Innovation Corps Program (I-Corps)

PROGRAM SOLICITATION
NSF 11-560

National Science Foundation

Directorate for Engineering
 Industrial Innovation and Partnerships

Office of Cyberinfrastructure

Directorate for Mathematical & Physical Sciences

Directorate for Social, Behavioral & Economic Sciences

Directorate for Computer & Information Science & Engineering

Directorate for Geosciences

Directorate for Biological Sciences

Directorate for Education & Human Resources

Submission Window Date(s) (due by 5 p.m. proposer's local time)**:**

August 17, 2011 - September 09, 2011

October 01, 2011 - December 15, 2011

October 1 - December 15, Annually Thereafter

January 01, 2012 - March 15, 2012

January 1 - March 15, Annually Thereafter

April 01, 2012 - June 15, 2012

April 1 - June 15, Annually Thereafter

July 01, 2012 - September 15, 2012

July 1 - September 15, Annually Thereafter

IMPORTANT INFORMATION AND REVISION NOTES

A revised version of the *NSF Proposal & Award Policies & Procedures Guide* (PAPPG), NSF 11-1, was issued on October 1, 2010 and is effective for proposals submitted, or due, on or after January 18, 2011. Please be advised that the guidelines contained in NSF 11-1 apply to proposals submitted in response to this funding opportunity.

Data Management Plan: The PAPPG contains a clarification of NSF's long standing data policy. All proposals must describe plans for data management and sharing of the products of research, or assert the absence of the need for such plans. FastLane will not permit submission of a proposal that is missing a Data Management Plan. The Data Management Plan will be reviewed as part of the intellectual merit or broader impacts of the proposal, or both, as appropriate. Links to data management requirements and plans relevant to specific Directorates, Offices, Divisions, Programs, or other NSF units are available on the NSF website at: http://www.nsf.gov/bfa/dias/policy/dmp.jsp. See Chapter II.C.2.j of the GPG for further information about the implementation of this requirement.

Postdoctoral Researcher Mentoring Plan: As a reminder, each proposal that requests funding to support postdoctoral researchers must include, as a supplementary document, a description of the mentoring activities that will be provided for such individuals. Please be advised that if required, FastLane will not permit submission of a proposal that is missing a Postdoctoral Researcher Mentoring Plan. See Chapter II.C.2.j of the GPG for further information about the implementation of this requirement.

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

 Innovation Corps Program (I-Corps)

Synopsis of Program:

The National Science Foundation (NSF) seeks to develop and nurture a national innovation ecosystem that builds upon fundamental research to guide the output of scientific discoveries closer to the development of technologies, products and processes that benefit society.

In order to jumpstart a national innovation ecosystem, NSF is establishing the NSF Innovation Corps (NSF I-Corps). The NSF I-Corps' purpose is to identify NSF-funded researchers who will receive additional support - in the form of mentoring and funding - to accelerate innovation that can attract subsequent third-party funding.

The purpose of the NSF I-Corps grant is to give the project team access to resources to help determine the readiness to transition technology developed by previously-funded or currently-funded NSF projects. The outcome of the I-Corps projects will be threefold: 1) a clear go/no go decision regarding viability of products and services, 2) should the decision be to move the effort forward, a transition plan to do so, and 3) a technology demonstration for potential partners.

WEBINAR: A webinar will be held on the first Tuesday of every month, beginning in August 2011 to answer questions about this program.   Details will be posted on the I-Corps website 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.

- Errol Arkilic, telephone: 703-292-8095, email: earkilic@nsf.gov

- Rathindra DasGupta, telephone: 703-292-8353, email: rdasgupt@nsf.gov

- Richard Voyles, telephone: 703-292-4541, email: rvoyles@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
- 47.080 --- Office of Cyberinfrastructure

Award Information

Anticipated Type of Award: Standard Grant

Estimated Number of Awards: 1 to 25 Up to 25 in FY 2011; duration of each award is 6 months. 100 in FY 2012; duration of each award is 6 months.

Anticipated Funding Amount: $50,000 to $1,250,000 $1.25 million in FY 2011. The anticipated funding amount is $5 million in FY 2012, pending availability of funds. Award size will not exceed $50,000.

