

Next-Generation National Nanotechnology Infrastructure Network (NG NNIN)

PROGRAM SOLICITATION

NSF 13-521



National Science Foundation

Directorate for Engineering

Directorate for Mathematical & Physical Sciences

Directorate for Computer & Information Science & Engineering

Directorate for Biological Sciences

Directorate for Geosciences

Directorate for Social, Behavioral & Economic Sciences

Directorate for Education & Human Resources

Office of International Science and Engineering

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

April 01, 2013

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

May 13, 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](#).

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

Next-Generation National Nanotechnology Infrastructure Network (NG NNIN)

Synopsis of Program:

The National Nanotechnology Infrastructure Network (NNIN) will reach its ten year authorized award life at the end of Fiscal Year 2013. The National Science Foundation is announcing in this solicitation an open competition to establish a Next-Generation National Nanotechnology Infrastructure Network (NG NNIN) for Fiscal Years 2014-2018.

NNIN has enabled major discoveries, innovations, and contributions to education and commerce within all disciplines of nanoscale science, engineering, and technology through NSF support of a national network of

university-based user facilities. These facilities have provided open access to leading-edge nanotechnology fabrication and characterization tools, instrumentation, and expertise for users across the nation from academia, small and large industry, and government. The core mission of NNIN has included national-level education and outreach programs to enable a diverse science and engineering workforce, the study of societal and ethical implications of nanotechnology including issues of environment, health, and safety, as well as important modeling and simulation capabilities.

The new competition for the NG NNIN will build on the concept of NNIN with a much broadened scope and user base. Support is being provided by all NSF Directorates and the Office of International Science and Engineering as an integral part of the NSF investment in Nanoscale Science and Engineering.

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.

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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 --- Office of International Science and Engineering

Award Information

Anticipated Type of Award: Cooperative Agreement

Estimated Number of Awards: 1

NSF plans to support a single national network.

Anticipated Funding Amount: \$16,000,000 Approximately \$16,000,000 will be available annually in this competition to fund the network for each year of the five-year award duration, subject to the availability of funds. An award will be in the form of a cooperative agreement made directly with the lead institution. An individual institution within the network is limited to receiving a maximum of \$2,500,000 per year for support of its facility. The lead institution may request funds beyond this limit for coordinated network purposes of management, outreach, and related activities. The initial award commitment will be for five years and may be renewed once for an additional five years, subject to external merit review. Recompetition will be required after ten years. The size of an award will depend on the plans and capabilities of the proposed network.

Eligibility Information

Organization Limit:

Proposals may only be submitted by the following:

- U.S. academic institutions are eligible to submit or participate in proposals for an integrated network of user facilities. Non-academic U.S. institutions and organizations, including national laboratories and private-sector companies, as well as non-U.S. institutions, may participate in network activities using their own resources.

PI Limit:

None Specified

Limit on Number of Proposals per Organization:

An institution may not be included in more than one proposal submitted in response to this solicitation.

Limit on Number of Proposals per PI:

None Specified

Proposal Preparation and Submission Instructions

A. Proposal Preparation Instructions

- Letters of Intent: Submission of Letters of Intent is required. Please see the full text of this solicitation for further information.
- Preliminary Proposal Submission: Not Applicable
- Full Proposals:
 - Full Proposals submitted via FastLane: NSF Proposal and Award Policies and Procedures Guide, Part I: Grant Proposal Guide (GPG) Guidelines apply. The complete text of the GPG is available electronically on the NSF website at: http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpg.
 - Full Proposals submitted via Grants.gov: NSF Grants.gov Application Guide: A Guide for the Preparation and Submission of NSF Applications via Grants.gov Guidelines apply (Note: The NSF Grants.gov Application Guide is available on the Grants.gov website and on the NSF website at: http://www.nsf.gov/publications/pub_summ.jsp?ods_key=grantsgovguide)

B. Budgetary Information

- Cost Sharing Requirements: Inclusion of voluntary committed cost sharing is prohibited.
- Indirect Cost (F&A) Limitations: Not Applicable
- Other Budgetary Limitations: Not Applicable

C. Due Dates

- Letter of Intent Due Date(s) (**required**) (due by 5 p.m. proposer's local time):
April 01, 2013
- Full Proposal Deadline(s) (due by 5 p.m. proposer's local time):
May 13, 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

The National Nanotechnology Infrastructure Network (NNIN) will reach its ten year authorized award life at the end of Fiscal Year 2013. The National Science Foundation is announcing in this solicitation an open competition to establish a Next-Generation National Nanotechnology Infrastructure Network (NG NNIN) for Fiscal Years 2014-2018.

