Partnerships for Innovation: Accelerating Innovation Research - Technology Translation (PFI: AIR-TT)

PROGRAM SOLICITATION
NSF 16-583

REPLACES DOCUMENT(S):
NSF 15-570

National Science Foundation

Directorate for Engineering
  Industrial Innovation and Partnerships

Letter of Intent Due Date(s) *(required)* (due by 5 p.m. submitter's local time):

    September 08, 2016

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

    October 11, 2016

IMPORTANT INFORMATION AND REVISION NOTES

The following notable changes have been made to the previous PFI: AIR-TT solicitation (NSF-15-570) Minor changes also may be present; proposers are encouraged to read the full solicitation carefully.

1. There is an adjustment to the lineage requirements such that this solicitation allows two possible lineage paths: lineage of research results from a prior NSF award, **OR** lineage to customer discovery results through graduation from a National NSF-funded I- Corps[TM] program.
2. In prior solicitations, there have been two submission windows per year. This solicitation allows only **one** submission window with Letters of Intent due on September 8, 2016 and full proposals due October 11, 2016. There is no spring submission window.

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.

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

    Partnerships for Innovation: Accelerating Innovation Research- Technology Translation (PFI: AIR-TT)

Synopsis of Program:

    The NSF Partnerships for Innovation (PFI) program within the Division of Industrial Innovation and Partnerships (IIP) is an umbrella for two complementary subprograms, Accelerating Innovation Research (AIR) and Building Innovation Capacity (BIC). Overall, the PFI program offers opportunities to connect new knowledge to societal benefit through translational research efforts and/or partnerships that encourage, enhance and accelerate innovation and entrepreneurship. The subject of this solicitation is PFI: AIR-Technology Translation (PFI: AIR-TT). The PFI: AIR-TT solicitation serves as an early opportunity to move previously NSF-funded research results with promising commercial potential along the path toward commercialization. Projects are supported to demonstrate proof-of-concept, prototype, or scale-up while engaging faculty and students in entrepreneurial/innovative thinking.

    WEBINAR: A webinar will be held the end of July or early August, 2016 to answer any questions about this solicitation. Details will be posted on the IIP website (http://www.nsf.gov/eng/iip/pfi/air-tt.jsp) **as they become available.**

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.

- Barbara H. Kenny, Program Director, telephone: (703) 292-4667, email: bkenny@nsf.gov

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

- 47.041 --- Engineering
- 47.049 --- Mathematical and Physical Sciences
- 47.050 --- Geosciences
- 47.070 --- Computer and Information Science and Engineering
- 47.074 --- Biological Sciences
- 47.075 --- Social Behavioral and Economic Sciences
- 47.076 --- Education and Human Resources
- 47.079 --- Office of International Science and Engineering
- 47.083 --- Office of Integrative Activities (OIA)

Award Information

Anticipated Type of Award: Standard Grant or Continuing Grant

Estimated Number of Awards: 45 to 50

The budget for the PFI: AIR Technology Translation is up to $200,000 for 18 months per award; approximately 45 - 50 awards will be made.

Anticipated Funding Amount: $10,000,000

Anticipated Funding Amount is subject to the availability of funds and the quality of proposals received.

Eligibility Information

Who May Submit Proposals:

Proposals may only be submitted by the following:

- Academic / Research Institutions; includes universities and two- and four-year colleges (including community colleges) accredited in, and having a campus located in, the US acting on behalf of their faculty members. Includes non-profit academic / research institutions.

Who May Serve as PI:

Lineage Requirement: There are two paths to meet the lineage requirement: through NSF-supported research results, or NSF-supported (National I-Corps^{TM}) customer discovery results

1. Principal Investigator (PI) or a co-PI must have had an NSF award that ended no more than 6-years prior to the chosen submission window's full proposal deadline date or be a current NSF award recipient. The proposed proof-of-concept or prototype/ scale-up must be derived from the research results and/or discoveries from this underlying NSF award **-OR-**

2. The Principal Investigator (PI) or a co-PI must have graduated as part of an NSF cohort from an NSF-funded National I- Corps^{TM} program within the past 3 years. The proposed proof-of-concept or prototype/ scale-up must be based on technology for which customer discovery activities were performed under the I- Corps^{TM} national training. In other words, it is **not** sufficient to just have had I- Corps^{TM} training; rather the customer discovery activities performed under the NSF-funded I- Corps^{TM} grant need to be based on the technology that is proposed to be translated within the AIR-TT proposal.

