EPSCoR Research Infrastructure Improvement Program Track-1: (RII Track-1)

PROGRAM SOLICITATION
NSF 12-563

REPLACES DOCUMENT(S):
NSF 11-565

National Science Foundation

Office of Integrative Activities
Office of Experimental Program to Stimulate Competitive Research

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

October 03, 2012

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.

Revision Summary

1. EPSCoR Jurisdictions with current RII Track-1 awards that expire before October 1, 2013 and those without a current RII Track- 1 award will be eligible to compete in the FY 2013 RII Track-1 competition.

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

EPSCoR Research Infrastructure Improvement Program Track-1: (RII Track-1)

Synopsis of Program:

The Experimental Program to Stimulate Competitive Research (EPSCoR) is designed to fulfill the mandate of the National Science Foundation (NSF) to promote scientific progress nationwide. The EPSCoR program is directed at those jurisdictions that have historically received lesser amounts of NSF Research and Development (R&D) funding. Thirty one jurisdictions, including twenty-eight states, the Commonwealth of Puerto Rico, Guam and the U. S. Virgin Islands are currently eligible to participate. Through this program, NSF establishes partnerships with government, higher education and industry that are designed to effect sustainable improvements in a state's or region's research infrastructure, R&D capacity, and hence, its national R&D competitiveness.

Research Infrastructure Improvement Program Track-1: (RII Track-1) awards provide up to $4 million per year for up to 5 years to support physical, human, and cyber infrastructure improvements in research areas selected by the jurisdiction's EPSCoR steering committee as having the best potential to improve future R&D competitiveness of the jurisdiction.

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.

- Martha L. James, Associate Program Director, 940, telephone: (703) 292-7772, fax: (703) 292-9047, email: mjames@nsf.gov
- Sian Mooney, Program Director, 940, telephone: (703) 292-2257, fax: (703) 292-9047, email: smooney@nsf.gov

- Jeanne R. Small, Program Director, 940, telephone: (703) 292-7378, fax: (703) 292-9047, email: jsmall@nsf.gov
- Uma D. Venkateswaran, Program Director, 940, telephone: (703) 292-7732, fax: (703) 292-9047, email: uvenkate@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
- 47.081 --- Office of Experimental Program to Stimulate Competitive Research

Award Information

Anticipated Type of Award: Cooperative Agreement

Estimated Number of Awards: 7

Anticipated Funding Amount: $28,000,000 in FY 2013 (pending quality of proposals and availability of funds).

Eligibility Information

Organization Limit:

Proposals may only be submitted by the following:

- Only jurisdictions that meet EPSCoR criteria are eligible to submit proposals to the Research Infrastructure Improvement Program Track-1: (RII Track-1) competition. The jurisdiction's EPSCoR steering committee must designate a fiscal agent/proposing organization as the responsible recipient for the RII Track-1 award. Where possible, this should be the employing organization of the Project Director. The jurisdiction must have in place a Science and Technology Plan in order to submit a RII Track-1 proposal.

PI Limit:

Principal Investigators/Project Directors of proposed EPSCoR projects must be affiliated with research universities, agencies, or organizations within the participant jurisdiction.

Limit on Number of Proposals per Organization: 1

Only one Research Infrastructure Improvement Track-1: (RII Track-1) proposal may be submitted in response to this solicitation by the designated fiscal agent/proposing organization, acting on behalf of a jurisdiction's EPSCoR steering committee.

Limit on Number of Proposals per PI: 1

An investigator may serve as PI or Co-PI on only **one** proposal submitted in response to this solicitation.

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:** Cost Sharing is required. Please see the full text of this solicitation for further information.
- **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

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

  October 03, 2012

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

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I. INTRODUCTION

Section 3(e) of the National Science Foundation (NSF) Act of 1950, as amended, states that: "...it shall be an objective of the Foundation to strengthen research and education in the sciences and engineering, including independent research by individuals, throughout the United States, and to avoid undue concentration of such research and education." Through its Congressional mandate, NSF promotes and advances scientific progress nationwide. In 1978, public concern about undue geographical concentration of federal funding of academic research and development (R&D) led Congress to further authorize NSF to conduct the Experimental Program to Stimulate Competitive Research (EPSCoR). These Congressional instructions, which established the Experimental Program to Stimulate Competitive Research, have been restated in subsequent Congressional authorizations of the Foundation's budget. Eligibility for EPSCoR participation is restricted to those jurisdictions that have historically received lesser amounts of NSF R&D funding and have demonstrated a commitment to develop their research bases and to improve the quality of science, technology, engineering, and mathematics (STEM) research conducted at their universities and colleges. Thirty one jurisdictions including twenty-eight states, the Commonwealth of Puerto Rico, the U. S. Virgin Islands and Guam currently are eligible participate in one or more elements of the NSF EPSCoR program. (See section I, paragraph D, for additional EPSCoR eligibility information).

A. EPSCoR Mission and Goals

The mission of EPSCoR is to assist the National Science Foundation in its statutory function

"to strengthen research and education in science and engineering throughout the United States and to avoid undue concentration of such research and education."

EPSCoR goals are to:

- provide strategic programs and opportunities for EPSCoR participants that stimulate sustainable improvements in their R&D capacity and competitiveness, and
- advance science and engineering capabilities in EPSCoR jurisdictions for discovery, innovation, and overall knowledge-based prosperity.

B. EPSCoR Objectives

The primary objective of EPSCoR is to stimulate research that is fully competitive in the disciplinary and multidisciplinary research programs of the National Science Foundation.

Specific EPSCoR objectives are to:

- catalyze key research themes that empower knowledge generation, dissemination, and application;
- activate effective jurisdictional and regional collaborations that advance scientific research, promote innovation, and benefit society;
- broaden participation in science and engineering (S&E) by institutions, organizations, and people within EPSCoR jurisdictions; and
- use EPSCoR for development, implementation, and evaluation of future programmatic experiments that motivate positive change and progression.