NNIN has enabled major discoveries, innovations, and contributions to education and commerce within all disciplines of nanoscale science, engineering, and technology through NSF support of a national network of university-based user facilities. These facilities have provided open access to leading-edge nanotechnology fabrication and characterization tools, instrumentation, and expertise for users across the nation from academia, small and large industry, and government. The core mission of NNIN has included national-level education and outreach programs to enable a diverse science and engineering workforce, the study of societal and ethical implications of nanotechnology including issues of environment, health, and safety, as well as important modeling and simulation capabilities.

The national investment in nanotechnology through the National Nanotechnology Initiative (NNI)⁽¹⁾ places an important emphasis on ensuring an enabling infrastructure for future advancements in the field. The Congressional Research Service 2012 Report⁽²⁾ for Congress on NNI, summarizing 2012 assessments by the President's Council of Advisors on Science and Technology (PCAST) and the National Research Council (NRC), underlines the importance of maintaining and expanding the nanotechnology infrastructure, including university-based user facilities such as NNIN. NNIN is a supportive component of the NNI Federal investment of about \$1.7 billion per year, for which PCAST (2010)⁽³⁾ has recommended a ten-year vision for 2011-2020 approved by the President and Congress.

NSF recently convened a Workshop⁽⁴⁾ of recognized national experts to look broadly at the future needs and appropriate investments for a national infrastructure for nanotechnology. The workshop examined the opportunities provided by a nanotechnology infrastructure as well as the needs of the scientific and technological communities for realization of these opportunities. The workshop report, noting that the NNI vision anticipates transition over the next decade from active nanostructures toward systems of nanosystems, stated that sustained and predictable access to a broad range of state-of-the-art instrumentation and facilities for synthesis, processing, fabrication, characterization, modeling, and analysis of nanomaterials and nanosystems, including bio-nanosystems, is critically needed to achieve this objective. The workshop report urged formation of a new infrastructure network that will build on the concept of NNIN with a much broadened scope and user base.

The new competition is being supported by all NSF Directorates and the Office of International Science and Engineering as an integral part of the NSF investment in Nanoscale Science and Engineering.

(1) National Nanotechnology Initiative (NNI), including annual budget requests to Congress: <http://www.nsf.gov/nano>

(2) Congressional Research Service, The National Nanotechnology Initiative: Overview, Reauthorization, and Appropriations Issues, May 22, 2012, Washington, DC: <http://www.fas.org/sfp/crs/misc/RL34401.pdf>

(3) PCAST, Report to the President and Congress on the Third Assessment of the National Nanotechnology Initiative, March 2010, Washington, DC: <http://www.whitehouse.gov/sites/default/files/microsites/ostp/pcast-nano-report.pdf>

(4) Nanotechnology Infrastructure Workshop, April 3-4, 2012, Arlington, VA: http://www.nsf.gov/eng/eccs/nanotechnology_infrastructure_workshop_report.pdf

II. PROGRAM DESCRIPTION

The new competition for a Next-Generation National Nanotechnology Infrastructure Network (NG NNIN) builds upon the attributes sought in the original NNIN competition.

Original Attributes

The attributes are for a network comprised of both large and small university-based user facilities, including those at minority-serving institutions, at sites that are geographically distributed and with diverse and complementary tools, instruments, and capabilities to design, create, characterize, and measure novel nanoscale structures, materials, devices, and systems. These capabilities will be made available widely to the nation's researchers in academe, small and large industry, and government for scientific and engineering experiments and to stimulate technological innovation. The network will encompass the full spectrum of science and engineering that spans the scale from the nano to the micro domain. The network will have the flexibility to grow or reconfigure as needs arise; the culture of open-access facilities for any research project of merit; the fostering of research, education, and outreach in diverse fields; the necessary investments in capital equipment, processes, tools, and instrumentation; and the expert staffing needed for such a role.

