parental expectations, lack of role models, and financial limitations, as well as obstacles that arise for first generation college student who may have had inadequate preparation in essential skills (e.g., math), are among the most successful. But, these efforts have also demonstrated that it is essential to incorporate strategies to address some issues specific to the geosciences. These include: general lack of awareness of geoscience careers at critical junctures in the education pipeline; limited availability and often weak quality of geoscience education at secondary school levels; lack of geoscience expertise and degree programs at community colleges and many Minority-Serving Institutions (MSIs); and, given the important role of field-based experiences for the geosciences, important cultural differences regarding a person's relationship to the environment.

Given the body of work now available on the science of broadening participation in STEM and the availability of a solid evidence base demonstrating effective strategies for fostering diversity within the geosciences, the question arises: how can we scale up these efforts and accelerate the pace of progress? Program-wide evaluation of prior GEO diversity-focused investments by the American Institutes for Research (AIR) has documented the essential and common ingredients for making efforts to broaden participation of minorities in the geosciences more successful (Huntoon et al., 2010). Key among these is the role of leadership and commitment by geoscientists and geoscience educators, who have the passion, skill, and dedication to help students to overcome some of the barriers they face and to help them to succeed. The critical role of leadership is further stressed in a recent analysis of how to improve the pipeline for minorities in STEM disciplines, which identified "achieving, rewarding, and maximizing faculty involvement" as one of four key factors that would allow such efforts to reach scale (Allen-Ramdial and Campbell, 2014).

The GEO directorate seeks to cultivate a new generation of leaders within the geosciences research and education communities who have the passion, the knowledge, the skills, and the tools to catalyze high-impact efforts to broaden participation of traditionally underrepresented minorities in the geosciences education pipeline and workforce. These "champions for diversity" will be expected to serve as hubs of activity within a national network for broadening participation in the geosciences, whose collective efforts over time will transform the demographics of the geosciences community. With its focus on developing a network of engaged and skillful leaders within the geosciences community, the activities being supported through this solicitation are thus well-aligned with the objectives of the Network Pilot component of the proposed NSF INCLUDES initiative.

Although many members of the geoscience community are committed to the ideals of broadening participation, the skills and competencies that empower people who wish to have an impact, and make them effective in that role for sustained periods of time, must be acquired and a team approach is often most effective. Therefore, professional development for faculty and staff who are committed to broadening participation is essential. But, what would such professional development need to look like, if it is to be transformative and scalable? This question is the focus of the new GEO Opportunities for Leadership in Diversity (GOLD) funding opportunity.

Development of effective leaders is an important issue of concern for all types of organizations and communities. In the past few decades, the topic has emerged as an active area of scientific research seeking to develop the theories and evidence base for effective practices (e.g., see review in Day et al., 2014). Among the most dominant models being advanced today are the theories of "transformational leadership," "charismatic leadership," "servant and spiritual leadership," and "authentic leadership" (Aviolo and Gardner, 2005, and references therein). "Leadership ability" embodies a complex set of intra- and inter-personal traits, skills, and behaviors that have been shaped by intrinsic and environmental factors and experiences. Leadership skills are acquired and enhanced over time, so the dynamic processes through which these skills are cultivated matter (e.g., Russell and Kuhnert, 1992; Day, 2011). As noted by Day et al. (2014), "because of the conceptual and measurement challenges inherent in this type of research, evaluating leadership development is often a complex undertaking." Some progress has been made in recent years in identifying strategies for more rigorously evaluating the outcomes of leadership development, through social network analysis (Hoppe and Reinelt, 2010), hierarchical linear modeling (Gentry and Martineau,

2010), or other statistical approaches for documenting return on leadership development investment (Avolio et al., 2010). As an emergent field of inquiry, leadership development remains a fertile area for additional research.

II. PROGRAM DESCRIPTION

GEO is using the Ideas Lab mechanism described in Chapter II Section D.3 of the NSF Grant Proposal Guide (https://www.nsf.gov/pubs/policydocs/pappguide/nsf16001/nsf16_1.pdf) to achieve its goals of preparing new leaders within the geosciences community who can catalyze progress in broadening participation within their local spheres of influence and, ideally, foster transformative impact at community-wide scales through collective action and scale up of their individual efforts. An Ideas Lab is a mechanism to provide NSF funding that is designed to support the development and implementation of creative and innovative project ideas with potential to transform research paradigms and/or solve intractable problems. This mechanism was developed collaboratively within NSF, modeled on the "sandpit" workshops that are a key component of the United Kingdom Research Council's "IDEAs Factory" program.

How Does an Ideas Lab Work?