Pursuit of these goals and objectives bolsters the capacity of jurisdictions to:

- enhance discovery and learning through utilization of cyberinfrastructure and other evolving technologies;
- develop the diverse, well-prepared, internationally competent and globally engaged STEM workforce necessary to sustain the nation's competitive edge;
- facilitate knowledge generation leading to economic development; and
- expand the scientific literacy of all citizens, and disseminate to them the importance of STEM research and education.

C. **EPSCoR Investment Strategies**

EPSCoR's investment portfolio is aligned with the Foundation's strategic goals of TRANSFORM THE FRONTIERS, INNOVATE FOR SOCIETY, and PERFORM AS A MODEL ORGANIZATION:

- Transform the Frontiers - Emphasize interdisciplinary and system-oriented approaches that often lead to transformational concepts; integrate research and education; ensure a healthy balance of new investigators, broad participation throughout the Science & Engineering (S&E) community, and support for students and postdoctoral researchers involved in research projects; and enhance research infrastructure and promote data access to support researchers' and educators' capabilities and enable transformation at the frontiers.
- Innovate for Society - Make investments that lead to results and resources that are useful to society; engage stakeholders directly in identifying key societal needs and ensuring communication about those needs with NSF staff; and build the capacity of the nation's citizenry for addressing societal challenges through S&E.
- Perform as a Model Organization - Achieve management excellence through leadership, accountability, and personal responsibility.

EPSCoR uses three major investment strategies to achieve its goal of improving the R&D competitiveness of researchers and institutions within EPSCoR jurisdictions. These strategies are Research Infrastructure Improvement Program awards, Co-Funding of disciplinary and multidisciplinary research, and Outreach and Workshops.

- Research Infrastructure Improvement Program Track-1: (RII Track-1) awards provide up to $4 million per year for up to five years. They are intended to improve the research competitiveness of jurisdictions by improving their academic research infrastructure in areas of science and engineering supported by the National Science Foundation and critical to the particular jurisdiction's science and technology initiative or plan. These areas must be identified by the jurisdiction's EPSCoR steering committee as having the best potential to improve the jurisdiction's future R&D competitiveness.
- Co-Funding of Disciplinary and Multidisciplinary Research. EPSCoR co-invests with NSF Directorates and Offices in the support of meritorious proposals from individual investigators, groups, and centers in EPSCoR jurisdictions that are submitted to the Foundation's research and education programs, and crosscutting initiatives. These proposals have been merit reviewed and recommended for award, but could not be funded without the combined, leveraged support of EPSCoR and the Research and Education Directorates. Co-funding leverages EPSCoR investment and facilitates participation of EPSCoR scientists and engineers in Foundation-wide programs and initiatives.
- Outreach and Workshops. The EPSCoR Office considers requests for support of workshops, conferences, and other EPSCoR community-based activities designed to explore opportunities in emerging areas of science and engineering, and to share best practices in design and implementation in strategic planning, diversity, communication, cyberinfrastructure, evaluation, and other areas of importance to EPSCoR jurisdictions (See NSF 06-613). The EPSCoR Office also supports outreach travel that enables NSF staff from all Directorates and Offices to work with the EPSCoR research community regarding NSF opportunities, priorities, programs, and policies. Such travel also serves to more fully acquaint NSF staff with the science and engineering accomplishments, ongoing activities, and new directions and opportunities in research and education in the jurisdictions.

D. **Criteria for Eligibility to Participate in the Research Infrastructure Improvement Program Track-1: (RII Track-1)**

Research Infrastructure Improvement Program Track-1: (RII Track-1) eligibility is based on two primary considerations:

- A jurisdiction's demonstrated commitment to develop its research foundation and to improve the quality of science, technology, engineering, and mathematics (STEM) research conducted at its universities and colleges, and
- A jurisdiction's most recent three-year history of research funds awarded by NSF relative to the Foundation's total research budget for that same period.

Regarding the second consideration, a jurisdiction is eligible to participate in EPSCoR programs if its level of research support is equal to or less than 0.75 percent of the total NSF research budget for that same period. Adjustments are made in the rare instances where a single large NSF-funded national or international facility skews the data.

A newly eligible jurisdiction must submit a successful planning grant proposal before Research Infrastructure Improvement proposals can be submitted. A "new" EPSCoR-eligible jurisdiction is defined as a State, US Territory, or US Commonwealth that (1) previously did not qualify via the established 0.75 percent criterion, but is declared eligible under the most recent publication of the annual NSF EPSCoR eligibility list and (2) has demonstrated commitment to developing their research foundation. Planning grant proposals can be submitted at any time following the most recent declaration of eligibility. In order to compete for an RII Track-1 award, the "new" jurisdiction must have received an EPSCoR planning grant.

Eligible jurisdictions may seek such planning support to formulate a documented vision consistent with the jurisdiction's S &T Plan and an implementation design for their research, education, and innovation strategies. An expected outcome from any supported planning activity is the submission of a competitive RII Track-1 proposal and subsequent proposals to NSF Directorates and Offices, which combine capacity-building with capability enhancement for addressing bold opportunities characterized by regional relevance and national importance.

A jurisdiction wishing to submit a planning grant proposal must notify the NSF EPSCoR Office with a letter of intent to submit and then meet with NSF EPSCoR officials to discuss the conceptual project, potential partners and estimated cost. Depending on the outcome of these discussions, the jurisdiction may be invited to submit an EPSCoR planning proposal, in accordance with NSF's grant proposal guidelines.

Any currently participating EPSCoR jurisdiction that does not meet the eligibility criteria for an RII Track-1 competition will continue to be eligible for EPSCoR Co-Funding and Outreach funding for a period of three years.

This solicitation describes the Research Infrastructure Improvement Program Track-1: (RII Track-1).

II. PROGRAM DESCRIPTION

RII Track-1 Program Description

The science and engineering research program for which improved infrastructure is requested is the heart of the RII Track-1 proposal. The intellectual merit and broader impacts of the proposed activities provide the rationale for the requested infrastructure investments which, in turn, enhance the overall research capacity of the jurisdiction. These proposals are unique in their jurisdiction-wide scope and complexity; in their integration of individual researchers, institutions, and organizations; and in their role in developing the diverse, well-prepared, STEM-enabled workforce necessary to sustain research competitiveness and catalyze economic

development. The RII Track-1 award is intended to add specific value to the jurisdiction's academic infrastructure not generally available through other funding sources.