Note: a proposal describing sole lineage to any of the following programs is not allowed and **may be returned without review**: Research Experiences for Undergraduates (REU), Research Experiences for Teachers (RET), the Graduate Research Fellowship Program (GRFP), PFI: AIR-TT, PFI: AIR-RA, Regional I-Corps^{TM}, and SBIR/STTR.

The PI must be a faculty member at a U.S. academic / research institution at the time of the award.

In addition to the PI, there must be at least one other participant on the project (e.g., someone listed as a co-PI, Senior Personnel, Other Professional, subawardee, consultant, collaborator, etc.) with explicit business experience (for example, someone from the technology transfer office, the business school, a local/regional development office, a business entity, etc.). This person must have an active role that is explicitly described along with the specification of a time commitment on the project.

Limit on Number of Proposals per Organization:

There are no restrictions or limits.

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

No person may participate as the PI for more than one proposal submitted to any submission window of this PFI: AIR-TT solicitation. A PI may submit to consecutive submission windows; however, a resubmitted proposal that has not clearly taken into account the major comments or concerns resulting from the prior NSF review may be returned without review. The Foundation will treat the revised proposal as a new proposal, subject to the standard review procedures.

Proposal Preparation and Submission Instructions

A. Proposal Preparation Instructions

- **Letters of Intent:** Submission of Letters of Intent is required. Please see the full text of this solicitation for further

information.

- **Preliminary Proposal Submission:** Not required

- **Full Proposals:**

    - Full Proposals submitted via FastLane: NSF Proposal and Award Policies and Procedures Guide, Part I: Grant Proposal Guide (GPG) Guidelines apply. 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.
    - Full Proposals submitted via Grants.gov: NSF Grants.gov Application Guide: A Guide for the Preparation and Submission of NSF Applications via Grants.gov Guidelines apply (Note: The NSF Grants.gov Application Guide is available on the Grants.gov website and on the NSF website at: http://www.nsf.gov/publications/pub_summ.jsp?ods_key=grantsgovguide)

B. Budgetary Information

- **Cost Sharing Requirements:**

    Inclusion of voluntary committed cost sharing is prohibited.

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

    Not Applicable

- **Other Budgetary Limitations:**

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

C. Due Dates

- **Letter of Intent Due Date(s)** *(required)* (due by 5 p.m. submitter's local time):

    September 08, 2016

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

    October 11, 2016

Proposal Review Information Criteria

Merit Review Criteria:

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

Award Administration Information

Award Conditions:

Additional award conditions apply. Please see the full text of this solicitation for further information.

Reporting Requirements:

Standard NSF reporting requirements apply.

TABLE OF CONTENTS

I. INTRODUCTION

The National Science Foundation (NSF) supports fundamental research and education in science and engineering to advance basic knowledge and provide benefit to society. The preponderance of NSF-funded research supports the discovery that enables innovation. It lays the scientific and engineering knowledge base for technological innovation to prosper. In synergy with this, research supported by the Division of Industrial Innovation and Partnerships (IIP) aims to systematically facilitate and accelerate the use of basic research results such that discovery is translated to innovation to realize its commercialization potential. In addition to the PFI: AIR-TT program (this solicitation), programs within IIP and NSF that contribute to this mission include Partnerships for

Innovation: Building Innovation Capacity (PFI: BIC), Innovation Corps (I-Corps^{TM}), Small Business Innovation Research/Small Business Technology Transfer Research (SBIR/STTR), and Grant Opportunities for Academic Liaison with Industry (GOALI).

II. PROGRAM DESCRIPTION

The Directorate for Engineering (ENG) of the National Science Foundation (NSF) invites requests for funding under the Partnerships for Innovation: Accelerating Innovation Research- Technology Translation (PFI: AIR-TT) solicitation. This PFI: AIR-TT solicitation is designed to support innovative ideas and partnerships in the translation of NSF-funded fundamental science and engineering discoveries, or fundamental science and engineering discoveries that have been vetted through the Customer Discovery process of

the National I-Corps^{TM} program, toward market-valued solutions. The program outcomes will be more research discoveries translated onto a path toward commercial reality, more connections between faculty and persons knowledgeable about market need (e.g., potential customers, individuals with business experience, potential investors, etc.) and the engagement of faculty and students in entrepreneurial/innovative thinking.