An Ideas Lab is an invitation-only workshop on a focused problem in which a group of ~30 participants develop collaborative research ideas and proposals through creative brainstorming, constructive dialogue, and feedback. Collaboration is an integral aspect of the activity. Ideas Labs are intensive, interactive and free-thinking environments, where a diverse group from a range of disciplines and backgrounds gets together for five days – away from their everyday worlds – to immerse themselves in collaborative thinking processes in order to construct innovative approaches. The nature of the Ideas Lab requires a high degree of trust between participants in order to make the required breakthroughs in thinking. This trust extends to allowing the free and frank exchange of ideas, some being in the very early stages of development. The aim of the Ideas Lab is not to discuss ideas that are already well-developed but not yet published. Rather, the goal is to bring individuals from different disciplines together to interact and engage in free thinking on first principles, to learn from one another and create an integrated vision for future projects. It is expected that the sharing of these ideas would be encouraged within the Ideas Lab but their confidentiality would be respected outside the Ideas Lab.

The GOLD Ideas Lab

The ultimate goal of the GEO Opportunities for Leadership in Diversity (GOLD) program is to prepare a new generation of leaders who are well-prepared to significantly motivate and advance efforts to increase diversity in the geosciences education pathways and workforce. The key objective of the GOLD Ideas Lab is to bring together researchers from diverse scientific backgrounds and perspectives in order to engender fresh thinking and new approaches for developing leadership within the context of broadening participation in the geosciences and addressing questions such as:

- How can prospective leaders for diversity be identified and recruited?
- How can the necessary qualities be developed, nurtured and empowered within a diverse community of potential leaders?
- What curriculum is needed for a professional development program that can prepare a network of successful leaders?
- What are the requirements for taking model professional development programs to scale?

A major outcome of the GOLD Ideas Lab will be the design and development of pilot professional development programs that can be field tested with groups of interested geoscientists, evaluated for their impact on achieving program goals, and examined for their potential use as models that could be scaled up. It is expected that the individuals who participate in these pilot programs will collectively define a new cohort of "champions for diversity" who will continue to implement and promote new efforts to broaden participation efforts within the geosciences community.

Implementation of the GOLD Ideas Lab

Implementation of the Ideas Lab mechanism involves a four-stage process: (1) selection of panelists (Director and Mentors); (2) selection of participants; (3) the Ideas Lab; and, (4) review and recommendation of full proposals invited at the end of the Ideas Lab.

Selection of Panelists

The GOLD Ideas Lab will be led by a Director whose role will be to assist in defining the topics and help facilitate discussions at the event. The Director will be joined by a small number of Mentors. The Director and Mentors will be selected by NSF based on their intellectual standing, their impartiality and objectivity, and their broad understanding of, and enthusiasm for, the subject area. The Director and Mentors will take full part in the Ideas Lab, but will not be eligible to receive research funding under this collaborative activity. They will therefore act as impartial peer reviewers in the process, providing a function analogous to that of an NSF review panel.

Selection of Participants

Having the right mix of participants influences the success or failure of such an activity. Applications are encouraged from individuals representing diverse research areas across a range of disciplines that are relevant to the Ideas Lab theme. Given the many dimensions of the issue, the GOLD program invites applications to participate in the GOLD Ideas Lab from experts in the geosciences, broadening participation research, social psychology, institutional change in academia, professional development, and facilitation, among others, to collaboratively design model curricula for developing a new generation of champions for diversity within the geosciences community. However, the specific disciplines that should be represented at this Ideas Lab are not being specified; rather potential participants are asked to indicate why they think their background is relevant and how their expertise can address the challenges relating to broadening participation leadership.

The ability to develop and pursue a new approach will also be crucial. Expertise is required from a very broad range of disciplines, and applicants should not feel limited by conventional perceptions: the Ideas Lab approach is about bringing people together who would not normally interact. People who are experts in their own research areas but have not yet applied it to this challenge are encouraged to apply. This is an opportunity to share ideas and develop future collaborations. All participants should be willing to engage in frank disclosure and assessment of ideas in a collegial and professional fashion. Participants are welcomed at any stage of their research career; however they must be eligible to apply for funding from the NSF as defined in the NSF Grant Proposal Guide (PAPPG).

Applications to participate in the Ideas Lab are submitted as preliminary proposals to NSF (see below). The Director and selection panel will recommend a list of potential participants and NSF Program Staff will select the final list of participants from the submitted preliminary proposals. Participants will be selected on the basis of the interests, expertise, and other characteristics described in their submitted preliminary proposals. Participants must be able to

commit to the full five days of the Ideas Lab. Given the objectives and design of the Ideas Lab, preference will be given to selecting participants who together can bring the range of expertise and perspectives that will encourage innovative thinking in a collaborative process. Invited participants will be notified approximately 6 weeks prior to the Ideas Lab that they are being invited.

