

# Academic Research Infrastructure Program: Recovery and Reinvestment (ARI-R<sup>2</sup>)

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## PROGRAM SOLICITATION

NSF 09-562

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### REPLACES DOCUMENT(S):

NSF 96-12

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#### National Science Foundation

Office of Integrative Activities

Directorate for Biological Sciences

Directorate for Computer & Information Science & Engineering

Directorate for Education & Human Resources

Directorate for Engineering

Directorate for Geosciences

Directorate for Mathematical & Physical Sciences

Directorate for Social, Behavioral & Economic Sciences

Office of Cyberinfrastructure

Office of International Science and Engineering

Office of Polar Programs

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

July 01, 2009

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

August 24, 2009

## IMPORTANT INFORMATION AND REVISION NOTES

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The solicitation is a revision of the 1996 Academic Research Infrastructure Program: Facilities Modernization Solicitation.

The ARI-R<sup>2</sup> program will invest in the repair, renovation, or in exceptional cases, the replacement of **existing** research facilities. It will not support the construction of new research facilities.

Awards made in response to this solicitation will be funded under the American Recovery and Reinvestment Act of 2009 (ARRA) (Public Law 111-5). As such, awards will include special reporting requirements and other non-standard terms and conditions. Unless otherwise specified, ARRA funding should be considered one-time funding.

Organizations may submit one proposal, either as lead or as a sub-awardee but not both. Sub-awards solely for the provision of a widely recognized commercial service, for example, architectural design, construction, or telecommunications services, are not subject to this restriction.

A Letter of Intent (LOI) must be submitted by the organization's sponsoring project office by the July 1, 2009 LOI deadline in order for an organization's full proposal to be eligible for review.

## SUMMARY OF PROGRAM REQUIREMENTS

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### General Information

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#### Program Title:

Academic Research Infrastructure Program: Recovery and Reinvestment (ARI-R<sup>2</sup>)

#### Synopsis of Program:

Scientific discoveries are emerging at an accelerated pace, presenting new frontiers for exploration, stimulating innovation and economic growth, and driving the development of new tools and systems to support research. Likewise, the convergence of disciplines and the cross-fertilization that characterized contemporary science and engineering have made collaboration a centerpiece of the 21<sup>st</sup> century science and engineering enterprise. As new scientific opportunities and processes have emerged, the Nation's research facility requirements have also evolved and changed. In 2005, NSF estimated that academic institutions then had at least \$3.6 billion in deferred projects to repair and renovate science and engineering research facilities (FY05 Survey of Science and Engineering Research Facilities.) As a result of the American Recovery and Reinvestment Act of 2009, NSF will invest \$200 million in the Nation's research facilities and research training infrastructure. This investment will advance the science and engineering research enterprise at many institutions.

The purpose of this program is to enhance the Nation's existing research facilities where sponsored and/or unsponsored research activities and research training take place to enable next-generation research infrastructure that integrates shared resources across user communities. Consistent with NSF's mission to strengthen the U.S. science and engineering enterprise, the ARI-R<sup>2</sup> program will:

- Update existing research facilities at institutions of higher education (including graduate and undergraduate institutions, among which are included community colleges) and other non-profit research organizations (e.g., independent research museums, independent research laboratories, and research consortia) in order to support research that can address the challenges of the 21<sup>st</sup> century.
- Enable academic departments, disciplinary and cross-disciplinary units, or multi-organization consortia to renovate research facilities through the addition or augmentation of cyberinfrastructure, other than general-purpose computing systems or data storage systems, to create environments that enhance research and integrate research with education.
- Improve access to and increase use of next-generation research facilities for researchers, educators and students.
- Assist research organizations, including those that have historically received limited Federal research and development funds, to improve their science and engineering research environments.

#### **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.*

- Stephen Meacham, telephone: (703) 292-8040, email: [smeacham@nsf.gov](mailto:smeacham@nsf.gov)

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

- 47.041 --- Engineering
- 47.049 --- Mathematical and Physical Sciences
- 47.050 --- Geosciences
- 47.070 --- Computer and Information Science and Engineering
- 47.074 --- Biological Sciences
- 47.075 --- Social Behavioral and Economic Sciences
- 47.076 --- Education and Human Resources
- 47.078 --- Office of Polar Programs
- 47.079 --- Office of International Science and Engineering
- 47.080 --- Office of Cyberinfrastructure

## **Award Information**

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**Anticipated Type of Award:** Standard Grant or Cooperative Agreement

**Estimated Number of Awards:** 100 to 120 Approximately 100 awards ranging from a total of \$250,000 to \$2,000,000; approximately 6-10 awards ranging from a total of over \$2 million to \$5 million; approximately 3-5 awards ranging from a total of over \$5 million to \$10 million. The award duration for ARI-R<sup>2</sup> grants up to \$2 million is up to three years; award duration for grants over \$2 million up to \$10 million is up to four years.

**Anticipated Funding Amount:** \$200,000,000 (Proposals submitted in response to this program solicitation will be competing for about \$200 million, pending availability of funds provided under the American Recovery and Reinvestment Act of 2009.)