Equally important is provision of the infrastructure for education, training, and workforce development in nanoscale science, engineering, and technology at all levels, including K-12, technician, undergraduate, graduate, and post graduate; and for outreach programs to reach potential users in the broader science and engineering communities whose work could benefit from advanced fabrication and instrumentation capabilities. The network should develop connections with other nationally funded academic centers in nanoscale science and engineering, and with facilities supported by other Federal agencies, State governments, the private sector, and non-U.S. institutions. Successful application and development of nanotechnology will require careful consideration and analysis

of associated social and ethical implications. The network should incorporate opportunities for research and related activities on these aspects.

Proposing institutions are encouraged to include the broadest range of capabilities in their network proposal. The network should provide users access not only to the specialized tools, processes, and expertise for designing, simulating, and fabricating nano- and micro-scale structures, materials, devices, and systems, but also to the specialized instrumentation for analysis, characterization, probing, and manipulation of objects at these dimensions. The network should encompass capabilities for determining fundamental physical, chemical, and biological properties; for metrology, characterization, probing, manipulation, and control; for design, modeling, and simulation; for patterning, processing, fabrication, and integration; and for other special needs. The individual sites may focus on particular subfields; however, the overall network should comprise facilities and instrumentation addressing needs across the broad science and engineering domains, including: physical-, chemical-, and biological-based nanostructures, materials, devices, and systems; nanoscale building blocks and nanostructured materials, composites, coatings, and surfaces; electronic, optical/photonic, magnetic, mechanical, thermal, and fluidic nanodevices and systems; geophysical, geochemical, and environmental nanostructures and processes; bioengineering and biomedical nanodevices and systems; process integration technologies, prototyping, and testing of manufacturing concepts; and other areas, as appropriate. Sites should have appropriate equipment base, materials and processes, tools and instrumentation. They should also have plans for acquisition, where appropriate, of new tools, instrumentation, processes, and supporting technologies that will position and maintain their facilities at the frontier.

Broadened Scope

The infrastructure of the NG NNIN will also incorporate the following major elements identified in the Nanotechnology Infrastructure Workshop report⁽⁴⁾ to offer a much broadened scope and user base:

- Emphasis on utilization of the network nature of the program to provide value to the user community far greater than individual components.
- A user base that is broadened to include communities such as environmental sciences, geosciences, and biosciences.
- Availability of new leading-edge fabrication capability to users who require it.
- Capabilities to create complex and three-dimensional nanoscale systems through heterogeneous integration.
- Capabilities to build nanoscale systems across multiple dimensional scales through hierarchical design and fabrication.
- Capabilities for fabrication in soft matter including potentially biological interfaces.
- New generations of modeling and simulation along with the use of new design tools to maximize overall understanding and fabrication efficiency.
- Facilities capable of supporting the translation of discovery into prototypical elements suitable for evaluation of manufacturability and proof of business concept.
- Partnerships with industry, government, and other groups to provide specialized capabilities within the network when warranted, including linkages with other networks and federal infrastructure investments.
- Unified program of education and outreach built upon the unique nature of the network and funded at a level commensurate with the goals and directions of the program.
- Commitment to support and champion environmental responsibility, health, and safety (EHS) by providing direct capabilities including characterization, fabrication, and synthesis as well as establishment of the benchmark for EHS within a university environment.
- Incorporation of understanding of societal and ethical implications (SEI) of nanotechnology.

Considerations for Individual Sites in the Network

The individual user facility sites will have considerable autonomy in their operation, management, and oversight as part of the overall network. Each institution will provide the necessary infrastructure, including appropriate laboratory, clean room, and common space and sharing of equipment, in support of an external user community. The facilities must embrace a culture of open access to qualified researchers, with protection of intellectual property, and mechanisms for encouraging non-traditional users from diverse disciplines. They should have an organizational structure that allows coordination of complex process steps and tools for integrated tasks, and acceptance of experimental risks associated with non-standard processes and materials. They should have strong underlying internal research programs that provide critical research mass and knowledge base in developing new processes, methodologies, and instrumentation. They should emphasize advanced educational opportunities for graduate and undergraduate students, technicians, postdoctoral associates, scientists, and engineers across a broad spectrum of disciplines. They should also have a technical staff with requisite expertise to serve external and internal users and to instruct in laboratory safety, process methods, and instrumentation usage. Some sites should support exploration of the social and ethical implications of nanotechnology.