Individuals interested in participating in the Ideas Lab should respond to this solicitation by submitting a preliminary proposal application through the NSF FastLane system (https://www.fastlane.nsf.gov). Participation in the Ideas Lab is by invitation only from the pool of applicants who submitted a preliminary proposal. Submission of the preliminary proposal will be considered an indication of availability to attend and participate through the full course of the five-day residential workshop.

The Ideas Lab Process

The GOLD Ideas Lab is expected to take place in the Washington, DC metro area between March 20 and March 24, 2016. Further details regarding this venue will be made available on the GOLD program solicitation web site as soon as the details have been finalized. The environment will encourage free and open-minded thinking; vital for the purposes of this event. Additional information about the venue and meeting logistics will be provided to the selected participants. It should be noted that all travel to the Ideas Lab, accommodations, refreshments, breakfast, lunch and dinner costs will be covered by NSF. However, all incidental costs incurred while at the event will be borne by the participant.

The Ideas Lab will run over five days starting mid-morning on Day One and finishing mid-afternoon on Day Five. At the outset, the participants will work collaboratively to identify and define the scope of the challenges relating to broadening participation leadership. As the Ideas Lab progresses, participants will dynamically design and hone novel ideas about how the identified challenges may be addressed, and then use these ideas and approaches to develop and ultimately pilot new projects, which should contain genuinely innovative and potentially catalytic approaches. The Ideas Lab will include inputs from a variety of sources and will aim to develop collaborative research projects.

The process used during the Ideas Lab can be broken down into several stages:

- Defining the scope of the challenges
- Evolving common languages and terminologies amongst people from a diverse range of backgrounds and disciplines
- Sharing perspectives and understanding of the challenges, as well as the diverse expertise brought by the participants to the Ideas Lab
- Taking part in break-out sessions focused on the challenges, using creative thinking techniques
- Capturing the outputs in the form of highly innovative projects
- Using "real-time" peer review to develop projects at the Ideas Lab

An Ideas Lab is an intensive event. For the well-being of participants, the venue will offer opportunities for relaxation, and the timetable will include networking and other activities as a break from the detailed technical discussions.

Full Proposals

A subset of promising project ideas developed by the teams during the Ideas Lab process will be identified through consultation with the Director and Mentors. NSF anticipates that the GOLD Ideas Lab will result in several innovative concepts for professional development models that have sufficient potential merit to warrant consideration of funding by NSF. Participants in the Ideas Lab who championed these concepts will be invited within 7 to 14 days immediately following the Ideas Lab to submit full proposals that further develop the ideas conceived during the Ideas Lab. Full proposals must be submitted to NSF by the deadline indicated above. Full proposals can only be submitted by Principal Investigators who both participated in the Ideas Lab and were invited immediately following the Ideas Lab to submit a full proposal. Full proposals will be reviewed internally by the Ideas Lab Mentor panel.

Full proposals derived from the GOLD Ideas Lab must include ideas that can result in transformative rather than incremental progress in our ability to broaden participation in the geosciences. It is expected that these full proposals will be generated by multidisciplinary teams that bring together the expertise that can both benefit from and contribute to research on leader and leadership development in STEM.

Full proposals invited from the GOLD Ideas Lab are expected to have the following attributes:

- PI team must have at least one geoscientist and one social scientist (e.g., psychologist, learning scientist, expert on leadership development theory); documented expertise related to broadening participation is also required
- Proposal must include a detailed implementation plan for field-testing the pilot curriculum with a minimum of 30 participants recruited from the geoscience education and research community
- Selected participants for the field test must represent a minimum of 10 geoscience organizations (e.g., academic institution, research facility, scientific society)
- Proposal should identify how participants in the field tests will be recruited and selected
- An evaluation plan that provides formative and summative evaluation during the field tests must be included, with an external evaluator identified
- A theory of change for participants in field tests should be articulated
- Metrics for success must be identified – the nominal expectation is that durable increases in the potential of participants in the field tests to serve in a leadership role related to broadening participation efforts will be documented as an outcome of the professional development activities; stronger proposals will set a higher bar and try to document that this potential is actually realized through actions taken post-professional development by the participant
- The potential of the professional development model for replication and scalability should be described

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III. AWARD INFORMATION

Estimated program budget, number of awards and average award size/duration are subject to the availability of funds. In FY 2016, NSF anticipates funding between 3 and 5 full proposals that are developed through the Ideas Lab process, pending availability of funding. The maximum total amount of funding for each project cannot exceed $400,000. Project duration can be up to three years.