Eligibility Information - See Section IV for additional information

Organization Limit:

Proposals may only be submitted by the following:

- Universities and Colleges - 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. Such organizations also are referred to as academic institutions.
- Other Federal Agencies and Federally Funded Research and Development Centers (FFRDCs): Contact the appropriate program before preparing a proposal for submission.

Principal Investigator (PI) Limit:

None Specified

Limit on Number of Proposals per Organization:

None Specified

Limit on Number of Proposals per PI:

A PI is limited to one I-Corps proposal during each submission window.

Proposal Preparation and Submission Instructions

A. Proposal Preparation Instructions

- **Letters of Intent:** Not Applicable

- **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/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:**

  Recovery of indirect costs (F&A) shall be limited to $5,000. As such, this program does require mandatory cost sharing, and, therefore, is an exception to NSF' cost sharing policy.

- **Other Budgetary Limitations:** Other budgetary limitations apply. Please see the full text of this solicitation for further information.

C. Due Dates

- **Submission Window Date(s)** (due by 5 p.m. proposer's local time)**:**

  August 17, 2011 - September 09, 2011

  October 01, 2011 - December 15, 2011

  October 1 - December 15, Annually Thereafter

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  April 01, 2012 - June 15, 2012

  April 1 - June 15, Annually Thereafter

  July 01, 2012 - September 15, 2012

  July 1 - September 15, 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: 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

America's prosperity has originated in part from the ability to capitalize economically on ground-breaking discoveries from science and engineering research. Simultaneously, a knowledgeable, creative workforce has maintained the country's global leadership in critical areas of technology. These important discoveries and capable workforce resulted from substantial, sustained investment in science and engineering. A strong capacity for leveraging fundamental scientific discoveries into powerful engines of innovation is essential to maintain our competitive edge in the future.

The National Science Foundation (NSF) supports fundamental research and education in science and engineering. NSF's dual role, unique among government agencies, results in new knowledge and tools as well as a capable, innovative workforce. These complementary building blocks of innovation have led to revolutionary technological advances and wholly new industries.

Through this initiative, NSF seeks to accelerate the development of new technologies, products and processes that arise from fundamental research. NSF investments will strategically strengthen the innovation ecosystem (http://www.nsf.gov/eng/iip/innovation.pdf) by addressing the challenges inherent in the early stages of the innovation process. This solicitation will support collaborations that are designed to overcome many of the obstacles in the path of innovation.

II. PROGRAM DESCRIPTION

The goals of this program are to spur translation of fundamental research, to encourage collaboration between academia and industry, and to train students to understand innovation and entrepreneurship. The purpose of the NSF I-Corps program is to identify NSF-funded researchers who will receive additional support - in the form of mentoring and funding - to accelerate the translation of knowledge derived from fundamental research into emerging products and services that can attract subsequent third-party funding.

The outcome of the I-Corps projects will be threefold: 1) a clear go/no go decision regarding viability of products and services, 2) should the decision be to move the effort forward, a transition plan to do so, and 3) a technology demonstration for potential partners.

The go/no go decision of the proposed effort will be made by the I-Corps team (that includes the Principal Investigator, the Entrepreneurial Lead, and the I-Corps Mentor) in consultation with the I-Corps Cognizant Program Directors.

Requirements:

Receipt of a Prior NSF Award: An NSF award (in a scientific or engineering field relevant to the proposed innovation) that is currently active or that has been active within five years from the date of the I-Corps proposal submission is required.

Team: An I-Corp team will need to be established prior to proposal submission. The I-Corps team will consist of three roles:

1. Entrepreneurial Lead.

2. I-Corps Mentor; and

3. Principal Investigator.

The **Entrepreneurial Lead** could be a Post-Doctoral scholar, graduate or other student with relevant knowledge of the technology and a deep commitment to investigate the commercial landscape surrounding the innovation. In rare circumstances, with approval of a cognizant NSF I-Corps Program Officer, it also could be the PI. The Entrepreneurial Lead should also be capable and have the will to support the transition of the technology, should the I-Corps project demonstrate the potential for commercial viability.

