Partnerships for Innovation (PFI)

PROGRAM SOLICITATION
NSF 08-583

REPLACES DOCUMENT(S):
NSF 06-550

National Science Foundation

Directorate for Engineering
  Industrial Innovation and Partnerships

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

October 31, 2008

October 31, Annually Thereafter

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

December 31, 2008

December 31, Annually Thereafter

REVISION NOTES

The composition of the academic institutional base of the partnerships and other program requirements underwent substantial change. This solicitation should be reviewed in its entirety as essentially all sections underwent revision. Proposers should carefully read the sections on:

- Eligibility Information,
- Budgetary Information,
- Supplementary Documents, and
- Additional Review Criteria.

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

Partnerships for Innovation (PFI)

Synopsis of Program:

The goals of the Partnerships for Innovation Program are to: 1) stimulate the transformation of knowledge created by the research and education enterprise into innovations that create new wealth; build strong local, regional and national economies; and improve the national well-being; 2) broaden the participation of all types of academic institutions and all citizens in activities to meet the diverse workforce needs of the national innovation enterprise; and 3) catalyze or enhance enabling infrastructure that is necessary to foster and sustain innovation in the long-term. To develop a set of ideas for pursuing these goals, this competition will support 12-15 promising partnerships among academe, the private sector, and state/local/ federal government that will explore new approaches to support and sustain innovation.

Cognizant Program Officer(s):

- Sara B. Nerlove, PFI Program Director, Partnerships for Innovation Program, Rm 579, telephone: (703) 292-7077, fax: (703) 292-9057, email: snerlove@nsf.gov

- Glenn Larsen, IIP Program Director, Directorate for Engineering: Division of Industrial Innovation and Partnerships (IIP), Rm 577, telephone: (703) 292-4706, email: glarsen@nsf.gov

- Donald Senich, Section Head, Academic Programs, Directorate for Engineering; Division of Industrial Innovation and Partnerships (IIP), telephone: (703) 292-7082, email: dsenich@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
- 47.078 --- Office of Polar Programs
- 47.079 --- Office of International Science and Engineering
- 47.080 --- Office of Cyberinfrastructure

Award Information

Anticipated Type of Award: Standard Grant or Continuing Grant

Estimated Number of Awards: 12 to 15

Anticipated Funding Amount: $9,500,000 subject to the availability of funds and quality of proposals. Awards may be up to $600,000 with an award duration of two or three years.

Eligibility Information

Organization Limit:

Proposals may only be submitted by the following:

- **Accredited Degree Granting Institutions:** U.S. universities and two- and four-year colleges located in the U.S., its territories, or possessions.

    At least one PFI graduated awardee must participate in the PFI proposal. See Additional Eligibility Information for the primary units of PFI partnerships and the requirements for building partnerships.

PI Limit:

A senior institutional administrator (dean or higher) at the lead institution must serve as Co-PI or PI. The senior administrator 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:

Academic institutions with graduated PFI awards are limited to two proposals related to each graduated PFI award, one in each of the following capacities:

- Submission of one proposal as the lead institution
- Participation as a subawardee on one proposal.

Limit on Number of Proposals per PI: 1

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 Applicable

- **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/bfa/dias/policy/docs/grantsgovguide.pdf)

B. Budgetary Information

- **Cost Sharing Requirements:** Cost Sharing is not required under this solicitation.

- **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. proposer's local time)*:*

October 31, 2008

October 31, Annually Thereafter

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

    December 31, 2008

    December 31, Annually Thereafter

Proposal Review Information Criteria

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

Award Administration Information

Award Conditions: Standard NSF award conditions apply.

Reporting Requirements: Additional reporting requirements apply. Please see the full text of this solicitation for further information.

TABLE OF CONTENTS

I. INTRODUCTION

Research, education, and innovation enterprises are increasingly interconnected, and global. Global collaboration among scientists, engineers, educators, industry and governments can speed the process of innovation--the transformation of scientific and technological advances into new products, processes, systems, and services--and, in its wake, can produce new jobs, create wealth, and improve the standard of living and quality of life worldwide. Innovation has created significant tangible benefits to society, including improved healthcare, transportation, and computer-communications capacities.