IV. ELIGIBILITY INFORMATION

Who May Submit Proposals:

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

solicitation.

Who May Serve as PI:

There are no restrictions or limits.

Limit on Number of Proposals per Organization:

There are no restrictions or limits.

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

An individual may submit only one Preliminary Proposal (application to participate in the GOLD Ideas Lab). If invited to submit a full proposal following the Ideas Lab, a PI may submit only one full proposal to NSF.

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

Preliminary Proposals *(required)*: Preliminary proposals are required and must be submitted via the NSF FastLane system, even if full proposals will be submitted via Grants.gov.

Submission of Preliminary Proposals is required for participation in the Ideas Lab. Please note, the Preliminary Proposal must come from one individual and cannot include Co-PIs or collaborators. Participants in the Idea Lab will be selected on the basis of information submitted in the preliminary proposal. The applications are limited to two pages of "Project Description," which should be submitted as a preliminary proposal in the NSF FastLane system ONLY, not through Grants.gov. Standard NSF formatting guidelines apply. See the NSF Grant Proposal Guide (PAPPG) for guidance.

The Project Description section of the preliminary proposal applications should conform to the following guidelines:

Page One:

- Provide a brief summary of your professional background (no more than one half page). Please note that if you are selected as a participant, information provided in answer to this question will be made available to the other participants to facilitate networking at the Ideas Lab workshop.
- What expertise do you bring that is relevant to realizing the goal of developing leadership within the geosciences community for increasing diversity? (no more than half a page)

Page Two:

Please spend some time considering your answers to the following questions. Your responses (no more than 150 words each) should demonstrate that you have suitable skills and aptitude to participate in the Ideas Lab (unrelated to your research track record).

- What is your personal experience with working in teams? What strengths do you bring to a team effort?
- How would you describe your ability to explain your research to non-experts?
- The Ideas Lab environment is especially suited to individuals who are willing to step outside their particular area of interest or expertise, who are positively driven, who enjoy creative activity, who can think innovatively and who can settle in easily in the company of strangers. Please describe an experience you have had in a comparable environment.
- What would you personally and professionally gain from participating in this Ideas Lab?

Applicants must include a Biographical Sketch and a Current and Pending Support document (prepared in accordance with standard NSF formatting guidelines). All other elements of a "full proposal" are waived (Project Summary, References Cited, Budget, Budget Justification, Facilities, Equipment and Other Resources, Data Management Plan).

No appendices or supplementary documents may be submitted.

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

- Full proposals submitted via FastLane: Proposals submitted in response to this program solicitation should be prepared and submitted in accordance with the general guidelines contained in the *NSF Proposal & Award Policies & Procedures Guide* (PAPPG). The complete text of the PAPPG is available electronically on the NSF website at: https://www.nsf.gov/publications/pub_summ.jsp?ods_key=pappg. Paper copies of the PAPPG may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-8134 or by e-mail from nsfpubs@nsf.gov. Proposers are reminded to identify this program solicitation number in the program solicitation block on the NSF Cover Sheet For Proposal to the National Science Foundation. Compliance with this requirement is critical to determining the relevant proposal processing guidelines. Failure to submit this information may delay processing.
- Full Proposals submitted via Research.gov: Proposals submitted in response to this program solicitation should be prepared and submitted in accordance with the general guidelines contained in the *NSF Proposal and Award Policies and Procedures Guide* (PAPPG). The complete text of the PAPPG is available electronically on the NSF website at: https://www.nsf.gov/publications/pub_summ.jsp?ods_key=pappg. Paper copies of the PAPPG may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-8134 or by e-mail from nsfpubs@nsf.gov. The Prepare New Proposal setup will prompt you for the program solicitation number.
- 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) 292-8134 or by e-mail from nsfpubs@nsf.gov.

In determining which method to utilize in the electronic preparation and submission of the proposal, please note the following:

Collaborative Proposals. All collaborative proposals submitted as separate submissions from multiple organizations must be submitted via FastLane or Research.gov. PAPPG Chapter II.D.3 provides additional information on collaborative proposals.

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.

B. Budgetary Information

Cost Sharing:

Inclusion of voluntary committed cost sharing is prohibited.

Other Budgetary Limitations:

Full proposals invited through the Ideas Lab process may only request up to $400,000 in total funding.