The **I-Corps Mentor** will typically be an experienced or emerging entrepreneur with proximity to the institution and experience in transitioning technology out of Academic labs. The I-Corps Mentor must be a third-party resource and may be recommended by the proposing institution or may be a member of the NSF-supported I-Corps network which is being put together at this time. **More detailed information on the I-Corps network will be available during the scheduled WEBINARS.** The I-Corps Mentor will be responsible for guiding the team forward and tracking progress through regular communication with the Cognizant NSF I-Corps program director.

The **Principal Investigator** will be responsible for overall grant management.

The approach to develop the technology disposition will be a structured hypothesis/validation approach. The Entrepreneurial Lead will be responsible for proceeding along a content-guided path to develop, over the course of the six month grant, a final technology disposition plan.

Commitment to pursue online curriculum: Each team must commit to pursuing a formal hypothesis-validation approach to identify and mitigate gaps in knowledge in the following seven areas:

1. Value Proposition of the proposed product or service

2. Customer/User use-case and pain point;

3. Demand Creation;

4. Channel Development;

5. Revenue Model;

6. Partnership Strategy; and

7. Resource Requirement.

NOTE: More detailed information on the on-line curriculum content will be available at the scheduled WEBINARS.

Online content establishing the process and progress tracking throughout the post-award effort will be hosted by NSF. The team's progress will be tracked through a closed Wiki environment accessible only by NSF and the team.

Expectations from the I-Corps Grant: Successful completion of the I-Corps grant is expected to contribute to one or more of the following:

- New start-up businesses

- Licensing

- SBIR proposals

- A business plan suitable for review by third-party investors

- Students prepared to be entrepreneurially competitive

- New curriculum development or improvement in current curricula

III. AWARD INFORMATION

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

IV. ELIGIBILITY INFORMATION

Organization Limit:

Proposals may only be submitted by the following:

- Universities and Colleges - 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. Such organizations also are referred to as academic institutions.
- Other Federal Agencies and Federally Funded Research and Development Centers (FFRDCs): Contact the appropriate program before preparing a proposal for submission.

Principal Investigator (PI) Limit:

None Specified

Limit on Number of Proposals per Organization:

None Specified

Limit on Number of Proposals per PI:

A PI is limited to one I-Corps proposal during each submission window.

Additional Eligibility Info:

Proposers must have an active NSF award or one that has been active within the previous five years from the date of submission of the I-Corps proposal in a science or engineering field relevant to the proposed innovation.

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

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

- Full proposals submitted via FastLane: Proposals submitted in response to this program solicitation should be prepared and submitted in accordance with the general guidelines contained in the NSF Grant Proposal Guide (GPG). The complete text of the GPG is available electronically on the NSF website at: http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpg.

Paper copies of the GPG may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by 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.

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.4 of the Grant Proposal Guide provides additional information on collaborative proposals.

Mandatory Communication with cognizant I-Corps Program Officer: PI(s) *must* contact one of the cognizant I-Corps program officers and receive prior written authorization to submit a proposal.

Cognizant I-Corps Program Officer(s):

- Errol Arkilic: earkilic@nsf.gov 703-292-8095
- Richard Voyles: rvoyles@nsf.gov 703-292-4541
- Rathindra (Babu) DasGupta: rdasgupt@nsf.gov 703-292-8353

PI(s) are *strongly encouraged* to discuss the commercial readiness of their effort with a Topic-specific program officer prior to contacting a cognizant I-Corps program officer. This will facilitate determining whether the proposed work is appropriate for I-Corps funding.