The development of basic research into deployed technology is often depicted as a sequence of steps from basic research through proof-of-concept, prototype, product development and finally commercialization. While the sequence of events may not occur in a straightforward linear fashion, the knowledge associated with each step is necessary for the transition to occur. This PFI: AIR-TT solicitation is aimed at advancing knowledge along this continuum for projects with technology innovation(s) that has already passed the basic research phase. The proposed project should be into the proof-of concept or early prototype phase with promising results and an identified potential market need or application. The proposed research should address the next stage technology/knowledge gap(s) or barrier(s) that must be solved/demonstrated as part of the path from the basic research discovery to eventual successful commercialization. The work proposed should move the technology to a higher level of maturity and readiness and result in a higher fidelity proof-of-concept or prototype/ scale-up demonstration. In other words, there should be new knowledge at the end of the award that has moved the technology closer toward commercialization.

Another dimension of the path from basic discovery to successful commercialization involves an understanding of various business aspects of the innovation such as intellectual property (freedom to operate, licensing, etc.), regulatory issues, market need, etc. It is expected that the submitting team writes the proposal with an initial, basic understanding of the relevant issues as described in Section V.A.D. *Project Description*, below. The expectation is that over the course of the project, the "participant with explicit business experience" will lead the effort to advance the team's understanding of the business aspects of the project alongside the team's technical advances.

This solicitation is not intended to fund efforts directed toward only market research or commercialization activities; the commercial development of existing products or proven concepts; straightforward engineering design for packaging; incremental existing product or process improvements; the evolutionary optimization of existing products; or evolutionary modifications to broaden the scope of an existing product or application.

NSF plans to offer awardees one opportunity during the course of an award to attend a grantee meeting held in conjunction with a technology showcase to connect with potential industry collaborators and/or private-sector investors. The showcase would be an opportunity to demonstrate a prototype and/or present a poster about the work supported under the AIR award. Applicants should budget travel for the PI and one student or post-doc to attend (approximately $2,500 per person).

III. AWARD INFORMATION

Anticipated Type of Award: Continuing Grant or Standard Grant

Estimated Number of Awards: 45 to 50

The budget for the PFI: AIR Technology Translation is up to $200,000 for 18 months per award; approximately 45 - 50 awards will be made.

Anticipated Funding Amount: $10,000,000

Anticipated Funding Amount is subject to the availability of funds and the quality of proposals received.

Full Proposals submitted on October 11, 2016 will have an approximate award start date of May 1, 2017.

IV. ELIGIBILITY INFORMATION

Who May Submit Proposals:

Proposals may only be submitted by the following:

- Academic / Research Institutions; includes universities and two- and four-year colleges (including community colleges) accredited in, and having a campus located in, the US acting on behalf of their faculty members. Includes non-profit academic / research institutions.

Who May Serve as PI:

Lineage Requirement: There are two paths to meet the lineage requirement: through NSF-supported research results, or NSF-supported (National I-Corps^{TM}) customer discovery results

1. Principal Investigator (PI) or a co-PI must have had an NSF award that ended no more than 6-years prior to the chosen submission window's full proposal deadline date or be a current NSF award recipient. The proposed proof-of-concept or prototype/ scale-up must be derived from the research results and/or discoveries from this underlying NSF award **-OR-**

2. The Principal Investigator (PI) or a co-PI must have graduated as part of an NSF cohort from an NSF-funded National I- Corps^{TM} program within the past 3 years. The proposed proof-of-concept or prototype/ scale-up must be based on technology for which customer discovery activities were performed under the I- Corps^{TM} national training. In other words, it is **not** sufficient to just have had I- Corps^{TM} training; rather the customer discovery activities performed under the NSF-funded I- Corps^{TM} grant need to be based on the technology that is proposed to be translated within the AIR-TT proposal.

Note: a proposal describing sole lineage to any of the following programs is not allowed and **may be returned without review**: Research Experiences for Undergraduates (REU), Research Experiences for Teachers (RET), the Graduate Research Fellowship Program (GRFP), PFI: AIR-TT, PFI: AIR-RA, Regional I-Corps^{TM}, and SBIR/STTR.

The PI must be a faculty member at a U.S. academic / research institution at the time of the award.

In addition to the PI, there must be at least one other participant on the project (e.g., someone listed as a co-PI, Senior Personnel, Other Professional, subawardee, consultant, collaborator, etc.) with explicit business experience (for example, someone from the technology transfer office, the business school, a local/regional development office, a business entity, etc.). This person must have an active role that is explicitly described along with the specification of a time commitment on the project.

Limit on Number of Proposals per Organization:

There are no restrictions or limits.