Coordinating Features of the Network

It is desired that the network have the following coordinating features:

- Appropriate mixture of geographically-distributed large and small facilities that provide diverse and complementary capabilities to support current and anticipated user needs for nano- and micro-scale fabrication and characterization across a broad spectrum of science, engineering, and technology domains.
- Effective management structure and comprehensive website to ensure close linkage and cooperation among the individual facilities such that they operate as a cohesive national network.
- Seamless methods of network operation that support complex user projects across facilities and remote users of facilities.
- Simulation and modeling computational tools appropriate to design and fabrication of nanoscale structures and systems, and effective coordination with the Network for Computational Nanotechnology (NCN).
- Coordination of national-level education and outreach programs across the network, with a comprehensive assessment mechanism.
- Coordination of instruction and study of social and ethical implications of nanotechnology across the network that leverages its user community base.
- Dissemination of shared knowledge to research and development communities.
- Promotion of diversity and broadening participation among students, faculty, staff, management, and outreach activities.
- Appropriate user fee structures at all sites for academic, industry, government, international, and other researchers.
- Connections with other nationally funded academic research and education centers and networks in nanoscale science and engineering, and with facilities supported by other Federal agencies, State governments, the private sector, and non-U.S. institutions.
- Methods for assessment and quantifiable metrics of network performance and impact.
- Mechanisms to encourage non-traditional users from diverse disciplines.
- Planning process to accommodate emerging areas of nanoscale science, engineering, and technology and future growth of external and internal user base, including adding new sites to, or dropping existing sites from, the network.
- Establishing an external advisory board of distinguished members from academia, industry, and government to provide advice and guidance to network management.
- Fostering additional support from non-NSF sources, including other Federal agencies, State governments, and the private sector.

Network Director and Site Directors

The network of user facilities will have a Network Director who will provide intellectual leadership for the network, be responsible for management and coordination of the activities of the network in a cohesive manner, and serve as the principal contact person on behalf of the network with the NSF. The Network Director shall be the Principal Investigator (PI) of the lead institution submitting the network proposal. The Network Director will be the key individual for developing strategies and operational plans for the network in cooperation with the Site Directors of the individual facilities and in consultation with an external advisory body of distinguished scientists and engineers. The Network Director will also coordinate annual review meetings with the NSF, and will serve as principal liaison with the outside communities for the promotion of the network. Individuals designated as Site Directors from the participating institutions will be responsible for local management functions of the individual user facilities, for interfacing with other facilities in the network and with the outside communities, and will serve on the management team for the overall network.

III. AWARD INFORMATION

NSF plans to support a single national network. Approximately \$16,000,000 will be available annually in this competition to fund the network for each year of the five-year award duration, subject to the availability of funds. An award will be in the form of a cooperative agreement made directly with the lead institution. An individual institution within the network is limited to receiving a maximum of \$2,500,000 per year for support of its facility. The lead institution may request funds beyond this limit for coordinated network purposes of management, outreach, and related activities. The initial award commitment will be for five years and may be renewed once for an additional five years, subject to external merit review. Recompensation will be required after ten years. The size of an award will depend on the plans and capabilities of the proposed network.

IV. ELIGIBILITY INFORMATION

Organization Limit:

Proposals may only be submitted by the following:

- U.S. academic institutions are eligible to submit or participate in proposals for an integrated network of user facilities. Non-academic U.S. institutions and organizations, including national laboratories and private-sector companies, as well as non-U.S. institutions, may participate in network activities using their own resources.

PI Limit:

None Specified

Limit on Number of Proposals per Organization:

An institution may not be included in more than one proposal submitted in response to this solicitation.