## **Eligibility Information**

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#### **Organization Limit:**

Proposals may only be submitted by the following:

- Universities and two- and four-year colleges (including community colleges) accredited in, and having a campus located in, the United States, its territories and possessions. Distinct academic campuses (that award their own degrees, have independent administrative structures, admissions policies, alumni associations, etc.) within multi-campus systems qualify as separate institutions
- Independent non-profit research museums, independent non-profit research institutions and laboratories, and non-profit research consortia located in the United States, its territories and possessions. These organizations must have an independent administrative and financial structure. Non-profit research consortia must also have 501(c)(3) tax status. Any organization can collaborate in a consortium; however, only eligible organizations can receive NSF funds.
- Organizations that may NOT receive funds include foreign organizations (e.g., foreign academic institutions, museums and laboratories); research arms of for-profit firms; and Federally Funded Research and Development Centers (FFRDCs). Construction, engineering, architecture and other facility service divisions of for-profit firms that will carry out the work of renovation and repair may receive NSF funds as

sub-awards. The American Recovery and Reinvestment Act of 2009 states that funds may not be used by any State or local government, or any private entity, for any casino or other gambling establishment, aquarium, zoo, golf course, or swimming pool.

**PI Limit:**

None Specified

**Limit on Number of Proposals per Organization:**

One (1), either as the lead organization or as a sub-awardee but not both. Sub-awards solely for the provision of a widely recognized commercial service, for example, architectural design, construction, or telecommunications services, are not subject to this restriction.

Collaborative proposals are welcome. Collaborative proposals may **only** be submitted as a single proposal in which a single award is being requested. The involvement of partner organizations should be supported through sub-awards administered by the submitting organization. Partners in collaborative proposals should not submit separate proposals.

**Limit on Number of Proposals per PI:**

None Specified

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## Proposal Preparation and Submission Instructions

### A. Proposal Preparation Instructions

- **Letters of Intent:** Submission of Letters of Intent is required. Please see the full text of this solicitation for further information.
- **Preliminary Proposal Submission:** Not Applicable
- **Full Proposal Preparation Instructions:** This solicitation contains information that deviates from the standard NSF Proposal and Award Policies and Procedures Guide, Part I: Grant Proposal Guide (GPG) proposal preparation guidelines. Please see the full text of this solicitation for further information.

### B. Budgetary Information

- **Cost Sharing Requirements:** Cost Sharing is not required under this solicitation.
- **Indirect Cost (F&A) Limitations:** Indirect costs (F&A) are not considered project costs eligible for funding through the ARI-R<sup>2</sup> program. See Section V.A.6.a for more details about eligible project costs.
- **Other Budgetary Limitations:** Other budgetary limitations apply. Please see the full text of this solicitation for further information.

### C. Due Dates

- **Letter of Intent Due Date(s) (required)** (due by 5 p.m. proposer's local time):  
July 01, 2009
- **Full Proposal Deadline(s)** (due by 5 p.m. proposer's local time):  
August 24, 2009

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## 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.

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## Award Administration Information

**Award Conditions:** Additional award conditions apply, including but not limited to the wage rate provision in section 1606 of the American Recovery and Reinvestment Act of 2009. 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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## TABLE OF CONTENTS

[Summary of Program Requirements](#)

I. [Introduction](#)

- II. Program Description
- III. Award Information
- IV. Eligibility Information
- V. Proposal Preparation and Submission Instructions
  - A. Proposal Preparation Instructions
  - B. Budgetary Information
  - C. Due Dates
  - D. FastLane Requirements
- VI. NSF Proposal Processing and Review Procedures
  - A. NSF Merit Review Criteria
  - B. Review and Selection Process
- VII. Award Administration Information
  - A. Notification of the Award
  - B. Award Conditions
  - C. Reporting Requirements
- VIII. Agency Contacts
- IX. Other Information

## I. INTRODUCTION

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Scientific discoveries are emerging at an accelerated pace, presenting new frontiers for exploration and stimulating innovation and economic growth. The conduct of science and engineering is changing and evolving, in part, due to the expansion of networked cyberinfrastructure and new technologies, such as computational modeling, sensor networks and visualization environments. These enable observation, analysis and modeling of increasingly complex systems across multiple disciplines and scales. These technologies are making possible deeper understanding of phenomena in science and engineering; for example, helping to explain how networks of cells communicate, how simple human interactions yield complex, collective behavior, and how physical, chemical, biological and socio-economic processes interact to determine how the climate system evolves at global and regional scales.

As new scientific opportunities emerge, the Nation's research facility requirements also evolve and change. Based on a 2005 study, NSF estimates, academic institutions have at least \$3.6 billion in deferred projects to repair and renovate science and engineering research space (FY 2005 Survey of Science and Engineering Research Facilities.) Renovations can be of many kinds, from updated wet labs and improved retractable roofs for telescopes to new telecommunications capabilities and network connections. The American Recovery and Reinvestment Act of 2009 provides \$200 million for NSF to fund the Academic Research Infrastructure (ARI-R<sup>2</sup>) Program, which is designed to support 21<sup>st</sup> century research and research training infrastructure in our Nation's academic institutions, independent non-profit research museums, independent non-profit research laboratories, and non-profit research consortia. This will enable the transformation of the science and engineering research enterprise at many institutions.

## II. PROGRAM DESCRIPTION

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The purpose of this program is to enhance the Nation's existing research facilities so that they provide next-generation research infrastructure and facilitate the integration of researchers with shared resources such as remote instruments and research platforms, data repositories, and national computing facilities.

The program encompasses improvement(s) of research facilities, i.e., repair or renovation or, in exceptional cases, replacement of shared scientific and engineering research and research training space, and its underlying infrastructure. Underlying infrastructure may include:

- Routine sustaining infrastructure (e.g., laboratory electrical and plumbing systems, etc.);
- Supporting equipment, i.e., basic durable components of a research facility that are integral to its operation (e.g., clean rooms, retractable roofs, etc.); and
- Network connectivity among research facilities, including circuit access or fiber deployment and the associated hardware and software.

The term "research facilities" refers to existing shared space where sponsored and/or unsponsored research activities and research training take place, either in "bricks and mortar," mobile or virtual research space.