Essential to EPSCoR's goal of enhancing the competitive position of jurisdictions' research and research-based education in science and engineering is a well-designed jurisdiction-wide Science and Technology initiative or Plan (S&T Plan). The jurisdiction must have in place a S&T Plan in order to submit a RII Track-1 proposal. The S&T Plan establishes jurisdiction-wide goals and objectives, and provides a framework that guides the jurisdiction's utilization of resources from EPSCoR and other stakeholders to achieve them. The S&T Plan should be complemented by the jurisdiction's economic development plan that describes innovation pathways for bringing outputs and outcomes of the proposed RII Track-1 research to the marketplace. The S&T Plan and the economic development plan, as appropriate, should be included in supplementary documentation.

Each jurisdiction must establish and utilize an EPSCoR steering committee that works closely with leaders in academe, government, and the private sector. The committee will identify potential R&D improvement strategies and activities that are consistent with the S&T Plan and most likely to advance the further development of a nationally competitive academic R&D capability. Once in place, this academic R&D capability is expected to provide a key ingredient for a definitive innovation and commercialization strategy to stimulate the jurisdiction's economic development, including a diverse well-prepared STEM-enabled workforce.

In preparation for submitting a proposal, the EPSCoR steering committee of the jurisdiction is expected to have undertaken a recent comprehensive analysis of the strengths, barriers, and opportunities for further development of its institutions in support of overall objectives in research, education, and innovation. The jurisdiction's EPSCoR steering committee should evaluate the maturity of ongoing efforts versus the potential new research directions and their alignment with the state S&T plan. The proposal must describe the EPSCoR jurisdiction's steering committee's procedure and steps leading to the RII Track-1 proposal preparation as well as the alignment of the jurisdiction's S&T Plan and the current RII Track-1 proposal. An EPSCoR RII Track-1 proposal must describe the strategy and implementation mechanisms to develop, expand, use, and sustain the science and technology resources that reside in the jurisdiction's colleges and universities. Successful infrastructure improvement proposals are likely to be those that provide sound platforms and opportunities for enhanced academic R&D competitiveness by a jurisdiction's colleges and universities, including pragmatic plans for generation of sustained non-EPSCoR support.

Successful research infrastructure improvement proposals must also include strategies for utilizing the diverse human, physical, and technological resources within the jurisdiction. Also essential to the infrastructure improvement proposals are implementation mechanisms that have a high probability of realizing stated goals and objectives.

To ensure maximum impact of limited EPSCoR resources, requests for EPSCoR funding must:

- Add significantly and measurably to research capability in S&T areas of high institutional and jurisdictional priority;
- Engage the full diversity of the jurisdiction's resources in the STEM enterprise;
- Contribute to the jurisdiction's strategy for future research and innovation; and
- Present a detailed strategy to generate subsequent, sustained non-EPSCoR funding from federal, jurisdictional, or private sector sources.

Note: In all instances, clear specification of competitiveness goals, performance milestones, and a timetable for achieving such milestones is a requirement for EPSCoR support.

Major accomplishments from prior NSF EPSCoR support and a detailed plan for achieving sustainable success in science and engineering, together with formative and summative evaluation plans with measurable metrics, must be included in the proposal. It is expected that the improvement strategies described in RII Track-1 proposals will enable targeted research areas to become viable for securing new sources of future non-EPSCoR funding.

Finally, the RII Track-1 proposal should summarize the coordination and synergy among (1) all the EPSCoR/EPSCoR-like programs in the jurisdiction and (2) EPSCoR and other NSF investments in the jurisdiction. The proposal should then define the leveraging role for the proposed NSF EPSCoR RII Track-1 project within these broader contexts.

Infrastructure enhancement strategies that sharply focus available resources on research and research-based education and innovation activities that are consistent with specified long-term jurisdictional and regional objectives are most likely to be successful. In conjunction with this focus, the proposed education and innovation projects should be integrated with identified research theme(s). EPSCoR strives for improvements that will significantly increase the R&D capacity of a jurisdiction or region to enable stronger competitiveness in large scale and cross-cutting competitions. EPSCoR support of a proposed research improvement activity should not duplicate other available federal, jurisdictional, or institutional resources and should add significant value to increased research competitiveness at the jurisdictional or larger regional level.

A. **Examples of RII Track-1 Activities**

Examples of RII Track-1 activities that are consistent with NSF EPSCoR program objectives include, but are not limited to:

- Support for competitive levels of "start-up" funding for new faculty, including faculty exchange programs with major centers of research activity and/or the acquisition of state-of-the-art research instrumentation;
- Support for competitive levels of strategic funding to attract and/or retain established faculty who are active researchers in areas aligned with the jurisdiction's S&T Plan;
- Development of meaningful partnerships, including regional collaborations, among EPSCoR jurisdiction-based colleges and universities; partnerships between such EPSCoR colleges and universities and nationally recognized centers of R&D activity (*e.g.,* federal and industrial R&D laboratories, NSF-sponsored research centers, and academic institutions with nationally-recognized research capabilities); and productive partnerships between the jurisdiction's research universities and the private sector in the region. Of special value are those alliances that increase linkages between EPSCoR researchers and their counterparts in research and/or technology-based small businesses and thereby increase the competitiveness of the jurisdiction's/region's S&T entrepreneurial talent for federal Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) grants;
- Establishment of graduate research training groups or similar appropriate mechanisms that integrate research and education, encourage multidisciplinary research-based educational experiences, and establish links with the private sector, industry and national laboratories;
- Facilitation of partnerships between U.S. scientists and engineers and their international counterparts to enhance research excellence and foster development of the next generation of globally engaged U.S. scientists and engineers;
- Implementation of novel concepts for discovery-based STEM education and human resource development and the identification of best practices to develop leadership;
- Support for faculty and student teams that include persons with disabilities and are diverse in gender, race, and ethnicity, that will result in a strong, quantifiable impact on the STEM workforce;
- Support for the acquisition of equipment for research and other discovery-based learning activities at predominately undergraduate and minority serving institutions;
- Development of nationally competitive high-performance computing, networking, and data capabilities that strengthen and enrich the cyberinfrastructure environment to enable more robust science and engineering research and education;
- Support for projects targeting the full diversity of institutions across the jurisdiction, including 2-year, 4-year, rural, and minority-serving institutions; and
- Support for activities that promise extraordinary outcomes including revolutionizing entire disciplines, creating new fields, or disrupting accepted theories and perspectives.