C. Due Dates

- **Preliminary Proposal Due Date(s)** ***(required)*** (due by 5 p.m. submitter's local time):

  February 01, 2016

  Preliminary Proposal (Application to Participate) Deadline

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

  June 02, 2016

  Full Proposal (Invited Only) Submission Deadline

Persons interested in applying to participate in the GOLD Ideas Lab (being held March 20-24, 2016) are required to submit a Preliminary Proposal through the NSF FastLane system, following the guidelines given in this solicitation (see Proposal Preparation). Individuals who will be invited to participate in the Ideas Lab will be notified of their status by February 9, 2016.

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

For Proposals Submitted Via FastLane or Research.gov:

To prepare and submit a proposal via FastLane, see detailed technical instructions available at: https://www.fastlane.nsf.gov/a1/newstan.htm. To prepare and submit a proposal via Research.gov, see detailed technical instructions available at: https://www.research.gov/research-portal/appmanager/base/desktop?_nfpb=true&_pageLabel=research_node_display&_nodePath=/researchGov/Service/Desktop/ProposalPreparationandSubmission.html. For FastLane or Research.gov user support, call the FastLane and Research.gov Help Desk at 1-800-673-6188 or e-mail fastlane@nsf.gov or rgov@nsf.gov. The FastLane and Research.gov Help Desk answers general technical questions related to the use of the FastLane and Research.gov systems. Specific questions related to this program solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this funding opportunity.

For Proposals Submitted Via Grants.gov:

Before using Grants.gov for the first time, each organization must register to create an institutional profile. Once registered, the applicant's organization can then apply for any federal grant on the Grants.gov website. Comprehensive information about using Grants.gov is available on the Grants.gov Applicant Resources webpage: https://www.grants.gov/web/grants/applicants.html. In addition, the NSF Grants.gov Application Guide (see link in Section V.A) provides instructions regarding the technical preparation of proposals via Grants.gov. For Grants.gov user support, contact the Grants.gov Contact Center at 1-800-518-4726 or by email: support@grants.gov. The Grants.gov Contact Center answers general technical questions related to the use of Grants.gov. Specific questions related to this program solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this solicitation.

Submitting the Proposal: Once all documents have been completed, the Authorized Organizational Representative (AOR) must submit the application to Grants.gov and verify the desired funding opportunity and agency to which the application is submitted. The AOR must then sign and submit the application to Grants.gov. The completed application will be transferred to the NSF FastLane system for further processing.

Proposers that submitted via FastLane or Research.gov may use Research.gov to verify the status of their submission to NSF. For proposers that submitted via Grants.gov, until an application has been received and validated by NSF, the Authorized Organizational Representative may check the status of an application on Grants.gov. After proposers have received an e-mail notification from NSF, Research.gov should be used to check the status of an application.

VI. NSF PROPOSAL PROCESSING AND REVIEW PROCEDURES

Proposals received by NSF are assigned to the appropriate NSF program for acknowledgement and, if they meet NSF requirements, for review. All proposals are carefully reviewed by a scientist, engineer, or educator serving as an NSF Program Officer, and usually by three to ten other persons outside NSF either as *ad hoc* reviewers, panelists, or both, who are experts in the particular fields represented by the proposal. These reviewers are selected by Program Officers charged with oversight of the review process. Proposers are invited to suggest names of persons they believe are especially well qualified to review the proposal and/or persons they would prefer not review the proposal. These suggestions may serve as one source in the reviewer selection process at the Program Officer's discretion. Submission of such names, however, is optional. Care is taken to ensure that reviewers have no conflicts of interest with the proposal. In addition, Program Officers may obtain comments from site visits before recommending final action on proposals. Senior NSF staff further review recommendations for awards. A flowchart that depicts the entire NSF proposal and award process (and associated timeline) is included in PAPPG Exhibit III-1.

A comprehensive description of the Foundation's merit review process is available on the NSF website at: https://www.nsf.gov/bfa/dias/policy/merit_review/.

Proposers should also be aware of core strategies that are essential to the fulfillment of NSF's mission, as articulated in *Building the Future: Investing in Discovery and Innovation - NSF Strategic Plan for Fiscal Years (FY) 2018 – 2022*. These strategies are integrated in the program planning and implementation process, of which proposal review is one part. NSF's mission is particularly well-implemented through the integration of research and education and broadening participation in NSF programs, projects, and activities.

One of the strategic objectives in support of NSF's mission is to foster integration of research and education through the programs, projects, and activities it supports at academic and research institutions. These institutions must recruit, train, and prepare a diverse STEM workforce to advance the frontiers of science and participate in the U.S. technology-based economy. NSF's contribution to the national innovation ecosystem is to provide cutting-edge research under the guidance of the Nation's most creative scientists and engineers. NSF also supports development of a strong science, technology, engineering, and mathematics (STEM) workforce by investing in building the knowledge that informs improvements in STEM teaching and learning.