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

No person may participate as the PI for more than one proposal submitted to any submission window of this PFI: AIR-TT solicitation. A PI may submit to consecutive submission windows; however, a resubmitted proposal that has not clearly taken into account the major comments or concerns resulting from the prior NSF review may be returned without review. The Foundation will treat the revised proposal as a new proposal, subject to the standard review procedures.

Additional Eligibility Info:

No collaborative proposals (defined as simultaneous proposal submissions for a joint project from different organizations, with each organization requesting a separate award) will be accepted.

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

Letters of Intent *(required)*:

Submission of a Letter of Intent (LOI) from the lead institution is mandatory. Letters of intent are to be submitted via FastLane which is available at http://fastlane.nsf.gov/. The LOI allows the NSF to examine the submissions to identify topic areas and to anticipate review requirements in order to prepare for the proposal review process. The LOI will not be used to eliminate or deter full proposal submissions.

Enter the requested core Letter of Intent information as prompted by FastLane. The "synopsis" and the "other comments" data fields each can contain a maximum of 2,500 characters. Note that the LOIs are restricted as to the number of data fields and the number of characters in each of the "additional information" data fields that can be entered in FastLane.

Additionally, complete these data fields for the LOI:

- *Lineage (255 chars)* - Identify the NSF lineage (connections to prior or existing NSF research award(s) underlying the anticipated PFI: AIR-TT proposal or the I-Corps^{TM} award under which the relevant customer discovery activities were

performed); provide the NSF award number(s), the title, and the award performance dates.
- ***Statement of the Innovation** (255 chars)* - Identify the anticipated market need / opportunity and the output (proof-of-concept or prototype/ scale-up) that will result from the translation of an existing research discovery.
- ***List of Participating Organizations(s)** (255 chars)* - Provide identification of partner(s), *if appropriate*. If none, state NONE.

Letter of Intent Preparation Instructions:

When submitting a Letter of Intent through FastLane in response to this Program Solicitation please note the conditions outlined below:

- Submission by an Authorized Organizational Representative (AOR) is required when submitting Letters of Intent.
- Lineage is required when submitting Letters of Intent
- Statement of the Innovation is required when submitting Letters of Intent
- List of Participating Organizations is required when submitting Letters of Intent
- Submission of multiple Letters of Intent is not allowed

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

- Full proposals submitted via FastLane: Proposals submitted in response to this program solicitation should be prepared and submitted in accordance with the general guidelines contained in the NSF Grant Proposal Guide (GPG). The complete text of the GPG is available electronically on the NSF website at: http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpg. Paper copies of the GPG may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from nsfpubs@nsf.gov. Proposers are reminded to identify this program solicitation number in the program solicitation block on the NSF Cover Sheet For Proposal to the National Science Foundation. Compliance with this requirement is critical to determining the relevant proposal processing guidelines. Failure to submit this information may delay processing.

- Full proposals submitted via Grants.gov: Proposals submitted in response to this program solicitation via Grants.gov should be prepared and submitted in accordance with the NSF Grants.gov Application Guide: A Guide for the Preparation and Submission of NSF Applications via Grants.gov. The complete text of the NSF Grants.gov Application Guide is available on the Grants.gov website and on the NSF website at: (http://www.nsf.gov/publications/pub_summ.jsp?ods_key=grantsgovguide). To obtain copies of the Application Guide and Application Forms Package, click on the Apply tab on the Grants.gov site, then click on the Apply Step 1: Download a Grant Application Package and Application Instructions link and enter the funding opportunity number, (the program solicitation number without the NSF prefix) and press the Download Package button. Paper copies of the Grants.gov Application Guide also may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from nsfpubs@nsf.gov.

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.

The following instructions deviate from or supplement the requirements contained within the NSF Grant Proposal Guide (GPG) or NSF Grants.gov ***Application Guide. Where the solicitation specifications differ from the GPG, the guidance in the solicitation take precedence.***

A well-constructed PFI: AIR-TT proposal should convey how the project will accomplish the following goals:

1. Technical – Advancement of the state of knowledge of the underlying research discovery toward commercial application via:
   - A proof-of-concept development, demonstration and evaluation with results sufficient to determine applicability of the innovation to the identified market application/opportunity; OR
   - A prototype/ scale-up development, demonstration and evaluation, with results sufficient to determine initial feasibility and functional limitations of the innovation in the identified market application/opportunity.
2. Commercial – Although the predominance of effort is expected to be in the achievement of the technical goals, progress on the market/commercial side is also expected. The individual(s) with business experience should lead this effort. Types of issues that may be considered include: the identified market space, the market need, the competitive technologies; the potential impact of the proposed competitive innovation/substitution technology; necessary intellectual property protection, licensing opportunities and freedom to operate issues; and/or environmental health, safety, and/or other regulatory issues.
3. Educational – Participants in this effort should demonstrate an enhanced understanding of innovation, technology commercialization and/or entrepreneurship by the end of the project.