B. **Eligible Organizations and Institutions**

A RII Track-1 award is not the appropriate mechanism to provide support for independent faculty research projects. Requests for support of such projects should be directed to NSF's research grant programs.

Proposals requesting funds for research infrastructure improvement may include support for academic, profit, and non-profit organizations, as well as certain individuals employed by such organizations, both inside and outside the jurisdiction. In addition, cooperative programs among research universities within or across EPSCoR jurisdictions, or between a jurisdiction's research universities and predominately undergraduate institutions, especially minority serving institutions, qualify for EPSCoR support.

In all cases, Project Directors/Principal Investigators of proposed EPSCoR projects must be affiliated with research universities, agencies, or organizations within the participant jurisdiction. Whereas the proposed project may employ collaborations between EPSCoR and non-EPSCoR participants, EPSCoR funding can only be requested and used for the EPSCoR-based components. In addition, all activities carried out under an EPSCoR award are subject to the restrictions concerning eligible science, technology, engineering, and mathematics disciplines and activities detailed in the NSF Proposal and Award Policy and Procedures Guide (PAPPG) found on the NSF website at http://www.nsf.gov/publications/pub_summ.jsp?ods_key=papp.

III. AWARD INFORMATION

Anticipated Type of Award: Cooperative Agreement

Estimated Number of Awards: 7

Duration: Award duration of up to 5 years

Anticipated Funding Amount: $28 million in FY 2013 (pending quality of proposals and availability of funds)

Limitation of Awards:

- RII Track-1 award amount not to exceed $4 million per year.
- Estimated program budget, number of awards and average award size/duration are subject to the availability of funds.
- Jurisdictions with current RII Track-1 awards that expire before October 1, 2013, will be eligible to compete in the FY 2013 RII Track-1 competition. Jurisdictions will be allowed to have a maximum overlap period of six months for two active RII Track-1 awards (i.e., the concluding duration of a previous award and the initial period of a new award). In cases where no-cost extensions are employed, the maximum overlap for two awards still cannot exceed six months.

IV. ELIGIBILITY INFORMATION

Organization Limit:

Proposals may only be submitted by the following:

- Only jurisdictions that meet EPSCoR criteria are eligible to submit proposals to the Research Infrastructure Improvement Program Track-1: (RII Track-1) competition. The jurisdiction's EPSCoR steering committee must designate a fiscal agent/proposing organization as the responsible recipient for the RII Track-1 award. Where possible, this should be the employing organization of the Project Director. The jurisdiction must have in place a Science and Technology Plan in order to submit a RII Track-1 proposal.

PI Limit:

Principal Investigators/Project Directors of proposed EPSCoR projects must be affiliated with research universities, agencies, or organizations within the participant jurisdiction.

Limit on Number of Proposals per Organization: 1

Only one Research Infrastructure Improvement Track-1: (RII Track-1) proposal may be submitted in response to this solicitation by the designated fiscal agent/proposing organization, acting on behalf of a jurisdiction's EPSCoR steering committee.

Limit on Number of Proposals per PI: 1

An investigator may serve as PI or Co-PI on only **one** proposal submitted in response to this solicitation.

Additional Eligibility Info:

A newly eligible jurisdiction must have received a planning grant before a Research Infrastructure Improvement proposal can be submitted. A "new" EPSCoR-eligible jurisdiction is defined as a State, US Territory, or US Commonwealth that (1) previously did not qualify via the established 0.75 percent criterion, but is declared eligible under the most recent publication of the annual NSF EPSCoR eligibility list and (2) has demonstrated commitment to developing their research bases. Planning grant proposals can be submitted at any time following the most recent declaration of eligibility**.** In order to compete for an RII Track-1 award, the "new" jurisdiction must have received an EPSCoR planning grant and have developed a jurisdiction S&T Plan.

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.

The following instructions are specific to proposals submitted to the Research Infrastructure Improvement Program Track-1: (RII Track-1) competition and supplement the NSF GPG and NSF Grants.gov Application Guide:

- The jurisdiction's EPSCoR steering committee shall designate a fiscal agent/proposing organization for the project. Where possible, this should be the employing organization of the Project Director.
- Separately submitted collaborative RII Track-1 proposals will not be accepted and will be returned without review.
- **The proposal section labeled Project Description may not exceed 25-pages, including text, as well as any graphic or illustrative materials. Page limitations also apply to specific subsections of the proposal. Proposals that exceed the page limitations or that do not contain all items described below will be returned without review.**

  Note: Proposals that use the maximum number of pages in each subsection of the Project Description will not be in compliance with the overall 25 page limitation.