Within the United States, innovation in science and technology has been the dominant source of productivity gains and new enterprises for over half a century. Much of the capacity for innovation in the U.S. has resulted from federal funding of research. Since its inception, the National Science Foundation (NSF) has enabled innovation through its support of discovery and the production of a scientifically and technologically knowledgeable workforce. More recently, NSF has established centers and developed other partnership programs that facilitate knowledge and technology transfer to the private sector. Since businesses and industries today are more dependent on research and technology advances and since the product development cycle in all industry sectors is more rapid than before, NSF's traditional roles are more proximate and relevant to economic development than at any time in our past.

In the Partnerships for Innovation program, NSF seeks to stimulate and capitalize on innovation by catalyzing partnerships among colleges and universities, the private sector, and federal, state, and local governments. Key factors in the innovation enterprise include the creation of, and access to new knowledge; a scientifically and technologically literate workforce prepared to capitalize on new knowledge in a global context; and an infrastructure that enables innovation and collaboration. For the purposes of this program, innovation explicitly extends both to developing people and tools. Academic institutions which are traditionally recipients of

NSF's support play an essential role in generating new knowledge and creating a scientifically and technologically literate workforce.

Some of the nation's colleges and universities have a long tradition of active research and education programs and strong connections to the private sector, and many have offices responsible for enabling knowledge transfer and stimulating the growth of new businesses. However, few academic institutions have all of the necessary capacity to provide the infrastructure to foster innovation, especially those institutions that have participated less actively in Federal R&D programs.

Partnerships are an important means for developing an innovation capability that links new knowledge and a knowledge-rich workforce to economic growth and other societal benefits. Partnerships involving various combinations of colleges and universities, private sector firms, and local, state, and federal governments, have the potential to increase the value of each of the partners' portfolios, and to mobilize innovation in a systemic manner. For example, private sector firms gain access to new knowledge and a workforce that can capitalize on it; academe gains financial support, the ability to capitalize on intellectual property, and access to real-world problems for field training; and local and state governments gain sustainable regional and local economic development activities. Students moving into the workplace can facilitate the innovation process by bringing with them education in science and engineering, in management, and/or in myriad aspects of the innovation enterprise; the ability to work in teams; energy; enthusiasm; and fresh ideas.

II. PROGRAM DESCRIPTION

The Partnerships for Innovation (PFI) program is intended to forge connections between new knowledge created in the discovery process and learning and innovation, while broadening the participation of people and institutions in NSF activities. The PFI program defines innovation as the transformation of knowledge into products, processes, systems, and services that are novel and of economic value to society. The goals of the PFI program are as follows:

- Stimulate the transformation of knowledge created by the research and education enterprise into innovations that create new wealth; build strong local, regional and national economies; and improve the national well-being;
- Broaden the participation of all types of academic institutions and all citizens in NSF activities to more fully meet the diverse workforce needs of the national innovation enterprise; and
- Catalyze or enhance enabling infrastructure necessary to foster and sustain innovation in the long-term.

In order to accomplish these goals, proposals may include any one or a combination of the following activities: (1) research, knowledge transfer, and/or commercialization; (2) workforce education and training; and (3) establishing the infrastructure to accomplish or enable innovation. Proposals should seek to relate the activities that are planned to innovation and to increased capabilities for continued innovation as the ultimate outcomes. Innovation should be the proposed outcome, not the formation of partnerships. Partnerships are a means to an end. They constitute the assembling of the best set of players possible to achieve the goals of the project. Proposals should also have a plan to ensure that the innovation can be sustained over the long term. Appropriate activities for projects in the program might also include the planning and/or implementation of new models for innovation that connect scientific and technological discovery to use through knowledge transfer; education and training activities that explicitly address the workforce needs of the innovation enterprise; and the development and deployment of new tools or mechanisms that support the innovation infrastructure. Proposals may focus on creating a critical level of innovation activity in a technology area, an industry sector, or a geographical region. Partnership teams may include social scientists with expertise in areas related to organizing and managing innovation, including knowledge creation and transfer, joint ventures, diffusion of innovation, management, marketing, finance, and entrepreneurship. Partnership teams may also include individuals who can provide practical business or marketing expertise since many emerging and small businesses fail for lack of these capabilities. Because many innovation issues should now be addressed in a global context, international collaborations that advance the goals of the PFI program are encouraged.