Limit on Number of Proposals per PI:

None Specified

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

Letters of Intent(**required**):

For NSF planning purposes, a non-binding letter of intent to submit a network proposal to this solicitation must be sent by the date listed at the beginning of this solicitation. The letter of intent (in clear text, 2-page limit, with no attachments) should list the project title, PI/Network Director, lead institution, and other participating institutions, including designation of the respective Site Directors. Provide a brief summary discussion of the proposed network and of the funds to be requested.

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 not required when submitting Letters of Intent
- Submission of multiple Letters of Intent is not allowed

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

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

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

PROPOSAL CONTENT

Proposals must contain the items listed below and adhere to the specified page limitations. No additional information may be provided by links to web pages.

Cover Page: FastLane Users: Proposers must identify this program solicitation number by selecting "Next-Generation National Nanotechnology Infrastructure Network" from the Program Announcement/Solicitation Box, which will automatically populate the NSF Unit of Consideration with the correct NSF organization and program. The project title must begin with "NG NNIN:".

Grants.gov Users: The program solicitation number will be pre-populated by Grants.gov on the NSF Grant Application Cover Page. In Field 2, Unit of Consideration, enter 07010000 for the Division Code and 7601 for the Program Code. The project title must begin with "NG NNIN:".

Project Summary: Provide a summary description of the proposed network that conveys its objectives and key features in a manner that will be informative to a general technical audience. As now required in FastLane, the project summary is limited to 1 page and must address within separate text boxes the Overview, the Intellectual Merit, and the Broader Impacts of the proposed activity.

Table of Contents: The Table of Contents is generated by the system and cannot be edited.

Project Description: The project description section contains the following items a through h, and is limited to a combined total length of 35 pages, inclusive of tables, figures, or other graphical data.

a. List of Participants: Provide a listing, organized by institution and showing departmental affiliation, of the Network Director, Site Directors, and other faculty members or senior level personnel expected to have an important management role in the network project.

b. Vision and Goals: Describe the vision and goals for the proposed network, including its potential in enabling the nation's research and education infrastructure for nanoscale science, engineering, and technology, and its broader educational and societal impacts.

c. Capabilities of the Network: Describe the full extent of fabrication and characterization instrumentation capabilities, the breadth of coverage of research fields and needs, specifying any areas that may lack coverage, the nature of user services to be provided, the mixture of large and small facilities and their geographic distribution, and the essential criteria required for a facility to be part of the network. Describe how external users will apply to the network, how non-traditional users will be encouraged, how projects will be accepted and assigned into the system, provisions to accommodate users both on site and remotely, the ability to accomplish user projects at individual sites or at multiple sites as needed, and provision for simulation and modeling tools and laboratory software. Describe the planning and budgeting process for acquisition and development of new tools and instrumentation needed to position the facilities at the frontier over the duration of the award. Discuss plans to provide a broader national infrastructure for nanoscale science, engineering and technology by developing connections between the network and other nationally funded academic centers, networks, and facilities supported by government, the private sector, and non-U.S. institutions.

d. Capabilities of Individual Sites: For each proposed network site, describe the strengths, capabilities, disciplinary coverage and focus of the user facility. Detailed information on facilities, equipment, and other resources should be provided in Section on Facilities, Equipment, and Other Resources, below. Describe the in-house research programs of principal faculty members that underpin the site's capabilities and that would enable it to support development of new tools, instrumentation, and processes. Discuss any past experience in operation as a user facility. Describe the commitment of the institution to providing appropriate laboratory, clean room, and common space, faculty and staff positions, capital equipment and instrumentation, and their maintenance and operation. Describe plans for staffing, accommodating external users, encouraging non-traditional users, user training, user fee structure, intellectual property policy, education, and outreach.

e. Education, Outreach, and Knowledge Dissemination: Describe how advanced educational experiences of graduate and undergraduate students, postdoctoral associates, and others will be emphasized within the facilities. Discuss the role of diversity and broadening participation in plans to attract high-quality U.S. students, especially women, racial and ethnic minorities who are members of groups underrepresented in science and engineering, and persons with disabilities. Describe educational outreach plans, including those to community colleges, minority-serving institutions, K-12 teachers and schools, and the broader community. Any planned activities such as research experiences for undergraduates, including international aspects, and research experiences for teachers should be built in as part of the proposal. Describe outreach plans intended to increase the external user base, to encourage non-traditional users from diverse communities or those without access to advanced tools and instrumentation, and to foster emerging areas for the field. Describe provisions for knowledge dissemination to the broader research and technology communities. Describe plans for a comprehensive assessment mechanism.