PROJECT DESCRIPTION REQUIREMENTS

The RII Track-1 Proposal must include the following elements:

1. **NSF Cover Sheet.**
2. **Project Summary (*3 pages maximum*).** Provide a clear vision for and description of the proposed RII Track-1 project and its potential impact. Briefly describe the proposed scope and the RII Track-1 organization, activities in research and education and their integration, development of human resources, plans for cyberinfrastructure, diversity, workforce development, external engagement (including outreach and communications), evaluation and assessment, sustainability, and the proposed management structure. Indicate in separate paragraphs the intellectual merit and broader impacts of the proposed work.
3. **Table of Contents.** Generated automatically by the system.
4. **Project Description *(25 pages maximum)*.** The project description is the centerpiece of the RII Track-1 proposal. It should describe the current status of the jurisdiction's academic R&D enterprise, the jurisdiction's science and technology plans and goals, and how the infrastructure for which NSF support is being requested will enable successful pursuit of those science and technology plans and goals. The science and engineering activities to be facilitated by the RII Track-1 award should be compellingly presented and closely aligned with the NSF's strategic outcome goals. The project description must contain:

   4.1 **Status and Overview (*3 pages maximum*).** The current status of the jurisdiction's academic R&D enterprise must be described. This description must include a comprehensive analysis of the strengths, barriers, and opportunities for development of its academic institutions in support of overall jurisdictional R&D objectives. The proposal narrative should provide convincing background and rationale for the project's scientific vision. It should show how the overall strategy and accompanying implementation mechanisms, if augmented with the requested infrastructure support, will improve the jurisdiction's competitiveness for federal, jurisdictional, and private sector R&D funding. This narrative must describe how the activities will add significantly and measurably to research capability in S&T areas of high institutional and jurisdictional priority. The narrative should demonstrate how the specific S&T infrastructure improvements and activities proposed will advance the jurisdiction's future research competitiveness and develop clearly focused research areas. The relationship of these proposed infrastructure investments and activities to the jurisdiction's science and technology plans and policies must be made clear.

   4.2 **Results from Relevant Prior NSF Support (*2 pages maximum*).** A section on results from relevant prior NSF support must be included and the relevance of that support to the proposed activities explained.

   4.3 **Research Program (*15 pages maximum*).** The RII Track-1 proposal may encompass one or more focus areas within the proposed research program. For each area proposed, provide a concise description of the long-term research goals and intellectual focus, and describe the planned research activities **in sufficient detail to enable their scientific merit and broader impacts to be assessed.** Present each focus area in the context of other efforts in the field, state the major challenges and comment on novelty and/or originality of your proposed contribution. This should be accompanied with a list of representative references. Describe the role and intellectual contribution of each lead senior participant in the focus area and briefly outline the resources, available and planned, to accomplish the research goals. The means of developing an interactive, collaborative research approach involving several investigators and institutions should be clearly established. Place the focus area in the context of the RII Track-1 as a whole, and describe interactions with other groups and organizations within the jurisdiction. The research program description must demonstrate how each focus area also contributes to the jurisdiction's strategy for future research and innovation. The narrative should demonstrate how the activities of the specific focus areas are aligned with the jurisdiction's S&T Plan, and how they will advance the jurisdiction's future research competitiveness. For each focus area described in the proposal, identify the senior leadership and estimate the numbers of postdoctoral, graduate, and undergraduate research participants.

   4.3.1 *Seed Funding and Emerging Areas.* Through this mechanism, NSF EPSCoR intends to provide flexibility for the RII Track-1 to respond quickly and effectively to new opportunities, to pursue high risk/high impact and transformative research, and to attract new faculty to the jurisdiction's institutions. Briefly describe other proposed research plans and related activities, showing clearly how they are related to the mission of the RII Track-1. These may include (but are not limited to): seed support for junior faculty and for investigators changing fields; emerging areas of interdisciplinary research; experimental programs to link the jurisdiction's activities in research with industry and other sectors; the development of tools for remote access to instrumentation; and innovative educational and workforce development ventures. Seed funding through the RII Track-1 is not intended to provide a substitute for NSF individual investigator funding. The criteria and mechanisms for selecting and evaluating projects must be clearly addressed in terms of current needs and long-term sustainability.

   4.4 **Diversity Plan (*2 pages maximum*).** Diversity is the key to utilization of all of the nation's intellectual and physical resources. The need for greater diversity among states receiving NSF funding for research and education in science and engineering prompted the creation of the NSF EPSCoR program. Diversity is essential if jurisdictions are to utilize all of the available human and institutional resources in the pursuit of the goals of their science and technology plans. This includes diversity of all types, *e.g.,* institutional, individual, disciplinary, geographic, etc. RII Track-1 project narratives should describe the current state of diversity within the jurisdiction's science and technology enterprise and provide clearly articulated plans for its improvement. Describe the research basis for the choice in diversity improvement strategies, and if a strategy is being adapted from another successful project, cite the source of the activity. This narrative must also describe how you will engage the full diversity of the jurisdiction's resources in the STEM enterprise - including specific goals and milestones - to increase that diversity as an integral part of the infrastructure improvement activities for which support is being requested.

4.5 **Workforce Development Plan (*4 pages maximum).*** A jurisdiction's STEM workforce is the life blood of its innovation and competitiveness. The development of such a workforce is critical to building and sustaining research capacity and economic growth. To this end, the scope of RII Track-1 activities must include specific focus on transformative workforce development leading to innovations and competitiveness.

The planned scope of workforce development activities to be undertaken must qualitatively and quantitatively transcend previous and on-going efforts in this area. The new domains and levels, and their relation to previous and on-going activities, must be clearly articulated. The plan must convey an implementation strategy with initial baseline assessment and clearly articulated goals, milestones, and timelines. The plan must be jurisdiction-wide and fully inclusive of all demographic sectors of the jurisdiction's population, as appropriate. It must engage all elements along the workforce development pathway with particular focus on minority-serving and two-year and four-year institutions. The vital role of private sector partners must be made clear. Synergies between the workforce development plan and other NSF investments in the jurisdiction that develop human infrastructure must be clearly articulated. Efforts that focus on K-12 and undergraduate education should describe the research basis for their selection.

4.6 **Cyberinfrastructure Plan (*2 pages maximum*).** Cyberinfrastructure capabilities are critical to advances in research and education in science and engineering. Cyberinfrastructure can provide opportunities to leapfrog impediments posed by limited physical infrastructure and can enable broad educational engagement at the frontiers of discovery and innovation in science and engineering. Well-articulated plans for the development, improvement, and deployment of cyberinfrastructure appropriate to pursuit of the goals of both the RII Track-1 project and the jurisdiction's S&T Plan are required.