The outcomes for proposed activities must foster economic and/or societal well-being that can be self-sustaining in the long term. In all partnerships, NSF seeks to optimize the participation of the private sector to foster innovation-driven growth and ensure appropriate workforce development activities. Since innovation is critically dependent upon a diverse workforce poised to innovate, partnerships led by and involving academic institutions of all types are essential for the program's success. The participation of institutions that serve groups currently underrepresented in the science, engineering and technological workforce, as well as those institutions that serve regions and or sectors not yet fully participating in the innovation enterprise, is strongly encouraged. NSF seeks to enhance the roles such institutions play in contributing to and participating in innovation.

Partnerships for Innovation may:

- Capitalize upon the shared interests of regional academic institutions, local and state governments, and the private sector to contribute to the innovation enterprise;
- Strengthen the capabilities of all academic institutions to contribute to the innovation process;
- Incorporate international collaborative activities when appropriate, especially the exposure of U.S. students and early-career professionals to research and innovation in a global context;
- Enable technological innovation through the synergistic development, integration, and transfer of new knowledge to partners that can create economic or societal well-being;
- Enable small- and medium-sized businesses to utilize the resources and capabilities of academic institutions;
- Promote and enable innovation as a specific goal by increasing the scientific and technological capabilities of the workforce;
- Involve research into the effectiveness of modes of organizing, managing, and/or providing infrastructure for innovation; and
- Create and validate new generalized models that integrate research and education capacity to create a critical level of technological innovation in a state or a region.

As in the past, this PFI competition supports the planning and early implementation of new activities designed to sustain innovation in the long-term, but this competition emphasizes the enhancement of the valuable experiences, partnership relations, and accomplishments of successful PFI and other NSF-supported partnership relations and projects. This emphasis is intended to enable the acceleration of innovation and the attainment of a new level of economic impact.

What is distinctive about this competition is that it will emphasize building sustainable partnerships by building on the PFI community's accomplishments. This can be done by providing an opportunity to choose one of the following configurations:

- Two accomplished PFI teams partner with each other;
- One accomplished PFI team partners with a second team which has accomplishments emanating from NSF's investments in other partnership programs, facilities, and laboratories; or
- One accomplished PFI team partners with a team from an institution which has never been a PFI awardee.

The last option should include a strong mentoring and institutional capacity-building component. Participation by minority serving institutions, community and technical colleges, and non-research intensive institutions are particularly encouraged. In the contexts of

these three options multi-institutional connectivity and access are emphasized. So too is the multidisciplinary nature of partnership not only across institutions but also within institutions.

PFI proposals must include a resource plan that describes how the partnership will transition the project from initial NSF seed funding to self-sustainability. The plan should detail how the partnership expects to succeed without additional NSF funding at the conclusion of the award.

PFI Partners: Typically, each partnership proposal is anticipated to have the following basic organizational structure: Two academic institutions and one private sector partner. One academic institution will be the lead institution and the other academic institution will be a subawardee. See section on Additional Eligibility Information for further information about the organizational components that can form the academic institutional base of PFI partnerships under this solicitation.

Proposals can have additional partners which might include other academic institutions, public sector institutions, and for-profit and not-for-profit private sector organizations. The range of possible partners is meant to be broad—in the private sector, businesses may be large or small or they may be law firms or foundations; in the public sector, institutions include non-governmental organizations (NGOs) as well as Federal laboratories. Partnerships that include state and local government entities are strongly encouraged as are partnerships that include international partners which advance the goals of the PFI program.

III. AWARD INFORMATION

NSF will make 12-15 awards totaling approximately $9,500,000 subject to the availability of funds and quality of proposals. Awards may be up to $600,000 with award durations of two or three years. *The budget request for all proposals, whether submitted as collaborative or single administrative units, cannot exceed $600,000.*

IV. ELIGIBILITY INFORMATION

Organization Limit:

Proposals may only be submitted by the following:

- **Accredited Degree Granting Institutions:** U.S. universities and two- and four-year colleges located in the U.S., its territories, or possessions.

  At least one PFI graduated awardee must participate in the PFI proposal. See Additional Eligibility Information for the primary units of PFI partnerships and the requirements for building partnerships.

PI Limit:

A senior institutional administrator (dean or higher) at the lead institution must serve as Co-PI or PI. The senior administrator 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:

Academic institutions with graduated PFI awards are limited to two proposals related to each graduated PFI award, one in each of the following capacities:

- Submission of one proposal as the lead institution
- Participation as a subawardee on one proposal.