**The intent of this program is to revitalize existing research facilities.** Funding will be limited to facilities where research and research training activities focus on NSF-supported fields of science and engineering. ARI-R<sup>2</sup> provides support for improvement of physical space, the mechanical systems of buildings and fixed equipment that is built into and generic to the research facility, not free-standing equipment. It is not the intent of the ARI-R<sup>2</sup> Program to fund: 1) new construction; 2) faculty or student offices, classrooms, seminar or conference rooms or other space facilities not devoted to scientific, engineering or educational research; or 3) basic building requirements such as elevators, loading/delivery areas or restrooms. In addition, the program will not support acquisition/development/installation of specific research instrumentation for, or the operation and maintenance of, the research facilities.

**Goals:** Consistent with NSF's mission to strengthen the U.S. science and engineering enterprise, the ARI-R<sup>2</sup> program's goals are to:

- Update existing research facilities at institutions of higher education (including graduate and undergraduate institutions, among which are included community colleges) and other non-profit research organizations (e.g., independent research museums, independent research laboratories, and research consortia) in order to support research that can address the

- challenges of the 21<sup>st</sup> century.
- Enable academic departments, disciplinary and cross-disciplinary units, or multi-organization consortia to renovate research facilities through the addition or augmentation of cyberinfrastructure, other than general-purpose computing systems or data storage systems, to create environments that enhance research and integrate research with education.
- Improve access to and increase use of next-generation research facilities for researchers, educators and students.
- Assist research organizations, including those that have historically received limited Federal research and development funds, to improve their science and engineering research environments.

**Web-page:** It is anticipated that a list of answers to frequently asked questions will be posted several weeks after the release of this solicitation. Proposing organizations are encouraged to check the OIA web-page, <http://www.nsf.gov/dir/index.jsp?org=OIA>, for a link to this list.

### III. AWARD INFORMATION

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Approximately 100 awards ranging from a total of \$250,000 to \$2,000,000; approximately 6-10 awards ranging from a total of over \$2 million to \$5 million; approximately 3-5 awards ranging from a total of over \$5 million to \$10 million. The award duration for ARI-R<sup>2</sup> grants up to \$2 million is up to three years; award duration for grants over \$2 million up to \$10 million is up to four years.

### IV. ELIGIBILITY INFORMATION

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**Organization Limit:**

Proposals may only be submitted by the following:

- Universities and two- and four-year colleges (including community colleges) accredited in, and having a campus located in, the United States, its territories and possessions. Distinct academic campuses (that award their own degrees, have independent administrative structures, admissions policies, alumni associations, etc.) within multi-campus systems qualify as separate institutions.
- Independent non-profit research museums, independent non-profit research institutions and laboratories, and non-profit research consortia located in the United States, its territories and possessions. These organizations must have an independent administrative and financial structure. Non-profit research consortia must also have 501(c)(3) tax status. Any organization can collaborate in a consortium; however, only eligible organizations can receive NSF funds.
- Organizations that may NOT receive funds include foreign organizations (e.g., foreign academic institutions, museums and laboratories); research arms of for-profit firms; and Federally Funded Research and Development Centers (FFRDCs). Construction, engineering, architecture and other facility service divisions of for-profit firms that will carry out the work of renovation and repair may receive NSF funds as sub-awards. The American Recovery and Reinvestment Act of 2009 states that funds may not be used by any State or local government, or any private entity, for any casino or other gambling establishment, aquarium, zoo, golf course, or swimming pool.

**PI Limit:**

None Specified

**Limit on Number of Proposals per Organization:**

One (1), either as the lead organization or as a sub-awardee but not both. Sub-awards solely for the provision of a widely recognized commercial service, for example, architectural design, construction, or telecommunications services, are not subject to this restriction.

Collaborative proposals are welcome. Collaborative proposals may **only** be submitted as a single proposal in which a single award is being requested. The involvement of partner organizations should be supported through sub-awards administered by the submitting organization. Partners in collaborative proposals should not submit separate proposals.

**Limit on Number of Proposals per PI:**

None Specified

### V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

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#### A. Proposal Preparation Instructions

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**Letters of Intent (required):**

Each eligible organization may submit only one Letter of Intent (LOI) in response to this solicitation. A Letter of Intent is required in order for an organization's full proposal to be eligible for review.

The purpose of the Letter of Intent is to assist NSF program staff in gauging the range of proposals that will be submitted and in planning the logistics of the review process. In addition, the information contained in a Letter of Intent is used to help avoid potential conflicts of interest in the review process. An LOI should include a synopsis of the project that describes the work in sufficient detail to permit an appropriate selection of reviewers. The Letter of Intent will not be externally evaluated or used to decide funding; however, submission of a Letter of Intent is mandatory for all organizations wishing to submit a full proposal.

The Letter of Intent must be submitted through FastLane by the organization's sponsored project office to the Office of Integrative Activities no later than July 1, 2009. It is expected that the Letter of Intent, which is to provide an overview of responsible personnel and accurate estimated costs, will be reviewed for eligibility, project appropriateness, and scope. The Letter of Intent must provide the following information:

- Title of Proposed Project
- PI Name
- Submitting Organization Name
- Name of facility to be renovated
- Project Synopsis (to be included in the Synopsis Box -- maximum of 2,500 characters): Summarize the need and justify the proposed renovation. Summarize the contributions, improvements and impacts on science and engineering and associated infrastructure.
- Project Personnel (to be included in the Other Comments Box -- maximum of 2,500 characters): Each project must identify (1) PI, (0-4) co-PIs, and (0-10) other senior project personnel. For each person, order the list as follows: Last name, first name; organization affiliation; title within organization (e.g., VP for Research, Professor, IT Manager, etc.); and project role (e.g., project director, project manager, project coordinator, etc.)

