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

PROGRAM SOLICITATION
NSF 13-549

REPLACES DOCUMENT(S):
NSF 12-563

National Science Foundation

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

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

   August 06, 2013

IMPORTANT INFORMATION AND REVISION NOTES

A revised version of the *NSF Proposal & Award Policies & Procedures Guide* (PAPPG), NSF 13-1, was issued on October 4, 2012 and is effective for proposals submitted, or due, on or after January 14, 2013. Please be advised that the guidelines contained in NSF 13-1 apply to proposals submitted in response to this funding opportunity. Proposers who opt to submit prior to January 14, 2013, must also follow the guidelines contained in NSF 13-1.

Please be aware that significant changes have been made to the PAPPG to implement revised merit review criteria based on the National Science Board (NSB) report, National Science Foundation's Merit Review Criteria: Review and Revisions. While the two merit review criteria remain unchanged (Intellectual Merit and Broader Impacts), guidance has been provided to clarify and improve the function of the criteria. Changes will affect the project summary and project description sections of proposals. Annual and final reports also will be affected.

A by-chapter summary of this and other significant changes is provided at the beginning of both the *Grant Proposal Guide* and the *Award & Administration Guide*.

Please note that this program solicitation may contain supplemental proposal preparation guidance and/or guidance that deviates from the guidelines established in the Grant Proposal Guide.

Revision Summary

1. EPSCoR jurisdictions with current RII Track-1 awards that expire before October 1, 2014 and those without a current RII Track-1 award will be eligible to compete in the FY 2014 RII Track-1 competition.
2. The required elements have changed to more closely integrate RII Track-1 activities with the Research and Education program.

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. This program is directed at those jurisdictions that have historically received lesser amounts of NSF Research and Development (R&D) funding. Twenty-eight jurisdictions, including twenty-five states (Alabama, Alaska, Arkansas, Delaware, Hawaii, Idaho, Kansas, Kentucky, Louisiana, Maine, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Mexico, North Dakota, Oklahoma, Rhode Island, South Carolina, South Dakota, Vermont, West Virginia, and Wyoming), the Commonwealth of Puerto Rico, the Territories of Guam and the U. S. Virgin Islands are currently eligible to participate in the RII program. Through this program, NSF establishes partnerships with government, higher education, and industry that are designed to effect sustainable improvements in a jurisdiction's research infrastructure, R&D capacity, and hence, its national R&D competitiveness.

   Research Infrastructure Improvement 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.

- Kelvin Chu, Program Director, 940, telephone: (703) 292-7860, fax: (703) 292-9047, email: kchu@nsf.gov

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

- 47.041 --- Engineering
- 47.049 --- Mathematical and Physical Sciences
- 47.050 --- Geosciences
- 47.070 --- Computer and Information Science and Engineering
- 47.074 --- Biological Sciences
- 47.075 --- Social Behavioral and Economic Sciences
- 47.076 --- Education and Human Resources
- 47.079 --- International and Integrative Activities (IIA)
- 47.081 --- Office of Experimental Program to Stimulate Competitive Research

Award Information

Anticipated Type of Award: Cooperative Agreement

Estimated Number of Awards: 8

Anticipated Funding Amount: $32,000,000 in FY 2014 (pending quality of proposals and availability of funds).

Eligibility Information

Organization Limit:

Proposals may only be submitted by the following:

- Only jurisdictions that meet the EPSCoR eligibility criteria may 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):

    August 06, 2013

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

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. Criteria for Eligibility to Participate in the Research Infrastructure Improvement 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 NSF research support is equal to or less than 0.75 percent of the total NSF research and related activities 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.

Newly 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 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 NSF EPSCoR 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.

Please see information available at the NSF EPSCoR Website for eligibility and other information pertaining to the program.

II. PROGRAM DESCRIPTION

RII Track-1 Program Description

The science and engineering research program for which improved infrastructure is requested is the central piece of the RII Track-1 proposal. The intellectual merit and broader impacts of the proposed activities provide the rationale for the requested infrastructure investments that, 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 NSF funding mechanisms.