The proposal consists of the following parts:

A. **Cover Sheet**

   The cover sheet is automatically generated by FastLane or Grants.gov based on information entered into the "Cover Sheet" module.

B. **Project Summary (one-page limit)**

   The Project Summary should be written in the third person and shall begin as follows: "This Accelerating Innovation Technology Translation project ..." Do not include proprietary information in the summary.

   The summary MUST clearly address the following items:

   Box 1: Overview, Key Words: The Overview should consist of a summary paragraph that briefly discusses the areas of application that are the initial target markets of the technology to be translated and the potential outcomes of the proposed activity. The key words/phrases should include the number assigned to the corresponding LOI submission and the NSF award number(s) of the claimed lineage award(s) in addition to the areas of technical expertise in science and engineering that are to be invoked in reviewing the proposal.

   Box 2: Intellectual Merit: A summary paragraph addressing the intellectual merits of the proposed activity; e.g., areas where the project will advance knowledge.

   Box 3: Broader Impacts: A summary paragraph that describes the potential societal, economic, commercial and educational impacts of the project.

   The aggregate of the three text boxes cannot exceed 4,600 characters.

C. **Table of Contents** The table of contents is automatically generated by FastLane or Grants.gov.
D. **Project Description (cannot exceed 15 pages)**

The project description must include the following sections in the order specified. The corresponding bullets are suggestions for the type of information to be discussed in each section and are meant to be a guide. Adjustments in exact content and length of each section are allowable as necessary for the PI to present his/her ideas as clearly as possible. Please note that the instructions for this section of the proposal deviate from, and take precedence over, the guidance in the GPG.

Overview and Motivation (suggested length: 1-2 pages)

- Briefly describe the existing research discovery to be translated and the lineage to prior NSF support, through research activities and/or I-Corps[TM] customer discovery activities.
- Describe the key features of the innovation. What is the target market space? What is the key differentiator(s) from the current state of the art and other competing technologies? How is this beneficial to a potential customer?
- What is the intellectual merit of the proposed work?
- Explicitly identify the anticipated output of the project: proof-of-concept or prototype/ scale-up. What will be learned from the project? What are the knowledge gaps being addressed?

Market Opportunity and Intellectual Property (suggested length: 3-4 pages)

- Describe the broader impacts of the innovation in terms of societal, economic and/or commercial benefit.
- Discuss the market need(s) to be addressed and the preliminary market research that has been done to support that need. What are the existing competitive technologies, and what are their shortcomings?
- Describe how the innovation will offer a competitive solution or a competitive substitute. What features will make it competitive? What features keep potential competitors from circumventing the technology?
- Discuss the results of the preliminary patent search and the feasibility of obtaining needed licenses and/or sufficient protection for the intellectual property developed. Discuss any relevant background intellectual property held by the proposing institution, its availability for licensing, and an assessment of how another party might patent or practice around both background and anticipated intellectual property assets.

Technical Challenges and Research Plan (suggested length: 5-7 pages)

- Describe the current state-of-the-art knowledge about the underlying research discovery and include relevant data/results sufficient to describe the basis of the proposed work.
- Describe the envisioned next step on the path toward commercialization and the knowledge gaps and technical barriers that must be overcome to achieve the next step. How will successful demonstration of the proposed proof-of-concept or prototype close the identified gap(s)?
- Describe the research plan to address the knowledge gaps and technical barriers. What are the specific tasks/activities that will be done in order to close the gaps so that the proof-of-concept or prototype can be demonstrated? Who will be assigned to the identified tasks? Note that a milestone chart is required as a supplemental document.

Team (suggested length: 1-2 pages)

- Describe the team members and the strengths they bring to the project. Are there partners and/or collaborators outside of the proposing institution? Describe their role and the value they add to the project.
- Describe the role of the project participant with business experience. How will he/she help achieve the goals of the project?

Strategy Toward Commercialization (suggested length: 1-2 pages)

- Describe the overall strategy of a path toward commercialization that continues beyond the duration of this award.

Training and Involvement of Students / Post-doctoral Fellows (suggested length: 1-2 pages)

- Describe the plan for the involvement of undergraduate, graduate students and/or post-docs, incorporating an explanation of how the proposed effort will enhance their knowledge of innovation and technology commercialization beyond the usual research experience.
- Describe the broader impacts of the work proposed in the context of the development of a diverse and globally competitive workforce.