#### Letter of Intent Preparation Instructions:

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

- Sponsored Projects Office (SPO) Submission is required when submitting Letters of Intent
- Most relevant (one or two) NSF Division is required when submitting Letters of Intent
- Total requested funding is required when submitting Letters of Intent
- Type of facility renovation (e.g., wet labs, telecommunications upgrades, etc.) is required when submitting Letters of Intent
- Submission of multiple Letters of Intent is not allowed

**Full Proposal Instructions:** Proposals submitted in response to this program solicitation should be prepared and submitted in accordance with the guidelines specified 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](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-PUBS (7827) or by e-mail from [nsfpubs@nsf.gov](mailto:nsfpubs@nsf.gov).

In order for an organization's full proposal to be eligible for review, the organization's sponsoring project office must have submitted a Letter of Intent to NSF by the LOI deadline (July 1, 2009). **The title of the full proposal should match the title used in the Letter of Intent. The research facility and the nature of the proposed repair, renovation or replacement must be the same in the full proposal and in the Letter of Intent.** Full proposals that are not preceded by submission of a corresponding Letter of Intent will be returned without review.

Proposals submitted in response to this program solicitation should be prepared and submitted in accordance with the guidelines specified 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](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-PUBS (7827) or by e-mail from [nsfpubs@nsf.gov](mailto:nsfpubs@nsf.gov).

#### 1. Cover Sheet:

Select this program solicitation number from the pull-down list. Where asked to identify the NSF Unit of Consideration, select the most appropriate Division within an NSF Directorate or the most appropriate Office. Selection of the Division/Office should be based on the research activities taking place in the existing research facility. For multi-/cross-/trans-disciplinary facilities, the selection of more than one Division/Office is encouraged. Please note that all ARI proposals will be submitted automatically to the Office of Integrative Activities. However, your selection of the most appropriate one or two Divisions or Offices will help NSF identify the scope of the proposed activity.

**2. Project Summary** (maximum length, 1 page). Describe the proposed renovation of the existing research facility, the type of research and research training currently conducted in the facility, and the activities that would result if NSF were to fund the project. Proposals that do not **separately** address both merit review criteria (**intellectual merit and broader impacts**) within the one-page Project Summary will be returned without review.

**3. Project Description** (maximum length, 15 pages including results from prior NSF support). *The project description must include subsections (a)-(d), and address the intellectual merit and broader impacts of the proposed effort.* Suggested lengths for individual subsections are provided for guidance only.

##### a. Research Activities (suggested length: 5 pages).

Identify the senior personnel using the research facility for research/research training. Describe their research activities--identifying the specific questions being addressed, projects conducted in the facility, and sources of support, if any. In narrative or tabular form, list by number and type (e.g., senior personnel, postdoctoral fellows, graduate students, undergraduate students) the personnel using the facility on a regular basis.

##### b. Description of the Research Facility and Needs (suggested length: 5 pages)

Identify and describe the research facility including its nature, location, size, configuration, purpose, age, condition, and date of major repair, refurbishment and/or last renovation, if any. Discuss the adequacy, limitations, and constraints of the facility and the relevant impact of these conditions on research/research training activities in that facility. Indicate what research and research training that is not now feasible in the facility would be enabled by the proposed infrastructure project. Identify the specific space to be upgraded, the square footage of the facility, and indicate the percentage of time that the facility is used for research and research training and the fraction of space used for these purposes. Include the rationale for percentage determination if either is less than 100%. The description of needs should be comprehensive enough to allow reviewers to evaluate the extent to which the facility improvement is essential and appropriate.

c. *Impact of the Proposed Project* (suggested length: 2 pages)

Describe how the upgraded facility will contribute to meeting the research and research training goals and capabilities of the participating organization(s) (and the Nation, as appropriate). Specifically, address how the project will (i) transform science and engineering research and research training at the organization(s), (ii) improve the organization's science and engineering infrastructure while broadening participation in the science and engineering enterprise, and (iii) improve the quality, effectiveness, distribution or capacity of a research community, geographical region, or the nation's science and engineering enterprise.

d. *Project Management and Sustainability Plans* (suggested length 3 pages)

To be considered by the ARI-R<sup>2</sup> Program, a proposal **must** include a project management plan and a sustainability plan, as outlined below.

**Project management plan.** Describe the management plan for the conduct of the proposed project. (i) Identify the project manager and include his/her vita in the Biographical Sketches section (see item V.A.5). Discuss his/her experience and qualifications to plan, lead, coordinate, and manage the proposed project and to keep it on schedule. Specify the percentage of time that the project manager will dedicate to this project. (ii) Specify the mechanisms for input to the project by end users of the facility and by the institution's physical plant personnel, as appropriate. (iii) Summarize requisite logistics and phasing. Explain who will do the work in each phase of the project, e.g., in-house personnel or competitive contracting. Please note that if the proposed project is funded, this may be regarded as a commitment and be subject to audit. (iv) Provide a project schedule. Demonstrate that, if funded, the project can be initiated quickly and on schedule. (v) Assess the risks associated with each phase of the project and describe contingency plans for dealing with unforeseen problems. Proposers should include in their budgets sufficient contingency (i.e., escalation of cost plan) to address cost, schedule, and performance risks and identify the amounts. The proposal should describe the methodology used to calculate contingency as well as the procedure by which the proposer would authorize use of contingency to meet project goals. (vi) Provide a description of the regulatory permits required, if any, and justified estimates of the anticipated time and other resources needed to obtain these. In addition, for proposals over \$2 million, a detailed project execution plan should be included as a supplemental document. (See paragraph f below for further information.)