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 Plan (S&T Plan). The jurisdiction must have in place an 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 development of a nationally competitive academic R&D capability. Once in place, this academic R&D capability is expected to provide a diverse well-prepared STEM-enabled workforce and a key ingredient for an innovation and commercialization strategy to stimulate the jurisdiction's economic development.

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 jurisdiction's EPSCoR 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 with this proposal. An EPSCoR RII Track-1 proposal must describe the strategy and implementation mechanisms to develop, use, and sustain the diverse human, physical, and technological resources within the jurisdiction.

Successful proposals provide sound platforms and opportunities for enhanced academic R&D competitiveness by a jurisdiction's colleges and universities, including implementation mechanisms that have a high probability of realizing stated goals and objectives and pragmatic plans for generation of sustained non-EPSCoR support. 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.

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 and implementation plan with realistic metrics and achievable milestones for subsequent, sustained non-EPSCoR funding from federal, jurisdictional, or private sector sources.

The RII Track-1 proposal should include major accomplishments from prior NSF EPSCoR support and 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. A detailed plan for achieving sustainable success in science and engineering research and education, together with formative and summative evaluation plans with measurable metrics, must be included.

Infrastructure enhancement strategies should sharply focus available resources on research and research-based education and innovation activities that are consistent with specified long-term jurisdictional and regional objectives. In conjunction with this focus, the proposed education and innovation projects, workforce development efforts and cyberinfrastructure activities 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 NSF large scale and cross-cutting competitions.

A. Examples of RII Track-1 Activities

Examples of RII Track-1 activities for human and physical infrastructure improvement include, but are not limited to:

- Proposing problem-driven research that requires a comprehensive and integrative approach to a grand challenge issue;

- 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; (this should connect to new and emerging areas)
- 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; strong intellectual engagement of participants from colleges and universities in EPSCoR jurisdictions 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; and
- Support for projects targeting the full diversity of institutions across the jurisdiction, including 2-year, 4-year, rural, and minority-serving institutions.
- Support for activities that promise extraordinary outcomes including revolutionizing entire disciplines, creating new fields, or disrupting accepted theories and perspectives.

EPSCoR support of a proposed research improvement activity should not duplicate other available federal, jurisdictional, or institutional resources and should add significant value to increase scientific competitiveness at the national or regional level.

B. Eligible Organizations and Institutions

Proposals requesting funds for research infrastructure improvement may include support for academic, profit, and non-profit organizations, as well as individuals employed by such organizations, both inside and outside the jurisdiction (for additional details, see next paragraph). 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 as well as international 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.

III. AWARD INFORMATION

Anticipated Type of Award: Cooperative Agreement

Estimated Number of Awards: 8

Duration: Award duration of up to 5 years

Anticipated Funding Amount: $32,000,000 in FY 2014 (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, 2014, will be eligible to compete in the FY 2014 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 the EPSCoR eligibility criteria may 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.

Important Proposal Preparation Information: FastLane will check for required sections of the proposal, in accordance with *Grant Proposal Guide* (GPG) instructions described in Chapter II.C.2. The GPG requires submission of: Project Summary; Project Description; References Cited; Biographical Sketch(es); Budget; Budget Justification; Current and Pending Support; Facilities, Equipment & Other Resources; Data Management Plan; and Postdoctoral Mentoring Plan, if applicable. If a required section is missing, **FastLane will not accept the proposal.**

Please note that the proposal preparation instructions provided in this program solicitation may deviate from the GPG instructions. If the solicitation instructions do not require a GPG-required section to be included in the proposal, insert text or upload a document in that section of the proposal that states, "Not Applicable for this Program Solicitation." Doing so will enable FastLane to accept your proposal.