Limit on Number of Proposals per PI: 1

Additional Eligibility Info:

The table below shows the units that form the academic institutional base of PFI partnerships under this solicitation. The three columns depict the primary units that can be assembled to construct the PFI partnership. Proposals must propose a partnership that constitutes one of these organizational types:

- Type I – two units from column A.
- Type II - one unit from column A and another from B.
- Type III – one unit from column A and another from C.

Column A	Column B	Column C
PFI Graduated Grantees [1]	Other NSF Partnerships: Active [2] and Graduated [3] Grantees	New Participant Institutions[4] which have *never been PFI Grantees*

Partnership building requirements:

- NSF partnerships units for column B may include grantees from a Science and Technology Center (STC), Engineering Research Center (ERC), Industry/University Cooperative Research Center (I/UCRC), Nanoscale Science and Engineering Center (NSEC), National Nanotechnology Infrastructure Network (NNIN), National Research Initiative (NRI), Grant Opportunities for Academic Liaison with Industry (GOALI), Small Business Technical Transfer Research (STTR) - Phase II, and other grantees from NSF programs involving partnerships/multiple organizations.
- Type II partnerships require A to be the lead and B (if from a different institution) to be the subawardee.
- Type III partnerships allow A or C to be the lead, while the other becomes the subawardee.

[1] A graduated PFI grantee has had a PFI award that has past its expiration date and for which NSF has

accepted the final report. In addition, all active PFI grantees for which a final report will have been accepted by NSF no later than April 30, 2009 are also eligible to submit proposals as graduated PFI grantees under this solicitation.

[2] An active grantee involved in other NSF partnership opportunities is defined as one which is in the implementation phase of the project(s).

[3] A graduated grantee involved in other NSF partnership opportunities is defined as a completed award with an award expiration date within the last decade.

[4] Participation by minority serving institutions, community and technical colleges and other non-research intensive institutions is encouraged.

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 NSF to screen the proposals with respect to the eligibility requirements, to identify correctible issues, and to categorize proposals so as to prepare for the proposal review process.

Enter the requested core Letter of Intent information as prompted by FastLane. Additionally, complete these data fields for the LOI:

1. Proposal structure
2. Partners
3. Profile information

The following information must be included for each data field:

Proposal structure

- Project Title & Brief Description of Proposed Activity & Submitting Department(s)/Organizational Unit(s).
- Proposal Structure Option: Type I (A:A), Type II (A:B), Type III (A:C or C:A),
- Proposed PIs/Co-PIs and key personnel on subawards (each categorized as affiliated with A, B, or C)
  - Names
  - Title and department
  - PFI or other NSF partnership project experience including reference to award number(s)
  - Designation of senior administrator(s), role, and time commitment

Partners

- **Type I, II, or III Academic Partners--**list & briefly describe the role of each on the project. Include the institution's name, state, status on proposal (submitting institution - lead or subawardee), and, as appropriate, associated prior PFI project (award no./title/graduation date), or associated NSF partnership project (award no./title/active or graduate; date of expiration).
- **Core Private Sector Partner(s)**—list & briefly describe the role of each on the project. Include each organization's name, and state; it is understood that there might be some modification in this list of partners by the time of submission.
- **Core Public Sector Partner(s)--**list & briefly describe role of each on the project. Include each organization's name, and state; it is understood that there might be some modification in this list of partners by the time of submission.
- **Other Core Partners**--list & briefly describe the role of each on the project. Include each organization's name and state; it is understood that there might be some modification in this list of partners by the time of submission.

Profile information

- **Estimate of Project Focus**: Categories (in percentages, total =100):
  Research & Knowledge Transfer (__%);
  Infrastructure for Innovation (__%),
  Workforce Education/Training (STEM & Entrepreneurial Enterprise) (__%)

- **Estimate of Project Content** (in percentages, total = 100)
  Biotechnology/Medicine (__%),
  Economic Development (__%),
  Entrepreneurship/Technological Innovation (__%),
  Environment/Natural Resources (__%),
  Energy (__%),
  Health Care (__%),
  Information Tech/Communications/Software (__%),
  Manufacturing (__%),
  Materials (__%),
  Nanotechnology (__%),
  Opto/Micro-electronics (__%),
  Security/Defense (__%),
  Other, specify one or more categories (__%)

- **Locus of Impact**--indicate all that apply: Town/City, State, Region, National, International (specify country or countries).