Sufficient detail should be provided to allow reviewers to analyze the likely success of the effort.

**Sustainability plan.** Provide detailed business and management plans for the maintenance, operation, and technical support of the modernized facility, including budget projections and sources of support for three years after the commissioning of the facility.

Sufficient detail should be given to enable reviewers to evaluate whether the facility includes appropriate technical expertise and infrastructure to allow effective usage, as well as facilitate multi-user accessibility.

\_\_\_ 4. **References Cited.** The format must follow the guidelines given in the GPG.

\_\_\_ 5. **Biographical Sketches.** The proposal must include two-page biographical sketches of the PI and any Co-PI(s) (i.e., those personnel listed on the cover sheet) as well as any designated senior personnel who are major users of the research facility. Please, provide a biographical sketch of the project manager. The format and content of biographical sketches **must** follow the guidelines given in the GPG.

\_\_\_ 6. **Budget and Budget Justification.** Two documents are required for proposal submission. The first document is Standard Form (SF) 424C *Budget Information - Construction Programs*, which is to be submitted as a supplemental document to provide detailed construction and associated costs of the proposed project's repair, renovation, or in exceptional cases, replacement activities. SF424C can be accessed at <http://www.nsf.gov/bfa/dias/policy/docs/sf424c.pdf>. The second required document is the NSF budget described in the GPG. You will need to complete SF424C prior to completing the NSF budget form in FastLane. The only cost item listed in the NSF budget form 1030 should be "Other Direct Costs" which should be carried over from the SF424C form. If a non-zero amount is included in Line 11, column C, of SF424C, then a detailed description of these costs and the basis of their estimation should be included in the Budget Justification section. If a non-zero amount is included in Line 13, column C, of SF424C, then a detailed description of the basis of their estimation should be included in the Budget Justification section. For guidance on completing SF424C, see specific instructions below.

a. **Eligible Project Costs.** Eligible project costs are those total project costs properly and reasonably allocable to the renovation of the existing research facility based on percentage of time or space or combination thereof that the facility is used for research and research training. Eligible project costs may include: architecture and engineering services, surveys, testing, inspections, relocation, demolition, removal, construction, fixed equipment, and related construction management costs. These costs are limited to the repair, renovation, or in exceptional cases, replacement of the research facilities and may not include costs of upgrading basic building requirements (e.g., building elevators) or spaces not devoted to research (e.g., classrooms and personal offices). It is not the intent of this program to fund new construction. It is expected that the submitting organization has all preliminary line drawings and plans, together with the appropriate estimates of in-house or vendor cost. This program does not fund a) any research and research training activities, b) facility operation and/or maintenance costs, c) indirect costs, and d) salary costs of submission-eligible organizations' employees. (Sub-awards solely for the provision of a widely recognized commercial service, for example, architectural design, construction, or telecommunications services, are not subject to restriction d.) Proposers should include in their budgets sufficient contingency (i.e., escalation of cost plan) to address cost, schedule and performance risks and describe the procedures and criteria by which the expenditures of contingency funds will be authorized.

b. **Instructions for Standard Form 424C.** Completing SF424C is required. Since the form's general instructions cover activities beyond the scope of the ARI program (i.e., new construction), **only** use the instructions provided below for completing the form in support of a proposal submission to the ARI-R<sup>2</sup> solicitation.

(i) **Introduction.** F424C is to be used to provide detailed costs associated with the proposed repair, renovation or, in exceptional cases, the replacement of a research facility, for which the submission-eligible organization is requesting funding through the ARI-R<sup>2</sup> program. If you have questions, please contact the ARI-R<sup>2</sup> cognizant program manager.

(ii) **Columns description**

In Column "a. *Total Cost*," the total cost associated with specific types of activities (designated cost classifications on the form) required to support the repair, renovation or, in exceptional cases, the replacement of research facilities should be entered here.

In Column "b. *Costs Not Allowable for Participation*," costs that are not supported by the ARI-R<sup>2</sup> program but are still required to undertake/complete the proposed project are entered here.

In Column "c. *Total Allowable Costs (Columns a minus b)*," the total requested funding amount for that category of activity to be supported by the ARI-R<sup>2</sup> program should be entered here.

(iii) Information/instructions regarding the various cost classifications as designated on the form.

Line 1. Administrative and legal expenses are not supported by ARI-R<sup>2</sup> funding. Therefore, any associated costs should be noted in Column B *Costs Not Allowable*.

Line 2. Enter estimated site and right(s)-of-way costs (e.g., easements or, in exceptional circumstances, leases not to extend beyond the award duration).

Line 3. Enter estimated relocation costs of research facility (e.g., one-way moving costs). These may not include costs covering temporary space requirements (e.g., leases for alternate site space), relocation payments to displaced persons and businesses, relocation advisory assistance, etc.

Line 4. Enter estimated basic engineering fees related to the research facility's repair, renovation or, in exceptional cases, replacement. (This includes start-up services and preparation of project performance work plan.)

Line 5. Enter estimated engineering costs, such as surveys and tests, etc. required to repair, renovate or, in exceptional cases, replace the research facility.

Line 6. Enter estimated engineering inspection costs.

Line 7. Enter estimated costs of site preparation and restoration associated with the repair, renovation or, in exceptional cases, replacement of the research facility.

Line 8. Enter estimated demolition and removal costs.

Line 9. Enter estimated cost of contract(s) to repair, renovate or, in exceptional cases, replace the research facility.