NSF's mission calls for the broadening of opportunities and expanding participation of groups, institutions, and geographic regions that are underrepresented in STEM disciplines, which is essential to the health and vitality of science and engineering. NSF is committed to this principle of diversity and deems it central to the programs, projects, and activities it considers and supports.

A. Merit Review Principles and Criteria

The National Science Foundation strives to invest in a robust and diverse portfolio of projects that creates new knowledge and enables breakthroughs in understanding across all areas of science and engineering research and education. To identify which projects to support, NSF relies on a merit review process that incorporates consideration of both the technical aspects of a proposed project and its potential to contribute more broadly to advancing NSF's mission "to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense; and for other purposes." NSF makes every effort to conduct a fair, competitive, transparent merit review process for the selection of projects.

1. Merit Review Principles

These principles are to be given due diligence by PIs and organizations when preparing proposals and managing projects, by reviewers when reading and evaluating proposals, and by NSF program staff when determining whether or not to recommend proposals for funding and while overseeing awards. Given that NSF is the primary federal agency charged with nurturing and supporting excellence in basic research and education, the following three principles apply:

- All NSF projects should be of the highest quality and have the potential to advance, if not transform, the frontiers of knowledge.
- NSF projects, in the aggregate, should contribute more broadly to achieving societal goals. These "Broader Impacts" may be accomplished through the research itself, through activities that are directly related to specific research projects, or through activities that are supported by, but are complementary to, the project. The project activities may be based on previously established and/or innovative methods and approaches, but in either case must be well justified.
- Meaningful assessment and evaluation of NSF funded projects should be based on appropriate metrics, keeping in mind the likely correlation between the effect of broader impacts and the resources provided to implement projects. If the size of the activity is limited, evaluation of that activity in isolation is not likely to be meaningful. Thus, assessing the effectiveness of these activities may best be done at a higher, more aggregated, level than the individual project.

With respect to the third principle, even if assessment of Broader Impacts outcomes for particular projects is done at an aggregated level, PIs are expected to be accountable for carrying out the activities described in the funded project. Thus, individual projects should include clearly stated goals, specific descriptions of the activities that the PI intends to do, and a plan in place to document the outputs of those activities.

These three merit review principles provide the basis for the merit review criteria, as well as a context within which the users of the criteria can better understand their intent.

2. Merit Review Criteria

All NSF proposals are evaluated through use of the two National Science Board approved merit review criteria. In some instances, however, NSF will employ additional criteria as required to highlight the specific objectives of certain programs and activities.

The two merit review criteria are listed below. **Both** criteria are to be given **full consideration** during the review and decision-making processes; each criterion is necessary but neither, by itself, is sufficient. Therefore, proposers must fully address both criteria. (PAPPG Chapter II.C.2.d(i). contains additional information for use by proposers in development of the Project Description section of the proposal). Reviewers are strongly encouraged to review the criteria, including PAPPG Chapter II.C.2.d(i), prior to the review of a proposal.

When evaluating NSF proposals, reviewers will be asked to consider what the proposers want to do, why they want to do it, how they plan to do it, how they will know if they succeed, and what benefits could accrue if the project is successful. These issues apply both to the technical aspects of the proposal and the way in which the project may make broader contributions. To that end, reviewers will be asked to evaluate all proposals against two

criteria:

- **Intellectual Merit:** The Intellectual Merit criterion encompasses the potential to advance knowledge; and
- **Broader Impacts:** The Broader Impacts criterion encompasses the potential to benefit society and contribute to the achievement of specific, desired societal outcomes.

The following elements should be considered in the review for both criteria:

1. What is the potential for the proposed activity to
    a. Advance knowledge and understanding within its own field or across different fields (Intellectual Merit); and
    b. Benefit society or advance desired societal outcomes (Broader Impacts)?
2. To what extent do the proposed activities suggest and explore creative, original, or potentially transformative concepts?
3. Is the plan for carrying out the proposed activities well-reasoned, well-organized, and based on a sound rationale? Does the plan incorporate a mechanism to assess success?
4. How well qualified is the individual, team, or organization to conduct the proposed activities?
5. Are there adequate resources available to the PI (either at the home organization or through collaborations) to carry out the proposed activities?