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:

- Sponsored Projects Office (SPO) Submission is required when submitting Letters of Intent
- A Minimum of 0 and Maximum of 4 Other Senior Project Personnel are allowed
- A Minimum of 0 and Maximum of 4 Other Participating Organizations are allowed
- Proposal structure is required when submitting Letters of Intent
- Identification of partners is required when submitting Letters of Intent
- Profile information 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 pubs@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/bfa/dias/policy/docs/grantsgovguide.pdf). 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 pubs@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 the NSF FastLane system. Chapter II, Section D.3 of the Grant Proposal Guide provides additional information on collaborative proposals.

Proposal Content

The following instructions supplement or deviate from the GPG and NSF Grants.gov Application Guide Guidelines.

Of extreme importance is that the solicitation number (see the front cover of this document) be placed on the NSF Cover Sheet. Failure to submit this information may lead to a return without review.

Project Summary (one-page limit)

Provide the title of the proposed Partnership for Innovation and the name of the PI. Identify the lead institution(s), and/or, as appropriate, the main subawardee institution including the name of the project director of the subawardee, as well as other partner organizations vital to the success of the PFI partnership. Provide a summary of the proposed partnership including its rationale, vision, distinguishing features and proposed activities to enable innovation. The summary must also clearly address in separate statements (within the one-page limit): (1) the intellectual merit of the proposed activity; and (2) the broader impacts resulting from the proposed activity. Where appropriate the summary should include statements describing potential economic and societal impact.

The Project Description (15-page limit)

The project description must include these subsections.

Narrative Description, Including Information About the Senior Institutional Administrator Serving as Co-PI or PI (suggested up to eight pages): The narrative must describe how the proposed activity will contribute toward realization of the goals of the Partnerships for Innovation program, especially the activities that stimulate and foster economic and/or societal well-being. It must also describe the partnership's rationale, goals, and implementation plan to assure sustainability. Clearly describe how all partner organizations are necessary to the innovation goals of the partnership. A description of any related activities by the proposer or others, both historical and current, that are similar to those being proposed and an indication of success of various similar approaches should be provided. This section should also provide an indication of knowledge of the published literature on innovation and on industry-academe-government partnerships. Proposals based on existing partnerships must describe how the proposed effort will add value, change or enhance ongoing activities.

Innovation Outcomes - Including Intellectual Property (IIP) (suggested up to two pages): Describe plans to monitor and assess progress toward realizing the goals of the Partnerships for Innovation program and related outcomes that foster innovation. Describe how IP issues such as patents, copyrights, trademarks, and trade secrets are to be handled. Identify participants responsible for IP issues in relevant organizations. Consider IP issues that will be a future obstacle to cooperative research between the PFI participants and where the funds will come from to pay for patent filings and similar fees. (A formal agreement involving all relevant partners must be provided as an addendum prior to award.)

Management Plan: Partnership Roles, Responsibilities, Resources, and Commitments – (suggested up to five pages). Provide a narrative description of the coordination of the respective roles, responsibilities, and resources of the core partners and how their efforts will be coordinated to meet the goals of the project. A schematic of the anatomy of the partnership may be provided under Supplementary Documents.

Supplementary Documents

The following information must be provided as supplementary documents in the following order:

1. *List of Partnership Organizations and Personnel. (five page limit).* Provide a list of all partnership organizations subdivided into the following categories: academic institutions, private sector organizations, state and local governments, government laboratories, and others. In each category, list participating organizations alphabetically. Provide a list of each organization's senior personnel participating in the PFI Partnership. For each of the personnel representing academic institutions, include the department(s) and/or school(s) with which the individual is associated.
2. *Letters of Commitment.* Letters of commitment from each of the partner organizations for the proposed effort must be

provided on the organization's letter head, signed by the appropriate institutional or organizational representative. These must be scanned into the Supplementary Docs module in FastLane or Grants.gov.

3. *Organizational/Role Diagram.* This is a type of organizational chart that also depicts the roles to be played by each participating organization. This section gives the proposer the opportunity to provide a schematic depicting the anatomy of the partnership.

4. *Proposed Resource Plan for Sustainability.* This plan describes how the partnership will transition the project from initial NSF seed funding so that it becomes self-sustaining.