Topic-Specific Program Officer(s):

- BIO: Charles Liarakos: cliarako@nsf.gov 703-292-7904
- CISE: Richard Voyles: rvoyles@nsf.gov 703-292-4541
- EHR: Don Millard: dmillard@nsf.gov 703-292-4620
- ENG: Rathindra (Babu) DasGupta: rdasgupt@nsf.gov 703-292-8353
- GEO: David Verardo: dverardo@nsf.gov 703-292-8527
- MPS: Mary Galvin-Donoghue: mgalvind@nsf.gov 703-292-8562
- OCI: Irene Qualters: iqualter@nsf.gov 703-292-2339
- SBE: David Croson: dcroson@nsf.gov 703-292-7369

When contacting an I-Corps program officer, please provide the following information:

1. Composition of the team proposing to undertake the commercialization feasibility research (Entrepreneurial Lead, I-Corps Mentor and PI). If a Commercialization Mentor is needed, the NSF Program Director may assist in identifying one from the I-Corps network which is being put together at this time.

2. Relevant current/previous NSF awards (including award number, the program that funded the project, and NSF program manager for the project, if applicable).

3. Brief description of the potential commercial impact.

4. Brief description of the current commercialization plan.

Guide to Submission of an Innovation-Corps Proposal

Note: NSF will be utilizing the Rapid Response Research (RAPID) funding mechanism specified in Grant Proposal Guide (GPG) Chapter II.D.I for the submission and review of I-Corps proposals. The I-Corps RAPID proposal preparation and submission requirements specified below modify, or supplement the requirements specified in the NSF Grant Proposal Guide (GPG) or NSF Grants.gov Application Guide.

An I-Corps RAPID proposal consists of the following parts:

Cover Sheet:

The cover sheet is automatically generated by FastLane or Grants.gov based on information entered into the "Cover Sheet." Proposers must check the RAPID box on the Cover Sheet.

Project Summary:

The summary MUST have the following components:

1. A summary limited to 200 words addressing the Intellectual Merits of the proposed activity. No proprietary information should be included in the summary.

2. A summary limited to 200 words addressing the Broader Impacts of the proposed activity. Include information on how the innovation will enhance scientific and technological understanding. Describe the potential societal and commercial impact of the project.

3. A listing of "key" words. The key words/phrases should identify the areas of technical expertise in science, engineering, or education which are to be invoked in reviewing the proposal; and the areas of application that are the initial target of the technology.

Table of Contents:

The table of contents is automatically generated by FastLane or Grants.gov.

Project Description:

The project description is **limited to 5 pages**. The following information should be provided in the project description:

1. I-Corps Team (two page limit)

a. Briefly describe the I-Corps team and provide rationale for its formation, focusing on members' entrepreneurial expertise and relevance to the innovation effort, and members' experience in collaborating on previous projects.

2. Lineage of the Proposed Innovation (one page limit)

a. Provide a table of previous awards with managing program officer (if applicable) identified.

b. Briefly describe how this research has led the team to believe that a commercial opportunity exists for the effort moving forward.

3. **Description of the Potential Commercial Impact (one page limit)**

a. Provide a brief profile of a typical customer of the proposed innovation.

b. Describe the customer need that you believe will be met by the proposed innovation.

c. Describe how the customer currently meets those needs.

d. Your approach - What is the proposed innovation? How does it relate to the fundamental research already conducted under previous award(s)?

e. How much do you think a customer would pay for your solution?

4. Brief description of the project plan (one page limit)

a. Current Status - In what stage is the development: proof-of-principle, proof-of-concept, prototype (alpha, beta), etc...

b. Provide a brief description of the proof-of-concept or technology demonstration that will be provided at the end of the project.

References Cited

Provide a comprehensive listing of relevant reference sources, including patent citations.

Biographical sketches

A biographical sketch for each team member (two pages maximum per team member) must be provided, highlighting technical expertise and track records in successful technology and business development and be prepared in accordance with the requirements specified in the GPG. Exhaustive academic resumes are not appropriate.

Proposal Budget

Funding for the Innovation-Corps Program is $50,000 per award. Recovery of indirect costs (F&A) shall be limited to $5,000. To complete the I-Corps budget in FastLane:

- Include $45,000 on line G6 (Other Direct Costs)
- Include $5,000 on line I.1 (Indirect Costs)

To complete the I-Corps budget in Grants.gov:

- Include $45,000 in Field F.8 (Other Direct Costs)
- Include $5,000 in Field H (Indirect Costs)

The total amount of the request must not exceed $50,000.