Line 10. This item applies only to fixed, generic-to-the-facility equipment. It does not cover research-related instrumentation that would be located in the research facility. See the Glossary in section IX of this solicitation.

Line 11. Enter estimated miscellaneous costs. The basis for the estimate of any costs entered in column C of this line, together with a detailed description of the cost items, should be described in the Budget Justification accompanying NSF Form 1030.

Line 12. Total of items 1 through 11.

Line 13. Enter estimated contingency costs (i.e., escalation of cost plans). The basis for the estimate of any costs entered in column C of this line should be described in the Budget Justification accompanying NSF Form 1030.

Line 14. Enter the total of lines 12 and 13.

Line 15. Enter estimated program income to be earned during the grant period, e.g., salvaged materials, etc.

Line 16. Subtract line 15 from line 14.

Line 17. Enter in this block the amount requested for funding from NSF under the ARI-R<sup>2</sup> program. This amount should also be entered on the NSF budget form on the line "Other Direct Costs."

c. *Instructions for NSF Budget Form.* Provide yearly and cumulative budget pages, listing those eligible project costs that NSF is being asked to fund. The total amount tallied on the SF424C form's Line 17 should be entered in the NSF budget document on the line *Total Other Direct Costs*. In the accompanying Budget Justification, describe the basis for the estimates provided for the costs entered in column C of lines 2-11 and 13 of SF424C.

7. Current and Pending Support. Provide, in a tabular form, a listing of all the current and pending support for the PI and Co-PIs. Please see the guidelines specified in the NSF Grant Proposal Guide, available at [http://www.nsf.gov/publications/pub\\_summ.jsp?ods\\_key=ggp](http://www.nsf.gov/publications/pub_summ.jsp?ods_key=ggp).

8. Facilities, Equipment, and Other Resources. Provide a listing of similar and/or related facilities at or near the performing organization as "Other Resources".

9. Supplementary Documents.

a. Provide up to three photographs, where appropriate, that best illustrate typical current conditions of the facility.

b. One set of page-size schematic drawings showing existing conditions and work to be done. Drawings must be an integral part of the proposal package and should be as extensive as possible. These drawings should show appropriate details of existing conditions and proposed work.

c. Include relevant, itemized vendor/contractor quotes, if applicable.

d. Include a completed supplementary budget document SF424C *Budget Information - Construction Programs*.

e. Provide a letter of commitment from the institution to operate the renovated facility for at least three years after project completion.

f. Provide a letter from the submitting organization confirming that any funds, from sources other than NSF, that are necessary for the project, e.g. salaries of in-house personnel and other costs shown in Column (b) of SF424C, are available and will be provided for the project should the proposal be funded.

g. Please include a copy of OMB Form SF424D, "[Assurances - Construction Programs](#)," signed by the submitting organization's Authorized Organizational Representative.

h. Proposals requesting more than \$2 million **must** include a detailed Project Execution Plan (not to exceed 30 pages).

Essential components of a Project Execution Plan for repair, renovation or replacement will vary slightly from project to project but most are likely to include:

- A brief summary of the research objectives motivating the proposal;
- A clear description of the science requirements to be fulfilled by the facility (to the extent possible, identifying minimum



essential as well as desirable quantitative requirements), which provide a basis for determining the scope of the associated repair, renovation or replacement;

- A description of the physical infrastructure and/or cyberinfrastructure necessary to achieve the research objectives;
- A work breakdown structure (WBS);
- A work breakdown structure dictionary defining the scope of WBS elements;
- A project budget, by WBS element;
- A description of the basis of estimate for budget components;
- A project risk analysis and description of the analysis methodology;
- A contingency budget and description of the method for calculating contingency;
- A resource-loaded project schedule;
- A description of the organizational structure of the project;
- Acquisition plans, sub-awards and subcontracting strategy;
- A plan outlining the project's technical and financial status reporting, including a description of financial and business controls and of the project management control system that will be used;
- A description of the governance mechanisms that will be used for the facility after the repair, renovation or replacement has been completed;
- A configuration control plan;
- A contingency management plan;
- Internal (to the project) and institutional oversight plans, advisory committees, and plans for building and maintaining effective relationships with the community that will eventually utilize the facility to conduct research and/or research training;
- Quality control and quality assurance plans;
- A description of any environmental plans, permitting and assessment needed;
- A description of any safety and health issues;
- Systems engineering requirements;
- Systems integration, testing, acceptance, commissioning and operational readiness criteria;
- Estimates of the costs of operating the facility after completion of the repair, renovation or replacement;
- A brief summary of the sustainability plan.

NO OTHER SUPPLEMENTARY DOCUMENTS ARE PERMITTED.

Proposers are reminded to identify the program solicitation number (NSF 09-562) 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.

## B. Budgetary Information

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

**Indirect Cost (F&A) Limitations:** Indirect costs (F&A) are not considered project costs eligible for funding through the ARI-R<sup>2</sup> program. See Section V.A.6.a for more details about eligible project costs.

**Other Budgetary Limitations: Wage Rates:** Pursuant to section 1606 of the American Recovery and Reinvestment Act of 2009 (ARRA), all laborers and mechanics employed by awardees and subrecipients on projects funded directly by or assisted in whole or in part by and through the Federal Government pursuant to ARRA shall be paid wages at rates not less than those prevailing on projects of a character similar in the locality as determined by the Secretary of Labor in accordance with the Davis-Bacon Act. Consult the Department of Labor's Wage and Hour Division (WHD) website at <http://www.wdol.gov/> for wage rate tables for your locality.