5. *Letter of Support (limit of 5 letters).* Letters of support (to be distinguished from letters of commitment). Be selective-- content should provide meaningful data from stakeholders (that are not partners) regarding the potential successful outcomes of the project. These must be scanned into the Supplementary Docs module in FastLane or Grants.gov.

6. If relevant to the proposal and available by the time of submission, provide a draft of an IP formal agreement involving all relevant partners. If relevant to the proposal and not yet available, a formal IP agreement involving all relevant partners must be provided as an addendum prior to award.

7. *Suggested Reviewers.* Provide a list of appropriate or inappropriate reviewers for the proposed Partnership for Innovation (use FastLane module).

B. Budgetary Information

Cost Sharing: Cost sharing is not required under this solicitation.

Other Budgetary Limitations:

Budget Limitations: Proposed Partnerships may request from NSF, total budgets of up to $600,000 for award durations of two or three years. NSF will not provide salary support for personnel employed by Federal Agencies or Federally Funded Research and Development Centers.

Travel: Costs for travel for the PI for one trip per year to report on progress or participate in PFI workshops should be included in the requested budget. Additional travel costs for partners or other participants on the project to travel for the same or similar purposes may be included.

C. Due Dates

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

    October 31, 2008

    October 31, Annually Thereafter

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

    December 31, 2008

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D. FastLane/Grants.gov Requirements

- **For Proposals Submitted Via FastLane:**

    Detailed technical instructions regarding the technical aspects of preparation and submission via FastLane are 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.

    Submission of Electronically Signed Cover Sheets. The Authorized Organizational Representative (AOR) must electronically sign the proposal Cover Sheet to submit the required proposal certifications (see Chapter II, Section C of the Grant Proposal Guide for a listing of the certifications). The AOR must provide the required electronic certifications within five working days following the electronic submission of the proposal. Further instructions regarding this process are available on the FastLane Website at: https://www.fastlane.nsf.gov/fastlane.jsp.

- **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. The Grants.gov's Grant Community User Guide is a comprehensive reference document that provides technical information about Grants.gov. Proposers can download the User Guide as a Microsoft Word document or as a PDF document. The Grants.gov User Guide is available at: http://www.grants.gov/CustomerSupport. In addition, the NSF Grants.gov Application Guide provides additional technical guidance regarding 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.

VI. NSF PROPOSAL PROCESSING AND REVIEW PROCEDURES

Proposals received by NSF are assigned to the appropriate NSF program where they will be reviewed if they meet NSF proposal preparation requirements. 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 who are experts in the particular fields represented by the proposal. These reviewers are selected by Program Officers charged with the 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.

A. NSF Merit Review Criteria

All NSF proposals are evaluated through use of the two National Science Board (NSB)-approved merit review criteria: intellectual merit and the broader impacts of the proposed effort. In some instances, however, NSF will employ additional criteria as required to highlight the specific objectives of certain programs and activities.

The two NSB-approved merit review criteria are listed below. The criteria include considerations that help define them. These considerations are suggestions and not all will apply to any given proposal. While proposers must address both merit review criteria, reviewers will be asked to address only those considerations that are relevant to the proposal being considered and for which the reviewer is qualified to make judgements.

What is the intellectual merit of the proposed activity?
How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields? How well qualified is the proposer (individual or team) to conduct the project? (If appropriate, the reviewer will comment on the quality of the prior work.) To what extent does the proposed activity suggest and explore creative, original, or potentially transformative concepts? How well conceived and organized is the proposed activity? Is there sufficient access to resources?

What are the broader impacts of the proposed activity?
How well does the activity advance discovery and understanding while promoting teaching, training, and learning? How well does the proposed activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.)? To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks, and partnerships? Will the results be disseminated broadly to enhance scientific and technological understanding? What may be the benefits of the proposed activity to society?

Examples illustrating activities likely to demonstrate broader impacts are available electronically on the NSF website at: http://www.nsf.gov/pubs/gpg/broaderimpacts.pdf.

NSF staff also will give careful consideration to the following in making funding decisions:

Integration of Research and Education
One of the principal strategies in support of NSF's goals is to foster integration of research and education through the programs, projects, and activities it supports at academic and research institutions. These institutions provide abundant opportunities where individuals may concurrently assume responsibilities as researchers, educators, and students and where all can engage in joint efforts that infuse education with the excitement of discovery and enrich research through the diversity of learning perspectives.