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/Principal Investigator.
- 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 (*1 page 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 project organization, activities in research and education and their integration. In separate statements provide a succinct summary of the intellectual merit and broader impacts of the proposed project. Proposals that do not contain the Project Summary, including an overview and separate statements on intellectual merit and broader impacts will not be accepted by FastLane or will be returned without review.
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. In addition to the requirements contained in GPG Chapter II C.2.d, the project description must include clear, succinct goals, objectives, and activities for proposed research and research-based education, workforce development, and sustainability beyond the project period. This section of the proposal should include brief descriptions of the current status of the jurisdiction's academic R&D enterprise, the jurisdiction's S&T plans and goals, and how the infrastructure for which NSF support is being requested will enable successful pursuit

of those S&T 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*).** Describe the current status of the jurisdiction's academic R&D enterprise, including the strengths, barriers, and opportunities for development of the academic institutions in support of overall R&D objectives. The proposal narrative should provide a convincing rationale for the project's scientific vision, and indicate how the overall strategy, proposed implementation mechanisms and infrastructure support will improve academic research competitiveness.

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. This section should include a description of the activities and impacts of previous RII awards, including broader impacts. New hires from previous RII awards, their retention status, and the highlights of their research and education accomplishments including external grants, should be described. This section should indicate how many of the prior RII Track-1 awards' participants are part of this proposal.

4.3 **Research and Education Program (*17 pages maximum*).** 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 proposed research in each the focus area in the context of other efforts in the field (with appropriate references), state the major challenges, and comment on novelty and/or originality of the proposed approach. Identify the senior leadership and estimate the numbers of postdoctoral, graduate, and undergraduate research participants. 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. Describe interactions with other groups and organizations within the jurisdiction, and at the national and international levels. The research program description must demonstrate how each focus area contributes to the jurisdiction's strategy for the advancement of future research, education, 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 frontiers of knowledge and the jurisdiction's future research competitiveness in the proposed research areas.

4.3.1 *Workforce Development*. The scope of RII Track-1 activities must include specific STEM workforce development activities that are integrated with the research program and contribute to the preparation of a new cadre of skilled researchers, innovators, and educators. The proposed Research and Education Program should present an implementation strategy with initial baseline assessment, clearly articulated goals, milestones, and timelines. Plans should include opportunities for early career faculty and training opportunities for students at different levels of the STEM education continuum, describe mentoring and professional development of students and junior researchers, and include a focus on minority-serving, 2- and 4-year institutions. Efforts that focus on high school and undergraduate education must describe the basis for their inclusion. The narrative should indicate synergies between proposed workforce development activities and other NSF investments in the jurisdiction that focus on strengthening STEM workforce development.

4.3.2 *Cyberinfrastructure*. Critical to advances in research and education in science and engineering is the cyberinfrastructure capabilities. Integration of activities to develop, improve, and deploy cyberinfrastructure appropriate to pursuit of the goals of the RII Track-1 project's Research and Education program are required.

4.3.3 *Seed Funding and Emerging Areas*. This mechanism provides flexibility for the RII Track-1 to respond quickly and effectively to new opportunities, pursue high risk/high impact and transformative research, and 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 proposed RII Track-1 project. 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 essential for jurisdictions 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 (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 plans for its improvement with specific milestones. Describe the research basis for the choice in diversity improvement strategies. Activities that expand institutional participation, develop student career options, or facilitate entry of women and members of underrepresented groups including persons with disabilities into the STEM pipeline are particularly encouraged. If a strategy is being adapted from another successful project, cite the source of the activity. This narrative must describe how the full diversity of the jurisdiction's resources will be engaged in the STEM enterprise as an integral part of the.infrastructure improvement and research activities for which funding is being requested.

4.5 **Partnerships and Collaborations (*3 pages maximum).*** Partnerships allow leveraging of resources, and promote sustainability. Partnerships may seed science, engineering, and education collaborations that promote innovation and STEM pipeline development, and can range in scope from intra-jurisdictional to inter-jurisdictional, regional, national, or international. Proposed activities should demonstrate how the proposed partnerships and collaborations directly contribute to the attainment of project goals, increase research competitiveness, build and strengthen the STEM pipeline, provide opportunities for commercialization of research and education products, or pave the way for economic development. Proposed partnerships and collaborations may involve unfunded partners or stakeholders in the project. All activities should be detailed with clearly articulated goals, milestones, and timelines. The Partnerships and Collaborations section should specifically articulate partnerships with large NSF or other federally funded projects, including cyberinfrastructure resources, if applicable.