f. Social and Ethical Implications: Describe plans for coordination of instruction and study of social and ethical implications of nanotechnology across the network that leverages its user community base. List the issues that will be core concerns; describe methodologies likely to be used to investigate these concerns; and indicate local researchers likely to be involved in the exploration of these issues. Describe plans to facilitate more broadly cooperation and interchange between scientists and engineers in nanoscience-related fields and social scientists and ethicists studying nanotechnology.

g. Management: Describe the management structure for the network and for the individual sites in the network. Discuss the method of selection, tenure, and responsibilities of the Network Director, individual Site Directors, and other management individuals. Describe provisions for network oversight, including external advisory bodies, their composition, responsibilities, and means of advising network management. Describe the methods for managing the external users program and for integrating the network's activities into academic programs. Discuss the planning process to determine overall network requirements, including the development of a vision for future nanoscale science and engineering research directions, needs, and capabilities; procedures for adding new sites to, or for dropping existing sites from, the network; allocation of resources; and prioritization of equipment acquisition, development, and staffing. Describe methods for assessment and quantifiable metrics of network performance and impact. Describe the processes for setting goals, including promoting significant participation of non-traditional users and external users at all facilities.

h. Broader Impacts: Discuss the broader impacts of the proposed national network of nanotechnology user facilities.

References Cited: Provide appropriate references.

Biographical Sketches (2-page limit each for PI, co-PIs, and Site Directors; 1-page limit each for other senior personnel): Provide a biographical sketch for each participant listed above. The sketch should describe the individual's academic and professional history and may list five significant publications and other activities or accomplishments. In choosing what to include, emphasize information that will be helpful in understanding the strengths, qualifications, and specific impact the individual brings to the network project.

Budget: The lead institution shall submit the proposal. Other participating institutions will be supported through subawards from the lead institution. Provide annual budgets for each year of five years for the overall network, as well as individual budgets for all participating institutions that receive a subaward. The system will automatically fill out the cumulative five-year budget. An individual institution within the network is limited to receiving a maximum of \$2.5 million per year for support of its facility. The lead institution may, however, request funds beyond this limit for coordinated network purposes of management, outreach, and other activities. The major portion of NSF funds should be budgeted for operation and staffing of the user facilities and associated network activities. NSF funds may also be budgeted, as appropriate, for acquisition of, and to support the in-house development of, major instrumentation, tools, processes, and special-purchase laboratory software. NSF funds may not be budgeted for research purposes, with the exception of societal and ethical implications studies.

Budget Justification (3-page limit, each): Provide a justification for the funds requested in the major budget categories for the overall network and for each individual institution participating in the network. Describe the proposed allocation of funds with sufficient clarity to show how resources will be utilized in carrying out the proposed network activities. Describe the planned acquisition or development of major instrumentation, tools, processes, and special-purchase laboratory software. For each such item requested in the first year, include sufficient specificity in description, with explanation of the need, and any provision for maintenance and operating expenses.

Current and Pending Support: Provide for PI, co-PIs, and Site Directors.

Facilities, Equipment and other Resources: Provide an aggregated description of the internal and external resources, both physical and personnel, that the organization and its collaborators will provide to the project that will enable an assessment of the adequacy to perform the proposed effort. Such information must be provided in this section, in lieu of other parts of the proposal. The description should be narrative in nature and must not include any quantifiable financial information. Describe the distinguishing fabrication and/or characterization tools, instrumentation and processes that are available, including the ability to accommodate and develop nonstandard processes and materials. Provide details of existing or proposed resource commitments from other organizations, such as government, industry, private foundations, and non-U.S. institutions, that will contribute to operation of the facilities.

Supplementary Documentation: Submit official supporting letters that verify resource commitments by each institution participating in the network and by other organizations.