Patentable ideas, trade secrets, privileged or confidential commercial or financial information, disclosure of which may harm the proposer, should be included in proposals only when such information is necessary to convey an understanding of the proposed project. Such information must be clearly marked in the proposal and be appropriately labeled with a legend such as, "The following is (proprietary or confidential) information that (name of proposing organization) requests not be released to persons outside the Government, except for purposes of review and evaluation." The box for "Proprietary or Privileged Information" must be checked on the Cover Sheet when the proposal contains such information.

E. **References Cited**

Provide a comprehensive listing of relevant reference sources, including patent citations. If there are no references cited in the proposal, include a statement to that effect in this module.

F. **Biographical Sketches**

Include short bios (two pages maximum) of the PI, co-PIs and other key personnel, including graduate students and post-doctoral fellows, if known. Highlight their technical expertise and track records in successful technology and/or business development. All participants listed as either co-PIs or other " Senior Personnel" must submit a bio sketch of no more than two pages.

G. **Budgets and Subaward budgets**

The NSF Summary Proposal Budget is generated in FastLane or Grants.gov. Prepare a budget for each year. The system will automatically generate a cumulative budget for the entire project. A budget justification is required for each non-zero item in the budget; it should explicitly state how and where the requested funds will be spent. Note that the costs of initial patent searches and marketing studies are allowable costs.

It is allowable (but not required) to expend up to 50 percent of the total budget on a subaward(s). The purpose of the proposed subaward(s) should be to augment the capabilities of the submitting academic institution. While partnerships are encouraged, bear in mind that the NSF AIR funding does not intend to support large companies' research and development activities. The need for the subaward should be clearly explained and justified in the budget justification. If a subaward is

proposed to a foreign entity, clearly justify the need for the foreign entity and how their participation is essential to the success of the project.

If other participating organizations are proposed and there is the possibility of joint development of intellectual property between the partners, it is the responsibility of the award recipients to discuss the appropriate intellectual property policies, including patent disclosures and filings. NSF is not responsible for the type of agreement reached between the grantee and any participating organizations/partners. Proposal partners must agree in advance of any award as to how intellectual property and publication rights will be handled. If applicable, an industry-university cooperative research agreement or university-university memorandum of understanding covering intellectual property rights including publication and patent rights must be submitted prior to an award.

Submit with the proposal a letter stating that the cooperative research agreement will be provided upon recommendation of an award; see Section J. If an award is recommended, the submitting institution must follow up by providing the signed, written agreement that has been negotiated with the participating organization(s) before NSF funding will be released.

If an award is recommended and there is a subaward to a company with which a PI or co-PI has a Conflict of Interest, the University must submit the conflict of interest plan for that individual covering the proposed work before NSF funding will be released. - (The Conflict of Interest plan is not required at the proposal stage, only upon recommendation of award.)

It is intended to offer awardees one opportunity during the course of the award to attend a grantee meeting held in conjunction with a technology showcase to connect with potential industry collaborators and/or private-sector investors. The showcase would be an opportunity to demonstrate a prototype and/or present a poster about the work supported under the AIR award. Applicants should budget travel to Washington, DC area for the PI and one student or post-doc to attend (approximately $2,500 per person).

Funding requests will be evaluated relative to the scope and balance of the research planned.

H. **Current and Pending Support**

The proposal should provide information regarding all research to which the PI, co-PI(s) and other Senior Personnel either have committed time or have planned to commit time. If none, state NONE.

For all ongoing or proposed projects, the following information should be provided for the Principal Investigators and Senior Personnel:

- Name of sponsoring organization and award number;
- Title and performance period of the award/proposal; and
- Person-months/calendar months (per year) devoted to the project by the PI and each of the Senior Personnel.

*Current and Pending Support must be uploaded into the system. The proposal being submitted under this solicitation is considered "pending" and therefore MUST appear in the Current and Pending Support module.

I. **Facilities, Equipment, and Other Resources**

Discuss requirements for and the availability of facilities, equipment, and other resources required for the proposed project.

J. **Supplementary Documents**

Proposals missing any of these documents may be returned without review.