4.6 **Communication and Dissemination Plan (*2 pages maximum*).** Communication and dissemination are essential for successful collaboration, development of a diverse, well-trained STEM workforce and a scientifically informed citizenry. The communication plan should indicate mechanisms for communication between teams, activities that promote sharing of data, visualization and analysis. Including stakeholder input in project design and dissemination of the results, benefits, and processes of science to stakeholders and citizens at all educational levels builds scientific literacy and strengthens educational and research

capacity throughout jurisdictions. The proposal should clearly describe plans for two-way communication with stakeholders and broad dissemination of the project's results and impacts. The Communication and Dissemination plan should have a strong connection to the Research and Education Plan; activities should be linked to specific project goals.

4.7 **Sustainability Plan (*4 pages maximum*).** RII Track-1 programs are catalytic, jurisdiction-wide investments in research and education infrastructure. A detailed plan for long-term sustainability of the proposed activities is required.

4.7.1 *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. Describe how the research and organizational/partnership opportunities support the education goals of the jurisdiction. Outline plans for faculty and student recruitment and retention activities, conferences, summer schools, and related activities, as appropriate.

4.7.2 *Post RII Track-1 extramural funding*. Successful RII Track-1 programs form the basis for leveraging and/or obtaining non-EPSCoR funding from the NSF as well as other extramural sources. Describe the vision and specific plans for sustaining the research activities beyond the duration of RII Track-1 support. Present a detailed strategy and timeline to generate subsequent, sustained, non-EPSCoR funding from federal, jurisdictional, or private sector sources. Include strategic, achievable goals for proposals submissions to NSF from RII participants during the award period, for the research thrust areas, cyberinfrastructure, and education outreach.

4.8 **Management, Evaluation and Assessment Plan (*7 pages maximum*).** A comprehensive plan for management, as well as the evaluation and assessment of the RII project must be included.

4.8.1 *Project Management Team*. The project management team is responsible for implementing the proposed research infrastructure improvement activities and managing all aspects of the project. It is critical that the team be sufficient in number, diversity, and levels of expertise to assume technical and administrative oversight and accomplishment of project milestones. The management structure of the project should include descriptions of:

- 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 affiliations and aggregate 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.

The description of the project management should include mechanisms to effectively use resources and respond to emerging opportunities as they develop. Furthermore, the efforts of the management team's leadership in assessing project performance and enhancing public understanding about the importance of the role of science in service to society should be described.

4.8.2 *Evaluation and Assessment.*

The description of evaluation and assessment activities must show the milestones and metrics selected to assess and evaluate demonstrable impacts and achievements of all required elements of the proposed program during the award period, and tracking mechanisms after the award period. The description should include annual metrics and milestones that indicate how the project is progressing in forming partnerships and collaborations, and include review and evaluation of RII Track-1 research and education activities by a group of independent, external experts during the award period. This team must be diverse both demographically and in expertise needed to evaluate the project's progress. Reports prepared by these evaluation teams are to be conveyed to NSF EPSCoR in a timely manner.

Formative and summative assessment of project goals, milestones and metrics is required. This section should specify the mechanism regarding how the results/recommendations from evaluation and assessment will be fed back into project goals, milestones and metrics to ensure continual progress and attainment of project goals and impacts during the project period.