Broader impacts may be accomplished through the research itself, through the activities that are directly related to specific research projects, or through activities that are supported by, but are complementary to, the project. NSF values the advancement of scientific knowledge and activities that contribute to achievement of societally relevant outcomes. Such outcomes include, but are not limited to: full participation of women, persons with disabilities, and underrepresented minorities in science, technology, engineering, and mathematics (STEM); improved STEM education and educator development at any level; increased public scientific literacy and public engagement with science and technology; improved well-being of individuals in society; development of a diverse, globally competitive STEM workforce; increased partnerships between academia, industry, and others; improved national security; increased economic competitiveness of the United States; and enhanced infrastructure for research and education.

Proposers are reminded that reviewers will also be asked to review the Data Management Plan and the Postdoctoral Researcher Mentoring Plan, as appropriate.

Additional Solicitation Specific Review Criteria

This activity, particularly the Ideas Lab approach, is designed to foster the development and implementation of creative and innovative project ideas that have the potential to transform research paradigms and/or solve intractable problems. NSF anticipates that awards made through this solicitation will be high-risk/high-impact, as they represent new and unproven ideas, approaches and/or technologies. Projects that involve the application of novel, collaborative, or interdisciplinary approaches will therefore receive priority during the consideration process. In addition, full proposals derived from the GOLD Ideas Lab will be evaluated to determine whether the themes/objectives in the proposal are congruent with the ideas presented at the Ideas Lab, and whether any significant changes in project scope or resources from those presented at the Ideas Lab have been justified.

Review and Selection Process

Proposals submitted in response to this program solicitation will be reviewed following the guidelines for an Ideas Lab described in the NSF Grant Proposal Guide, NSF 16-1, Chapter II.D.3.

Stage 1: Review of Ideas Lab Preliminary Proposals:

Five to six qualified persons external to NSF will be selected to serve as the Mentors for the Ideas Lab. These individuals will be subject matter experts from diverse disciplines pertinent to the topic of the Ideas Lab. The Mentors and professional facilitators, who will be engaged in the Ideas Lab activities, will review the preliminary proposals submitted by applicants and will advise NSF on participant selection. Final selection decisions regarding participation in the GOLD Ideas Lab workshop will be made by the NSF.

Overall, the Mentors will seek to ensure that a balance of expertise and experience is present at the Ideas Lab workshop; their assessment will be based on the specific criteria outlined below:

- The ability to develop new and highly original research ideas;
- The potential to contribute to research between disciplines;
- The ability to work in interdisciplinary teams.

Individuals interested in participating in the Ideas Lab workshop will submit a preliminary proposal including information regarding the applicant's specific expertise and personal attributes that will enhance the success of the Ideas Lab workshop. Submission of the preliminary proposal will be considered an indication of commitment to attend and participate through the full course of the five-day residential Ideas Lab workshop on March 20-24, 2016, should the proposer be invited. The decisions of NSF about whom to invite will be final and binding.

Stage 2: Review of Prospective Proposal Ideas

Applicants selected by the NSF will participate in the Ideas Lab workshop, building collaborations and refining ideas. At the end of the workshop, the Mentors will evaluate each project idea. Based on the Mentors' advice, within seven to fourteen days of the workshop, NSF will invite select teams to submit a full proposal. These invited full proposals must be prepared according to standard NSF Grant Proposal Guide formatting guidelines.

It is anticipated that these full proposals developed through the Ideas Lab workshop will feature the following:

- Novel, highly multidisciplinary design and development projects, clearly reflecting the distinctive opportunity for creating such projects that the Ideas Lab mechanism provides;
- Clear evidence that the team has the capability to deliver its project as a high quality multidisciplinary activity; and,
- Clear relevance and potential to make a distinctive and novel contribution to addressing the need for scalable, professional development activities that empower new leaders working to increase diversity in the geosciences.

Stage 3: Review of Invited Full Proposal

Invited full proposals resulting from the Ideas Lab workshop will be reviewed by a panel composed of the Ideas Lab Mentors, whose role is advisory to NSF. Mentors will provide a summary rating and accompanying narrative for each proposal and meet as a panel to evaluate and rank the proposals. Final funding decisions will be made by the NSF.

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 https://www.nsf.gov/awards/managing/award_conditions.jsp?org=NSF. Paper copies may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-8134 or by e-mail from nsfpubs@nsf.gov.

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

C. Reporting Requirements

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

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

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

prepared specifically for the public, of the nature and outcomes of the project. This report will be posted on the NSF website exactly as it is submitted by the PI.

More comprehensive information on NSF Reporting Requirements and other important information on the administration of NSF awards is contained in the NSF *Award & Administration Guide* (AAG) Chapter II, available electronically on the NSF Website at https://www.nsf.gov/pubs/policydocs/pappguide/nsf16001/aag_index.jsp.