## C. Due Dates

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

July 01, 2009

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

August 24, 2009

## D. FastLane Requirements

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Proposers are required to prepare and submit all proposals for this program solicitation through use of the NSF FastLane system. Detailed instructions regarding the technical aspects of proposal preparation and submission via FastLane are available at: <http://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](mailto: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>.

## VI. NSF PROPOSAL PROCESSING AND REVIEW PROCEDURES

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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

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

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

#### **What is the intellectual merit of the proposed activity?**

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

#### **What are the broader impacts of the proposed activity?**

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

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

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

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

#### ***Integration of Research and Education***

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

#### ***Integrating Diversity into NSF Programs, Projects, and Activities***

Broadening opportunities and enabling the participation of all citizens -- women and men, underrepresented minorities, and persons with disabilities -- is essential to the health and vitality of science and engineering. NSF is committed to this principle of diversity and deems it central to the programs, projects, and activities it considers and supports.

#### **Additional Review Criteria:**

In addition to the evaluation criteria stated above, the ARI-R<sup>2</sup> program reviewers will assess the following criteria which are considered critical to the success of the program:

1. Need for the research facility enhancement. The adequacy and appropriateness of the existing facility for current and expected research and research training activities. Demonstrated need for improvement of the facility based on analysis of current condition and potential impact.
2. Project Impacts. The breadth and immediacy of the contributions of the project toward:
  - a. Transforming science and engineering at the proposing organization(s).
  - b. Improving the organization(s)' science and engineering infrastructure while broadening participation in the science and engineering enterprise.
  - c. Improving the quality, effectiveness, distribution or capacity of the Nation's science and engineering enterprise.
3. Soundness of the Project Management Plan, Sustainability Plan and Project Execution Plan (if required). Project management plans and budget, including the qualifications and experience of the project manager to plan, lead, coordinate and manage the project and to keep it on schedule. The effectiveness of the proposed mechanisms for interaction among different groups, the technical soundness of the proposed plans and risk analysis. Soundness of the timeline and ability to initiate project quickly if funded. The appropriateness of the costs and budget. The institutional sustainability plan for maintenance and operation of the research facility, including ability to meet requirements for budget, personnel and any other resources necessary for maintenance and operation.

### B. Review and Selection Process

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Proposals submitted in response to this program solicitation will be reviewed by Ad hoc Review and/or Panel Review, Site Visit Review, or Reverse Site Review.

In addition to panel review, the review of proposals for more complex projects may also include a reverse site visit review and/or a site visit 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

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### A. Notification of the Award

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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

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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](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](mailto: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](http://www.nsf.gov/publications/pub_summ.jsp?ods_key=aag).

#### Special Award Conditions:

The following special award conditions apply to awards made with funds appropriated under the American Recovery and Reinvestment Act of 2009 (ARRA):

#### American Recovery and Reinvestment Act of 2009 Award Terms

The Recovery Act mandates a significant level of transparency and accountability. The law and implementing guidance identify specific award conditions for awards made with Recovery Act funding. As such, recipients of ARRA funds must comply with standard NSF award conditions (Research Terms and Conditions or Grant General Conditions, as applicable) as well as the requirements set forth in ARRA, including, but not limited to, the reporting requirements specified in the award term entitled, "*Reporting and Registration Requirements under Section 1512 of the American Recovery and Reinvestment Act of 2009, Public Law 111-5*", as well as the accompanying OMB guidance (available on the Recovery.gov website.) Awardees are advised that failure to submit timely reports may result in NSF taking administrative action, including disallowance of costs or suspension or termination of the award.

All ARRA-funded awards will incorporate the following language:

"This award is funded under the American Recovery and Reinvestment Act of 2009 (ARRA) (Public Law 111-5) and is subject to the ARRA Terms and Conditions, dated April 2009, available on the NSF website at:

[http://www.nsf.gov/awards/managing/award\\_conditions.jsp?org=NSF](http://www.nsf.gov/awards/managing/award_conditions.jsp?org=NSF)

Given the goals of the Recovery Act, awardees also are advised that they are expected to expend funds in a timely manner on allowable award costs and that NSF will be monitoring awards for expenditures. If, after 12 months, no allowable expenditures have taken place, NSF may consider reducing or terminating the award and reallocating the funds.

#### ARRA Award-Specific

Grants awarded under this solicitation are subject to section 1606 of the American Recovery and Reinvestment Act of 2009 (ARRA). The clauses published at 29 C.F.R. section 5.5 and the appropriate Davis-Bacon wage determination(s) for the specific project(s) will become part of any grant awarded under this solicitation.

There also may be ARRA award specific terms, as necessary and appropriate.

### C. Reporting Requirements

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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.

For awards totaling from \$250,000 to \$2 million, grantees will be required to provide quarterly reports in addition to the standard annual and final reports, with final reports including photos of the finished project or other evidence, depending on what is appropriate, to document completion.

For awards totaling above \$2 million to \$10 million, in addition to the standard annual and final reports, reporting requirements are as follows:

- Monthly activity and financial reports;
- Quarterly project reports;
- At NSF's option, on-site review in year two of the award; and
- Photos / images of the final project to accompany the final report.

Depending upon the nature and progress of the activity, additional reporting requirements may be applied.

Special reporting requirements apply to awards funded under the American Recovery and Reinvestment Act of 2009 (ARRA). Please refer to the Special Award Conditions in Section VII.B. of this solicitation for additional information.

### VIII. AGENCY CONTACTS

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*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:

- Stephen Meacham, telephone: (703) 292-8040, email: [smeacham@nsf.gov](mailto:smeacham@nsf.gov)

For questions related to the use of FastLane, contact:

- FastLane Help Desk, telephone: 1-800-673-6188; e-mail: [fastlane@nsf.gov](mailto:fastlane@nsf.gov).