- Milestone Chart. A milestone chart with specific tasks and deliverables.
- List of Prior/Current NSF Awards. Only list the prior and/or current NSF award(s) with claimed lineage to the proposed work, including an I-Corps[TM] award, if applicable. Note the intellectual merit, broader impacts, and publications from any listed lineage awards.
- Letters of Collaboration. There are two types of collaboration, one involves individuals/organizations that are included in the budget, the other involves individuals/organizations that are not included in the budget. Any substantial collaboration with individuals/organizations not included in the budget should be described in the Facilities, Equipment and Other Resources section of the proposal (see GPG Chapter II.C.2.i). In either case, whether or not the collaborator is included in the budget, a letter of collaboration from each named participating organization must be provided at the time of submission of the proposal. Such letters must explicitly state the nature of the collaboration, appear on the organization's letterhead and be signed by the appropriate organizational representative.
- Letters of Support (limit of three letters). Letters of support are highly encouraged but not required and act as an indication of market validation for the proposed innovation. Meaningful content may demonstrate that dialog has been initiated with relevant stakeholders (potential customers, strategic partners or investors) for the proposed innovation and that the potential for a business opportunity may exist should the technology prove feasible. The letter must contain affiliation and contact information for the signatory individual.
- Letter of Cooperative Research Agreement. If applicable a letter stating that a CRA(s) will be provided upon recommendation of the award must be submitted with the proposal. If an award is recommended, the submitting institution must follow-up by providing a signed, written CRA(s) before NSF funding will be released.
- Data Management Plan. A Data Management Plan is required for all proposals submitted to NSF. Consult the data management requirements at this link: http://www.nsf.gov/pubs/policydocs/pappguide/nsf15001/gpg_2.jsp#dmp.
- Postdoctoral Research Mentoring Plan. If applicable, a postdoctoral mentoring plan.
- Other Supplementary Docs. If applicable, letters regarding Use of Human Subjects, e.g., Institutional Review Board or IACUC approval of animal use.

K. **Single Copy Documents**

Proposers are encouraged to supply an annotated list of suggested reviewers complete with contact information.

B. Budgetary Information

Cost Sharing:

Inclusion of voluntary committed cost sharing is prohibited.

Other Budgetary Limitations:

NSF will not provide salary support for personnel employed by Federal Agencies or Federally Funded Research and Development Centers.

Proposers may request up to $200,000 from NSF for award durations of 18 months.

C. Due Dates

- **Letter of Intent Due Date(s)** *(required)* (due by 5 p.m. submitter's local time):

    September 08, 2016

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

    October 11, 2016

D. FastLane/Grants.gov Requirements

For Proposals Submitted Via FastLane:

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

For Proposals Submitted Via Grants.gov:

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

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

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

VI. NSF PROPOSAL PROCESSING AND REVIEW PROCEDURES

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

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

Proposers should also be aware of core strategies that are essential to the fulfillment of NSF's mission, as articulated in *Investing in Science, Engineering, and Education for the Nation's Future: NSF Strategic Plan for 2014-2018*. These strategies are integrated in the program planning and implementation process, of which proposal review is one part. NSF's mission is particularly well-implemented through the integration of research and education and broadening participation in NSF programs, projects, and activities.

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

NSF's mission calls for the broadening of opportunities and expanding participation of groups, institutions, and geographic regions

that are underrepresented in STEM disciplines, which is essential to the health and vitality of science and engineering. NSF is committed to this principle of diversity and deems it central to the programs, projects, and activities it considers and supports.

A. Merit Review Principles and Criteria

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

1. Merit Review Principles

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

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

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

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

2. Merit Review Criteria

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

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

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

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

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

1. What is the potential for the proposed activity to
    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

In making the final award decisions, NSF also may consider the following:

- Geographic distribution and diversity of academic institutions involved in the partnership
- Distribution of technology or industry sectors served

Additional Review Criteria:

- The strength of the discussion of the market need and how the innovation has the potential to offer a competitive solution or competitive advantage.
- The merit of the research plan to translate the existing research discovery to proof-of-concept, prototype or scale-up.
- The demonstrated understanding of the technology barrier(s) or knowledge gap(s) and how the proof-of-concept, prototype or scale-up has the potential to overcome that gap(s).
- The lineage of the proposed work to the prior NSF-supported research or customer discovery results.
- The suitability of the proposed team to successfully complete the project.
- The quality of the preliminary patent search and accompanying discussion to support the feasibility of obtaining needed licenses and/or sufficient protection for intellectual property developed.
- The quality of the strategy for a path toward commercialization.
- The quality of the plan for involvement of undergraduate, graduate students and/or post-docs, incorporating an explanation of how the proposed effort will enhance their knowledge of innovation.