Within the award amount of $50,000, funds must be set aside for up to three persons (the Entrepreneurial Lead, the I-Corps Mentor, and the PI) for mandatory attendance at a three-day grantee workshop (location and date to be announced later). The intent of this workshop is to establish the foundation for the formal technology disposition project. Proposers should estimate **$2,000 per person to cover the conference registration fees and travel expenses.**

Current and Pending Support

The proposal should provide information regarding all research to which the Principal Investigator (PI), I-Corps Mentor, and Entrepreneurial Lead either have committed time or have planned to commit time. If none, state NONE.

Current and Pending Support must be uploaded for each of the team member. Note that this proposal is considered "pending" and therefore MUST appear on each Current and Pending Support submission.

Facilities, Equipment, and Other Resources

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

B. Budgetary Information

Cost Sharing: Inclusion of voluntary committed cost sharing is prohibited

Indirect Cost (F&A) Limitations:

Recovery of indirect costs (F&A) shall be limited to $5,000. As such, this program does require mandatory cost sharing, and, therefore, is an exception to NSF' cost sharing policy.

Other Budgetary Limitations: The funding of each I-Corp award will be $50,000.

C. Due Dates

- **Submission Window Date(s)** (due by 5 p.m. proposer's local time):

    August 17, 2011 - September 09, 2011

    October 01, 2011 - December 15, 2011

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PI(s) *must* contact one of the cognizant I-Corps program officers and receive prior written authorization to submit a proposal. PI(s) are *strongly encouraged* to discuss the commercial readiness of their effort with a Topic-specific program officer prior to contacting a cognizant I-Corps program officer. This will facilitate determining whether the proposed work is appropriate for I-Corps funding.

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. Comprehensive information about using Grants.gov is available on the Grants.gov Applicant Resources webpage: http://www07.grants.gov/applicants/app_help_reso.jsp. 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.

Mentoring activities provided to postdoctoral researchers supported on the project, as described in a one-page supplementary document, will be evaluated under the Broader Impacts criterion.

Additional Solicitation Specific Review Criteria

- Potential impact on market
- Time horizon to impact

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.

B. Review and Selection Process

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

In accordance with the RAPID Guidelines (http://www.nsf.gov/pubs/policydocs/papp/gpg_2.jsp#IID1) specified in the Grant Proposal Guide, I-Corps RAPID proposals will undergo internal merit review. Under rare circumstances, program officers may elect to obtain external reviews to inform their decision. If external review is to be obtained, then the PI will be so informed in the interest of maintaining the transparency of the review and recommendation process. The two standard NSB-approved merit review criteria will apply.

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.

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.

*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: Online content establishing the process and progress tracking throughout the post-award effort will be hosted by NSF. The team's progress will be tracked through a closed Wiki environment accessible only by NSF and the team.

C. Reporting Requirements

The Principal Investigator must submit a final project report and a Project Outcomes Report for the General Public to the cognizant Program Officer within 90 days following the expiration of the grant.

Failure to provide the final project report or the Project Outcomes Report will delay NSF review and processing of any pending proposals or administrative actions for that PI. PIs should examine the formats of the required reports in advance to assure availability of required data.

The PI is required to use NSF's electronic project-reporting system, available through FastLane, for preparation and submission of the final project report. Such reports provide information on activities and findings, project participants (individual and organizational), publications, and other specific products and contributions. Submission of the report via FastLane constitutes certification by the PI that the contents of the report are accurate and complete. The Project Outcomes report 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.

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:

- Errol Arkilic, telephone: 703-292-8095, email: earkilic@nsf.gov

- Rathindra DasGupta, telephone: 703-292-8353, email: rdasgupt@nsf.gov

- Richard Voyles, telephone: 703-292-4541, email: rvoyles@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, National Science Foundation Update is a free e-mail subscription service 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 when new publications are issued that match their identified interests. Users can subscribe to this service by clicking the "Get NSF Updates by Email" link on the NSF web site.

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.

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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.

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- **Location:**   4201 Wilson Blvd. Arlington, VA 22230

- **For General Information**   (703) 292-5111
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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