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:

- General Inquiries may be addressed to:, telephone: (703) 292-8500, email: geogold@nsf.gov
- M. Brandon Jones, telephone: (703) 292-8500, email: geogold@nsf.gov
- Aisha R. Morris, telephone: (703) 292-8500, email: geogold@nsf.gov
- Dena M. Smith-Nufio, telephone: (703) 292-8500, email: geogold@nsf.gov
- Amanda (Manda) S. Adams, telephone: (703) 292-8500, email: geogold@nsf.gov
- Lina Patino, telephone: (703) 292-8500, email: geogold@nsf.gov
- Elizabeth L. Rom, telephone: (703) 292-8500, email: geogold@nsf.gov

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

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

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

  Research.gov Help Desk e-mail: rgov@nsf.gov

For questions relating to Grants.gov contact:

- Grants.gov Contact Center: If the Authorized Organizational Representatives (AOR) has not received a confirmation message from Grants.gov within 48 hours of submission of application, please contact via telephone: 1-800-518-4726; e-mail: support@grants.gov.

For all inquiries related to this program, please send email to GEOGOLD@nsf.gov.

IX. OTHER INFORMATION

The NSF website provides the most comprehensive source of information on NSF Directorates (including contact information), programs and funding opportunities. Use of this website by potential proposers is strongly encouraged. In addition, "NSF Update" is an information-delivery system designed to keep potential proposers and other interested parties apprised of new NSF funding opportunities and publications, important changes in proposal and award policies and procedures, and upcoming NSF Grants Conferences. Subscribers are informed through e-mail or the user's Web browser each time new publications are issued that match their identified interests. "NSF Update" also is available on NSF's website.

Grants.gov provides an additional electronic capability to search for Federal government-wide grant opportunities. NSF funding opportunities may be accessed via this mechanism. Further information on Grants.gov may be obtained at https://www.grants.gov.

ABOUT THE NATIONAL SCIENCE FOUNDATION

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

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

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

Facilitation Awards for Scientists and Engineers with Disabilities (FASED) provide funding for special assistance or equipment to enable persons with disabilities to work on NSF-supported projects. See the *NSF Proposal & Award Policies & Procedures Guide* Chapter II.E.6 for instructions regarding preparation of these types of proposals.

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

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

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

To get the latest information about program deadlines, to download copies of NSF publications, and to access abstracts of awards, visit the NSF Website at https://www.nsf.gov

- **Location:** 2415 Eisenhower Avenue, Alexandria, VA 22314
- **For General Information** (NSF Information Center)**:** (703) 292-5111
- **TDD (for the hearing-impaired):** (703) 292-5090
- **To Order Publications or Forms:**

  Send an e-mail to: nsfpubs@nsf.gov

  or telephone: (703) 292-7827
- **To Locate NSF Employees:** (703) 292-5111

PRIVACY ACT AND PUBLIC BURDEN STATEMENTS

The information requested on proposal forms and project reports is solicited under the authority of the National Science Foundation Act of 1950, as amended. The information on proposal forms will be used in connection with the selection of qualified proposals; and project reports submitted by awardees will be used for program evaluation and reporting within the Executive Branch and to Congress. The information requested may be disclosed to qualified reviewers and staff assistants as part of the proposal review process; to proposer institutions/grantees to provide or obtain data regarding the proposal review process, award decisions, or the administration of awards; to government contractors, experts, volunteers and researchers and educators as necessary to complete assigned work; to other government agencies or other entities needing information regarding applicants or nominees as part of a joint application review process, or in order to coordinate programs or policy; and to another Federal agency, court, or party in a court or Federal administrative proceeding if the government is a party. Information about Principal Investigators may be added to the Reviewer file and used to select potential candidates to serve as peer reviewers or advisory committee members. See System of Record Notices, NSF-50, "Principal Investigator/Proposal File and Associated Records," and NSF-51, "Reviewer/Proposal File and Associated Records." Submission of the information is voluntary. Failure to provide full and complete information, however, may reduce the possibility of receiving an award.

An agency may not conduct or sponsor, and a person is not required to respond to, an information collection unless it displays a valid Office of Management and Budget (OMB) control number. The OMB control number for this collection is 3145-0058. Public reporting burden for this collection of information is estimated to average 120 hours per response, including the time for reviewing instructions. Send comments regarding the burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to:

Suzanne H. Plimpton
Reports Clearance Officer
Office of the General Counsel
National Science Foundation
Alexandria, VA 22314