4.7 **External Engagement Plan (*2 pages maximum*).** External engagement includes outreach, communication, and dissemination, which are essential elements of successful strategies for the development of a diverse, well-prepared, internationally competent, and globally engaged STEM workforce and for a more scientifically literate public. A clearly articulated plan for external engagement activities that will expand institutional participation, student career options, and facilitate the entry of women and members of underrepresented groups into STEM fields is required in the RII Track-1 project description. This plan may include engagement of the private sector to develop partnerships that promote STEM pipeline development. This plan may also include other collaborations such as intra-jurisdictional, inter-jurisdictional, regional, national and international partnerships as appropriate. Activities in informal science education should be presented with a research based justification for their choice. Engagement by NSF staff in disciplinary areas of importance to the jurisdiction's science and technology strategic plan is appropriate. Communicating the results, benefits, and processes of science to citizens at all educational levels builds scientific literacy and strengthens educational and research capacity throughout jurisdictions. Plans for the development of substantive technology that enables and facilitates communication within and among jurisdictions and between jurisdictions and the NSF EPSCoR Office must be described.

4.8 **Evaluation and Assessment Plan (*4 pages maximum*).** A comprehensive evaluation and assessment plan must be included. This plan must show the milestones and metrics selected to assess and evaluate demonstrable impacts and achievements of the award on all required elements of the proposed program, during the award period and tracking mechanisms after the award period. The plan should detail annual metrics and milestones that indicate how the project is progressing towards developing strength for the formation of partnerships and collaborations. The plan should include review and evaluation of RII Track-1 activities by a diverse group of **independent, external experts** during the award period. Reports prepared by these review committees are to be conveyed to the NSF EPSCoR Office in a timely manner.

4.9 **Sustainability Plan (*3 pages maximum*).** A plan for long-term sustainability of the proposed activities must be included in the project description. The proposer must describe clearly the strategy and implementation plan (with milestones) for sustaining the impacts and achievements in the science and technology enterprise subsequent to the period of proposed NSF EPSCoR support.

4.9.1 *Education and Human Resources Development*. Describe the education and human resources development goals for sustainability, provide a rationale for those goals, and indicate desired outcomes for the 5-year period of the award and beyond. Indicate milestones and timelines for their achievement. Briefly describe how the education goals integrate strategically with the research and organizational/partnership opportunities of the jurisdiction. Outline plans for faculty and student recruitment and retention activities, conferences, summer schools and related activities, as appropriate. Describe any additional educational programs not included in other sections of the proposal, such as discovery based learning activities for K-12 teachers and undergraduate students, and for engagement of two-year institutions. For activities involving K-12 teachers, describe how they fit into the jurisdiction's current curriculum and student learning goals for STEM.

4.9.2 *Post RII Track-1 extramural funding.* Describe the vision and specific plans for sustaining the research activities beyond the duration of RII Track-1 support. Present a detailed strategy to generate subsequent, sustained non-EPSCoR funding from federal, jurisdictional, or private sector sources.

4.10 **Management Plan (3 *pages maximum*).** The management plan is a critical component of the RII Track-1 project. The project management team is responsible for implementing the proposed research infrastructure improvement activities and managing all aspects of the project. It is important that the project's management team be sufficient in number, diversity, and levels of expertise to assume technical and administrative oversight of the project and accomplishment of project milestones. In addition, it is expected that the EPSCoR management team will coordinate with other offices (*e.g.*, sponsored research offices) to identify funding opportunities and facilitate research and external engagement. The management plan should include mechanisms to effective use resources and respond to emerging opportunities as they develop. The management team is also responsible for enhancing public understanding about the importance of the role of science in service to society.

Specific requirements for the management plan include:

- EPSCoR steering committee: The committee should be composed of representatives from academe, government and the private sector. Its role in project governance, including specific management responsibilities for the NSF EPSCoR project as well as for the coordination of the jurisdiction's EPSCoR/EPSCoR-like portfolio, should be clearly detailed.
- EPSCoR management team: The role and responsibilities of the Project Director (and Co-Directors), administrative support personnel, and other team members must be clearly defined. A succession plan for key personnel should be included.
- The institutional affiliation and demographics for each committee and team associated with the RII Track-1 project should be provided.
- Technical Assistance: Plans for any technical or administrative assistance required for the development and execution of the RII Track-1 project should be clearly described.

4.10.1 *Jurisdictional and Other Support.* Outline existing resources available to the RII Track-1 project, including but not limited to space, faculty and staff positions, capital equipment, access to existing facilities, collaborations, and outreach/external engagement programs. Note: Letters of commitment to the project may be included in the Supplementary Documents section of FastLane.

4.10.2 *Summary Table of Requested NSF Support.* In tabular form summarize the overall support levels planned for each participating institution (Budget Table A) of the RII Track-1 project. Note: More detailed information should be provided in Supplementary Documents (see Table B in Section 10.C).

For each entry in the Table include indirect costs. Column totals must equal the total budget requested from NSF for the period

shown.

Budget Table A. Research Support Levels ($K)

Awardee	Year 1 ($K)	Year 2 ($K)	Year 3 ($K)	Year 4 ($K)	Year 5 ($K)	5- Year TOTAL	%
Lead Institution (Name)							
Participating Institution (Name) (*repeat for each organization participating in RII Track-1*)							
Total							100%

5. **References Cited** in the Project Description should be listed here. See GPG Chapter II section C.2.e. While there is no established page limitation for the references, this section must include bibliographic citations only and must not be used to provide parenthetical information outside of the 25-page Project Description.

6. **Biographical Sketches.** Include a biographical sketch for each faculty-level participant according to standard NSF grant proposal guidelines. Include doctoral and postdoctoral advisors, and all PhD students supervised.

7. **Budget pages and budget justification.** Complete budget pages for each year of support (1-5). Also provide a five-year summary budget justification that may not exceed a total of 3 pages. A five-year cumulative budget will be automatically generated by FastLane or Grants.gov. Provide separate budget pages for the RII Track-1 as a whole and for each organization receiving a sub-award. Identify and provide justification for all faculty level and equivalent personnel expected to receive greater than two months salary.