4.8.3 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

10. **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 Equipment							
Research Area 2 (Title) salaries and fringe benefits							
Research Area 2 Equipment							
Research Area 3 (as needed)							
Workforce Development							
Cyberinfrastructure							
Seed Funding							
Diversity Plan							
Partnerships and Collaborations							
Diversity Plan							
Communications and OutreachPlan							
Sustainability Plan							
Management (include all administrative expenses_							
Evaluation and Assessment							
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):

    August 06, 2013

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

A comprehensive description of the Foundation's merit review process is available on the NSF website at:

Proposers should also be aware of core strategies that are essential to the fulfillment of NSF's mission, as articulated in *Empowering the Nation Through Discovery and Innovation: NSF Strategic Plan for Fiscal Years (FY) 2011-2016*. These strategies are integrated in the program planning and implementation process, of which proposal review is one part. NSF's mission is particularly well-implemented through the integration of research and education and broadening participation in NSF programs, projects, and activities.

One of the core strategies in support of NSF's mission is to foster integration of research and education through the programs, projects and activities it supports at academic and research institutions. These institutions 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 variety of learning perspectives.

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

A. Merit Review Principles and Criteria

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

1. Merit Review Principles

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

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

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

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

2. Merit Review Criteria

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

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

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

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

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

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

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

partnerships between academia, industry, and others; improved national security; increased economic competitiveness of the United States; and enhanced infrastructure for research and education.

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

Additional Solicitation Specific Review Criteria

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, communication and dissemination, and technology transfer plans aligned with the central research themes and with the jurisdiction's S&T Plan? How do the proposed strategies utilize the strengths and opportunities identified in the proposal and to address barriers? How clearly are the proposed research activities positioned in the context of other efforts in the field? Do the references reflect the current state of knowledge in the field? What meaningful impact on capacity and capability in the jurisdiction is expected as a result of this proposed project? Is there sufficient 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? Is the basis for the selection of specific diversity activities well-justified? 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. **Partnerships and Collaborations Plan** - How do the proposed partnerships and collaborations advance the project goals? Is the basis for the selection of specific partnership activities well-justified? What is the significance of the value brought to the project from the proposed collaborations? Will the partnerships and collaborations and their outputs be sustainable after the award period?

5. **Workforce Development** - What are the transformative and/or innovative features of the proposed plans for workforce development? How well do the workforce development activities 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? How will the plans and activities lead to transformative improvements in workforce preparation and the competitiveness of the jurisdiction? 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?

6. **Cyberinfrastructure** - How well do the cyberinfrastructure activities support and integrate with the proposed research activities? To what extent are the cyberinfrastructure activities likely to enhance capacity for discovery, innovation, and education in science and engineering? How well do the cyberinfrastructure activities position the proposing jurisdiction for future cyberinfrastructure development?

7. **Communication and Dissemination 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 NSF EPSCoR and are they likely to be effective?

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? Are there strategic, achievable goals for proposals submissions to NSF, and milestones for all extramural funding, from RII participants during the award period, for the research thrust areas, cyberinfrastructure, and education outreach?

9. **Project Management** - How well described is the management structure and how will the management structure impact the potential effectiveness of the leadership team? Is the role of the management team clear in ensuring that project goals are attained? 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?

10. **Evaluation and Assessment** - 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? How will the evaluation process result in reliably capturing project accomplishments and 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?

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.

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 prior to the end of the current budget period. (Some programs or awards require submission of more frequent project reports). Within 90 days following expiration of a grant, the PI also is required to submit a final project report, and a project outcomes report for the general public.

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

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

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

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:

- Kelvin Chu, Program Director, 940, telephone: (703) 292-7860, fax: (703) 292-9047, email: kchu@nsf.gov

- Sean C. Kennan, Program Director, 940, telephone: (703) 292-7575, fax: (703)292-9047, email: skennan@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.

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, "My NSF" is an information-delivery system designed to keep potential proposers and other interested parties apprised of new NSF funding opportunities and publications, important changes in proposal and award policies and procedures, and upcoming NSF Grants Conferences. Subscribers are informed through e-mail or the user's Web browser each time new publications are issued that match their identified interests. "My NSF" also is available on NSF's website at http://www.nsf.gov/mynsf/.

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

ABOUT THE NATIONAL SCIENCE FOUNDATION

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

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