Integrating Diversity into NSF Programs, Projects, and Activities
Broadening opportunities and enabling the participation of all citizens -- women and men, underrepresented minorities, and persons with disabilities -- 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.

Additional Review Criteria:

Reviewers will be asked to extensively review the documented qualifications of the PIs, Co-PIs, and other personnel on the PFI project team. Preference will be given to proposals staffed with personnel with PFI experience from graduated PFI awards. A team from an institution which is a new participant to the PFI program must team with a partner that has documented PFI PI or Co-PI experience.

Other additional review criteria are as follows:

- Responsiveness of the proposal to the goals of the Partnerships for Innovation program as described in the synopsis;
- Potential of the proposed PFI Partnership to foster and sustain innovation in the long-term;
- The potential impact of the proposed innovation activities on the economic and/or societal well-being of the region;
- The degree to which the institutions that serve groups currently underrepresented in the science, engineering and technological workforce are involved in the proposed innovation activity, especially in proposed innovation activity involving lead institutional or subawardee participants new to the PFI program;
- The degree to which institutions that serve regions and/or sectors not yet fully participating in the innovation enterprise contribute to the proposed activities;
- The partnership has an effective resource plan for sustainability without additional NSF funding at the conclusion of the project;
- There is enough potential university support, faculty, and facilities involved to build a viable partnership;
- The degree to which the proposed activity will stimulate new innovation opportunities for the partner organizations; and
- If the project involves international collaboration, the value of the proposed international activities in advancing the goals of the PFI program.

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

- Effectiveness of the management plan;
- Effectiveness of the resource plan for sustainability;
- Geographic distribution and diversity of lead institutions;
- Likely distribution of societal impacts; and
- Distribution of technology or industry sectors served.

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 formulate a recommendation to either support or decline each proposal. 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 is striving to be able to tell applicants whether their proposals have been declined or recommended for funding within six months. The time interval begins on the deadline or target date, or receipt date, whichever is later. The interval ends when the Division Director accepts the Program Officer's recommendation.

A summary rating and accompanying narrative will be completed and submitted by each reviewer. In all cases, reviews are treated as confidential documents. Verbatim copies of reviews, excluding the names of the reviewers, 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.

In all cases, 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 and 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.

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 letter, 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 letter; (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 letter. 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 pubs@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.

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 at least 90 days before the end of the current budget period. (Some programs or awards require more frequent project reports). Within 90 days after expiration of a grant, the PI also is required to submit a final project report.

Failure to provide the required annual or final project reports will delay NSF review and processing of any future funding increments as well as any pending proposals for that PI. 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 FastLane, for preparation and submission of annual and final project reports. Such reports provide information on activities and findings, project participants (individual and organizational) publications; and, other specific products and contributions. PIs will not be required to re-enter information previously provided, either with a proposal or in earlier updates using the electronic system. Submission of the report via FastLane constitutes certification by the PI that the contents of the report are accurate and complete.

NSF also requires PFI awardees to collect and submit to NSF data on indicators of progress, outcome, and impact through a secure website to the program's indicator database. NSF provides data definitions and guidelines for assembling and submitting the data in conjunction with annual reports.

VIII. AGENCY CONTACTS

General inquiries regarding this program should be made to:

- Sara B. Nerlove, PFI Program Director, Partnerships for Innovation Program, Rm 579, telephone: (703) 292-7077, fax: (703) 292-9057, email: snerlove@nsf.gov

- Glenn Larsen, IIP Program Director, Directorate for Engineering: Division of Industrial Innovation and Partnerships (IIP), Rm 577, telephone: (703) 292-4706, email: glarsen@nsf.gov

- Donald Senich, Section Head, Academic Programs, Directorate for Engineering; Division of Industrial Innovation and Partnerships (IIP), telephone: (703) 292-7082, email: dsenich@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, MyNSF (formerly the Custom News Service) 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 Regional 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. MyNSF also is available on NSF's Website at http://www.nsf.gov/mynsf/.

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

Partnership for Innovation Awards

A complete list of all current Partnerships for Innovation awards, with project descriptions is available at http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5261. This list is not to be interpreted to cover the entire range of activities or goals that can be proposed.

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 40,000 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 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: pubs@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
Division of Administrative Services
National Science Foundation
Arlington, VA 22230

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