8. **Current and Pending Support.** List current and pending support for each faculty level and equivalent investigator. (Include this proposal at the top of the list of current and pending support.) See GPG Chapter II section C.2.h.

9. **Facilities, Equipment, and Other Resources**
See GPG Guidance on Facilities, Equipment, and Other Resources

1. **Supplementary Documentation**

   a. List of Participants. Provide *a list of participating senior investigators* (faculty level and equivalent) by name, organizational and departmental affiliation.

   b. List of all institutions and companies involved in the project.

   c. Budget Table B. In tabular form as follows, summarize the overall support levels (in $K) planned for each of the major activities of the proposed RII Track-1 project. Provide separate entries for each research area including salaries and fringe benefits for participants, seed funding, and relevant equipment. Add appropriate entries if you propose more than two research areas. For all other entries include an estimated cost of the implementation of the proposed plans. Support for graduate students should normally be included under research, not under the workforce development plan or other sections.

Budget Table B.

Activity	Year 1 ($K)	Year 2 ($K)	Year 3 ($K)	Year 4 ($K)	Year 5 ($K)	Total ($K)	% of Total
Research Area 1 (Title) salaries and fringe benefits							
Research Area 1 Seed Funding							
Research Area 1 Equipment							
Research Area 2 (Title) salaries and fringe benefits							
Research Area 2 Seed Funding							
Research Area 2 Equipment							
Research Area 3 (as needed)							
Diversity Plan							
Workforce Development Plan							
Cyberinfrastructure Plan							
External Engagement Plan							
Evaluation and Assessment Plan							
Sustainability Plan							
Management Plan (include all administrative expenses)							
Indirect Cost							
Other (specify)							
Total							100%

   d. List of conflicts. A single, alphabetically ordered list of all people, in the academic or professional community, who have collaborated with (within the last 48 months), or have been a Ph.D. advisee or advisor of, any of the personnel involved in the proposed project including all advisory boards. In this list, please include, next to the name of each conflicted individual, that individual's institution or company and the name of the project member with whom he or she has the conflict of interest. It is not necessary to list, as collaborators, personnel who are simply employees of an institution or company involved in the project. The list must be ordered alphabetically by the first column, i.e. the last names of the conflicted individuals. Note that past or present association with an individual as a thesis advisor or thesis student presents a lifelong conflict of interest with that individual. All thesis advisees supervised must be listed in this table, not just those supervised within the last 48 months. See http://www.nsf.gov/attachments/116169/public/coi_form_1230p.pdf for additional details.

   e. Letters of Commitment. Include only official letters of commitment with specific commitments of resources from participating institutions or organizations anticipated to receive subawards, or from organizations that will provide resources for the project. Scan your signed letters and upload them into the Supplementary Documents section of FastLane or Grants.gov, but do not send originals.

      Do not submit letters of support which do not provide specific commitments of resources.

   f. The jurisdiction's most recent Science & Technology Plan.

   g. A Postdoctoral Researcher Mentoring Plan and a Data Management Plan. See the GPG Chapter II, section C.2.j for details.

B. Budgetary Information

Cost Sharing: Cost Sharing is required

Cost sharing at a level of at least, and no more than, 20 percent of the amount requested from NSF is required for all proposals submitted in response to this solicitation.

All cost sharing amounts are subject to audit. Failure to provide the level of cost-sharing reflected in the approved award budget may result in termination of the NSF award, disallowance of award costs and/or refund of award funds to NSF.

The proposed cost sharing must be shown on Line M on the proposal budget. Documentation of the availability of cost sharing must be included in the proposal. Only items which would be allowable under the applicable cost principles, if charged to the project, may be included as the awardee's contribution to cost sharing. Contributions may be made from any non-Federal source, including non-Federal grants or contracts, and may be cash or in-kind (2 CFR § 215.23). It should be noted that contributions counted as cost-sharing toward projects of another Federal agency may not be counted towards meeting the specific cost-sharing requirements of the NSF award. All cost-sharing amounts are subject to audit. Failure to provide the level of cost-sharing required by the NSF solicitation and reflected in the approved award budget may result in termination of the NSF award, disallowance of award costs and/or refund of award funds to NSF.

Administrative requirements related to cost sharing may be found in 2 CFR § 215.23, "Cost Sharing or Matching." For additional information on cost principles consult: 2 CFR Part 220, Cost Principles for Educational Institutions (OMB Circular A-21); or 2 CFR Part 230, Cost Principles for Nonprofit Organizations (OMB Circular A-122), as applicable.

Other Budgetary Limitations:

Funding requests can be for durations of up to 5 years. Annual budgets for NSF support cannot exceed $4 million.

Budgets should include sufficient funding for participation in annual jurisdictional and regional EPSCoR conferences. In addition, budgets should request support for key jurisdiction personnel to participate in the annual Project Directors/Project Administrators meeting, the biennial National EPSCoR Conference, and in evaluative activities including site visits and reverse site visits.

C. Due Dates

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

  October 03, 2012

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 judgments.

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

Reviewers for the RII Track-1 competition will also consider the following specific aspects of intellectual merit and broader impacts:

1. **Strategic Fidelity and Impact** - How are the proposed infrastructure, education, external engagement, and technology transfer plans aligned with the central research themes and with the jurisdiction's S&T Plan? How do the proposed research infrastructure improvement plans and strategies utilize the strengths and opportunities identified in the proposal and how do the plans address barriers? How clearly is the proposed research positioned in the context of other efforts in the field? How well is this illustrated by the list of references? What meaningful impact on capacity and capability in the jurisdiction is expected as a result of this proposed project? Is there ample evidence that the project will build strength that can be used, alone or in regional collaborations, to address scientific issues of regional relevance, and national importance? What is the level of integration among shared facilities and research partners and is it sufficient? How does each proposed component contribute to an identifiable strategy for intensifying competitiveness in research and innovation?
2. **Value Added** - How do the proposed activities add value at the institutional, jurisdictional, and regional levels in research, education, and innovation? How will the magnitude of the additional value be measured? How does the project advance the jurisdiction's innovation and economic development, e.g., through greater emphasis on creativity, inventiveness, technology transfer, potential commercialization, and/or national research competitiveness? How do the proposed activities promote organizational connections and linkages within and between jurisdictions, schools, private, and public sector? Are the scope and depth of the proposed activities appropriate to achieve the greatest project impacts? Are the leadership, faculty and student teams diverse in gender, race, and ethnicity? How will the implementation of the proposed strategic plan result in increased diversity in the jurisdiction's and/or nation's workforce?
3. **Diversity Plan** - How will the diversity plans broaden participation (e.g., institutions, including minority serving institutions, women and underrepresented groups in STEM, persons with disabilities, and economically disadvantaged, rural, and/or first generation college students) in the research and education activities of the proposed project? How will the proposed activities achieve a significant and sustained impact in the targeted research and education populations within the consortium? What novel and effective ways are proposed to reach non-traditional populations and underrepresented groups in STEM?
4. **Workforce Development Plan** - What are the transformative and/or innovative features of the proposed plans for workforce development? How well do the workforce development plans include all demographic sectors of the jurisdiction's population? How do the plans intend to broadly and effectively engage the jurisdiction's institutions in the integrated workforce development program? Is the basis for the selection of specific diversity activities well-justified? How will the plans and activities lead to transformative improvements in workforce preparation and the competitiveness of the jurisdiction? What specific program(s) with an emphasis on secondary school teachers and faculty and students from minority serving two and four year institutions are described? Are those activities, particularly those involving informal education and K-12 schools, if any, chosen with a sound research basis? What synergy exists among the proposed programs, the jurisdiction's S&T and economic priorities, and other ongoing activities in the jurisdiction? Are relevant goals, objectives, milestones, and timelines clearly stated?
5. **Cyberinfrastructure Plan** - How well does the cyberinfrastructure plan support and integrate with the jurisdiction's science and technology plan? To what extent is the cyberinfrastructure plan likely to enhance capacity for discovery, innovation, and education in science and engineering? How well does the plan as presented position the proposing jurisdiction for future cyberinfrastructure development?
6. **External Engagement Plan** - How will the proposed internal communications enable the efficient sharing of data and information among the project's partners? How do the project activities take advantage of cyberinfrastructure and integrate with the cyberinfrastructure plan? What is the coordinated process for the collection and dissemination of major project results to audiences that include, for example, NSF, the scientific community, the jurisdiction, other EPSCoR jurisdictions, and the general public? What mechanisms are described as communication pathways to the NSF EPSCoR Office and are they likely to be effective?
7. **Evaluation and Assessment Plan** - How effective is the proposed plan likely to be in measuring the outputs and outcomes of the project across all required elements? How clear and appropriate are the proposed metrics and milestones for gauging project accomplishments according to a well-defined schedule? How will the evaluation process result in reliably capturing metric-related data and reporting it in a timely manner? How will the evaluation process and results be used by project leadership for monitoring and management? How do the formative and summative evaluation plans assess current status, major impacts, and future directions? Do the evaluation and assessment tasks have adequate resources? Are the independent, external evaluators appropriate?
8. **Sustainability Plan** - How clear, reasonable, and viable are the plans for sustainability? How will the proposed activities foster and sustain the program and/or innovation in the long-term following EPSCoR support? How will each of the project's partners contribute to sustainability and how will the partnership evolve to ensure future progress in research, research-based education, and innovation?
9. **Management Plan** - How well described is the management structure and how will the management structure impact the potential effectiveness of the leadership team? How do the Project Director and the management team demonstrate the vision, experience, and capacity to manage a complex, multi-faceted research, education, and knowledge transfer enterprise? Are the membership and roles of the jurisdiction's EPSCoR steering committees and external advisors explicitly identified, and is their involvement in the project apparent, logical, and free of conflicts of interest? Are plans for technical assistance appropriate and are the anticipated providers of such assistance appropriately qualified?

NSF staff 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 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 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:

The annual and final reports must include identification of numbers of women and members of other underrepresented groups in STEM fields, faculty and staff positions, and as participants in the activities funded by the award.

Within 90 days after the expiration of an award, the PI also is required to submit a final project report. Failure to provide final technical reports delays NSF review and processing of pending proposals for the PI and all Co-PIs. 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. This system permits electronic submission and updating of project reports, including information on project participants (individual and organizational), activities and findings, 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.

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, and a project outcomes report for the general public.

Failure to provide the required annual or final project reports, or the project outcomes report will delay NSF review and processing of any future funding increments as well as any pending proposals for 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. 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.

The NSF EPSCoR Office will conduct performance effectiveness reviews biennially during the award. These reviews will include site visits, reverse site visits, and/or video teleconferencing. Continued funding will be determined by both the annual progress reports and by the results of performance effectiveness reviews.

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:

- Martha L. James, Associate Program Director, 940, telephone: (703) 292-7772, fax: (703) 292-9047, email: mjames@nsf.gov
- Sian Mooney, Program Director, 940, telephone: (703) 292-2257, fax: (703) 292-9047, email: smooney@nsf.gov
- Jeanne R. Small, Program Director, 940, telephone: (703) 292-7378, fax: (703) 292-9047, email: jsmall@nsf.gov
- Uma D. Venkateswaran, Program Director, 940, telephone: (703) 292-7732, fax: (703) 292-9047, email: uvenkate@nsf.gov

For questions related to the use of FastLane, contact:

- FastLane Help Desk, telephone: 1-800-673-6188; e-mail: fastlane@nsf.gov.
- Jacqueline S. Moore, Administrative Manager, 940, telephone: (703) 292-7075, fax: (703) 292-9047, email: jsmoore@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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The National Science Foundation Information Center may be reached at (703) 292-5111.

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- **Location:** 4201 Wilson Blvd. Arlington, VA 22230
- **For General Information** (NSF Information Center)**:** (703) 292-5111
- **TDD (for the hearing-impaired):** (703) 292-5090
- **To Order Publications or Forms:**

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

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