The reasonableness of the budget and budget justification that indicate how and where the requested funds will be spent. Note, if there is a minimal research component (i.e., most of the work is to generate a business plan or to understand market need), the proposal will not be accepted.

B. Review and Selection Process

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

Ad hoc Review and/or Panel Review.

Reviewers will be asked to evaluate proposals using two National Science Board approved merit review criteria and, if applicable, additional program specific criteria. A summary rating and accompanying narrative will generally be completed and submitted by each reviewer and/or panel. The Program Officer assigned to manage the proposal's review will consider the advice of reviewers and will formulate a recommendation.

After scientific, technical and programmatic review and consideration of appropriate factors, the NSF Program Officer recommends to the cognizant Division Director whether the proposal should be declined or recommended for award. NSF strives to be able to tell applicants whether their proposals have been declined or recommended for funding within six months. Large or particularly complex proposals or proposals from new awardees may require additional review and processing time. The time interval begins on the deadline or target date, or receipt date, whichever is later. The interval ends when the Division Director acts upon the Program Officer's recommendation.

After programmatic approval has been obtained, the proposals recommended for funding will be forwarded to the Division of Grants and Agreements for review of business, financial, and policy implications. After an administrative review has occurred, Grants and Agreements Officers perform the processing and issuance of a grant or other agreement. Proposers are cautioned that only a Grants and Agreements Officer may make commitments, obligations or awards on behalf of NSF or authorize the expenditure of funds. No commitment on the part of NSF should be inferred from technical or budgetary discussions with a NSF Program Officer. A Principal Investigator or organization that makes financial or personnel commitments in the absence of a grant or cooperative agreement signed by the NSF Grants and Agreements Officer does so at their own risk.

Once an award or declination decision has been made, Principal Investigators are provided feedback about their proposals. In all cases, reviews are treated as confidential documents. Verbatim copies of reviews, excluding the names of the reviewers or any reviewer-identifying information, are sent to the Principal Investigator/Project Director by the Program Officer. In addition, the proposer will receive an explanation of the decision to award or decline funding.

VII. AWARD ADMINISTRATION INFORMATION

A. Notification of the Award

Notification of the award is made to *the submitting organization* by a Grants Officer in the Division of Grants and Agreements. Organizations whose proposals are declined will be advised as promptly as possible by the cognizant NSF Program administering the program. Verbatim copies of reviews, not including the identity of the reviewer, will be provided automatically to the Principal Investigator. (See Section VI.B. for additional information on the review process).

B. Award Conditions

An NSF award consists of: (1) the award notice, which includes any special provisions applicable to the award and any numbered amendments thereto; (2) the budget, which indicates the amounts, by categories of expense, on which NSF has based its support (or otherwise communicates any specific approvals or disapprovals of proposed expenditures); (3) the proposal referenced in the award notice; (4) the applicable award conditions, such as Grant General Conditions (GC-1)*; or Research Terms and Conditions* and (5) any announcement or other NSF issuance that may be incorporated by reference in the award notice. Cooperative agreements also are administered in accordance with NSF Cooperative Agreement Financial and Administrative Terms and Conditions (CA-FATC) and the applicable Programmatic Terms and Conditions. NSF awards are electronically signed by an NSF Grants and Agreements Officer and transmitted electronically to the organization via e-mail.

*These documents may be accessed electronically on NSF's Website at http://www.nsf.gov/awards/managing/award_conditions.jsp?org=NSF. Paper copies may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from nsfpubs@nsf.gov.

More comprehensive information on NSF Award Conditions and other important information on the administration of NSF awards is contained in the NSF *Award & Administration Guide* (AAG) Chapter II, available electronically on the NSF Website at http://www.nsf.gov/publications/pub_summ.jsp?ods_key=aag.

Special Award Conditions:

Grantees may be requested to present a technology translation plan via a webinar format to NSF program officer staff between 12 and 18 months after the start of the award. Details will be provided after award.

During the course of the award, a grantee meeting will be held in conjunction with a technology showcase to connect with potential industry collaborators and/or private-sector investors. The showcase is an opportunity to demonstrate a prototype and/or present a poster about the work supported under the AIR award. Applicants should budget travel for the PI and one student or post-doc to attend (approximately $2,500 per person).

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 http://www.nsf.gov/publications/pub_summ.jsp?ods_key=aag.

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:

- Barbara H. Kenny, Program Director, telephone: (703) 292-4667, email: bkenny@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 provide funding for special assistance or equipment to enable persons with disabilities to work on NSF-supported projects. See Grant Proposal Guide Chapter II, Section D.2 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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