### IX. OTHER INFORMATION

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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>.

#### Glossary:

The following definitions apply to the ARI-R<sup>2</sup> program and this program solicitation:

**Research Facilities:** Existing shared space where sponsored and/or unsponsored research activities and research training take place either in "bricks and mortar," mobile or virtual research space.

**Renovation:** The renewal, restoration, upgrade, and update or modernization of existing research facilities.

**Repair:** Improvement of existing research facilities or otherwise putting them in a safe, usable, adequate and acceptable condition.

**Replacement:** Taking the place of an existing research facility which is obsolete, beyond repair or for which renovation is not cost effective. Replacement includes, but is not limited to: razing an existing research facility and constructing one of similar scope in its place; and relocating or consolidating existing research facilities.

**Research Training:** Training of individuals (including high school, undergraduate, and graduate students and faculty) in research techniques where such activities utilize the same facilities as research activities. Research training focuses on hypothesis-driven activity and does not include introductory science or engineering education, whether in a classroom or instructional laboratory.

**Fixed Equipment:** A piece of property that, when installed in a facility for continuing use in connection with the purpose of the facility, is generally considered an immovable part of the facility and cannot be reasonably removed without affecting the integrity of the structure of the facility or of the activities for which the facility is intended. Computers for scientific modeling, analysis, the control of research instruments and similar activities will not be considered fixed equipment. A computer whose primary purpose is as a network router, controller for a building's environmental systems, an integral component of maintaining telepresence in a virtual research facility, or similar functions may be considered fixed equipment.

## ABOUT THE NATIONAL SCIENCE FOUNDATION

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

NSF funds research and education in most fields of science and engineering. It does this through grants and cooperative agreements to more than 2,000 colleges, universities, K-12 school systems, businesses, informal science organizations and other research organizations throughout the US. The Foundation accounts for about one-fourth of Federal support to academic institutions for basic research.

NSF receives approximately 40,000 proposals each year for research, education and training projects, of which approximately 11,000 are funded. In addition, the Foundation receives several thousand applications for graduate and postdoctoral fellowships. The agency operates no laboratories itself but does support National Research Centers, user facilities, certain oceanographic vessels and Antarctic research stations. The Foundation also supports cooperative research between universities and industry, US participation in international scientific and engineering efforts, and educational activities at every academic level.

*Facilitation Awards for Scientists and Engineers with Disabilities* provide funding for special assistance or equipment to enable persons with disabilities to work on NSF-supported projects. See Grant Proposal Guide Chapter II, Section D.2 for instructions regarding preparation of these types of proposals.

The National Science Foundation has Telephonic Device for the Deaf (TDD) and Federal Information Relay Service (FIRS) capabilities that enable individuals with hearing impairments to communicate with the Foundation about NSF programs, employment or general information. TDD may be accessed at (703) 292-5090 and (800) 281-8749, FIRS at (800) 877-8339.

The National Science Foundation Information Center may be reached at (703) 292-5111.

The National Science Foundation promotes and advances scientific progress in the United States by competitively awarding grants and cooperative agreements for research and education in the sciences, mathematics, and engineering.

To get the latest information about program deadlines, to download copies of NSF publications, and to access abstracts of awards, visit the NSF Website at <http://www.nsf.gov>

- **Location:** 4201 Wilson Blvd. Arlington, VA 22230
- **For General Information** (NSF Information Center): (703) 292-5111
- **TDD (for the hearing-impaired):** (703) 292-5090
- **To Order Publications or Forms:**
  - Send an e-mail to: [nsfpubs@nsf.gov](mailto:nsfpubs@nsf.gov)
  - or telephone: (703) 292-7827
- **To Locate NSF Employees:** (703) 292-5111

## PRIVACY ACT AND PUBLIC BURDEN STATEMENTS

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The information requested on proposal forms and project reports is solicited under the authority of the National Science Foundation Act of 1950, as amended. The information on proposal forms will be used in connection with the selection of qualified proposals; and project reports submitted by awardees will be used for program evaluation and reporting within the Executive Branch and to Congress. The information requested may be disclosed to qualified reviewers and staff assistants as part of the proposal review process; to proposer institutions/grantees to provide or obtain data regarding the proposal review process, award decisions, or the administration of awards; to government contractors, experts, volunteers and researchers and educators as necessary to complete assigned work; to other government agencies or other entities needing information regarding applicants or nominees as part of a joint application review process, or in order to coordinate programs or policy; and to another Federal agency, court, or party in a court or Federal administrative proceeding if the government is a party. Information about Principal Investigators may be added to the Reviewer file and used to select potential candidates to serve as peer reviewers or advisory committee members. See Systems of Records, [NSF-50](#), "Principal Investigator/Proposal File and Associated Records," 69 Federal Register 26410 (May 12, 2004), and [NSF-51](#), "Reviewer/Proposal File and Associated Records," 69 Federal Register 26410 (May 12, 2004). Submission of the information is voluntary. Failure to provide full and complete information, however, may reduce the possibility of receiving an award.

An agency may not conduct or sponsor, and a person is not required to respond to, an information collection unless it displays a valid Office of Management and Budget (OMB) control number. The OMB control number for this collection is 3145-0058. Public reporting burden for this collection of information is estimated to average 120 hours per response, including the time for reviewing instructions. Send comments regarding the burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to:

Suzanne H. Plimpton  
Reports Clearance Officer  
Division of Administrative Services  
National Science Foundation  
Arlington, VA 22230

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