B. Budgetary Information

Cost Sharing: Inclusion of voluntary committed cost sharing is prohibited

C. Due Dates

- Letter of Intent Due Date(s) (**required**) (due by 5 p.m. proposer's local time):
April 01, 2013
- Full Proposal Deadline(s) (due by 5 p.m. proposer's local time):
May 13, 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: <http://www.nsf.gov/bfa/dias/policy/meritreview/>.

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

In responding to the above NSF review criteria, reviewers will be asked to place emphasis on the following additional criteria:

- Effectiveness in enhancing the national infrastructure for nanoscale science, engineering, and technology.
- Degree to which the infrastructure incorporates the major elements identified to offer a much broadened scope and user base.
- Quality of the network structure and individual sites in providing diverse and complementary fabrication, characterization, instrumentation, and infrastructure capabilities on a national level.
- Quality of advanced educational experiences afforded, and attention to diversity issues.
- Quality and appropriateness of educational and scientific outreach and knowledge dissemination programs.
- Quality and appropriateness of plans for studying the social and ethical implications of nanotechnology.
- Strength of supportive in-house research programs and faculty at each site.
- Effectiveness of management structure, plans, and ability to coordinate and ensure high-quality user services across all sites.
- Appropriateness of plans for assessment and metrics of network performance and impact, and for determining future needs.
- Appropriateness of the budget for the proposed network.

B. Review and Selection Process

Proposals submitted in response to this program solicitation will be reviewed by a combination of mail and panel review followed by reverse site review.

A working group of program officers from the participating Directorates/Divisions/Offices, coordinated by ENG/ECCS, will jointly oversee all aspects of the NG NNIN program, including the review and award recommendation process, development of cooperative agreements, and post-award oversight.

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: An award for this solicitation will be made as a Cooperative Agreement to the lead institution.

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.

Post-award oversight will consist of an annual site review by a panel of external experts to be held at one of the network sites. The awardee will submit a comprehensive annual project report to NSF in advance of each annual review. The annual project report will contain a Program Plan and Budget for the next-year's funding increment.

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:

- Lawrence S. Goldberg (Lead), ENG/ECCS, telephone: (703) 292-8339, email: lgoldber@nsf.gov
- Guebre X. Tessema, MPS/DMR, telephone: (703) 292-4935, email: gtessema@nsf.gov
- Barbara P. Karn, ENG/CBET, telephone: (703) 292-7949, email: bkarn@nsf.gov
- Bruce Kramer, ENG/CMMI, telephone: (703) 292-5348, email: bkramer@nsf.gov
- Zeev Rosenzweig, MPS/CHE, telephone: (703) 292-7719, email: zrosenzw@nsf.gov
- Sankar Basu, CISE/CCF, telephone: (703) 292-7843, email: sabasu@nsf.gov
- Sally E. O'Connor, BIO/DBI, telephone: (703) 292-4552, email: soconnor@nsf.gov
- Frederick M. Kronz, SBE/SES, telephone: (703) 292-7283, email: fkronz@nsf.gov
- David Lambert, GEO/EAR, telephone: (703) 292-4736, email: dlambert@nsf.gov
- Duncan E. McBride, EHR/DUE, telephone: (703) 292-4630, email: dmcbride@nsf.gov
- Graham M. Harrison, OISE, telephone: (703) 292-7252, email: gharriso@nsf.gov

For questions related to the use of FastLane, contact:

- FastLane Help Desk, telephone: 1-800-673-6188; e-mail: fastlane@nsf.gov.

For questions relating to Grants.gov contact:

- Grants.gov Contact Center: If the Authorized Organizational Representatives (AOR) has not received a confirmation message from Grants.gov within 48 hours of submission of application, please contact via telephone: 1-800-518-4726; e-mail: support@grants.gov.

IX. OTHER INFORMATION

The NSF Website provides the most comprehensive source of information on NSF Directorates (including contact information), programs and funding opportunities. Use of this Website by potential proposers is strongly encouraged. In addition, National Science Foundation Update is a free e-mail subscription service designed to keep potential proposers and other interested parties apprised of new NSF funding opportunities and publications, important changes in proposal and award policies and procedures, and upcoming NSF Regional Grants Conferences. Subscribers are informed through e-mail when new publications are issued that match their identified interests. Users can subscribe to this service by clicking the "Get NSF Updates by Email" link on the [NSF web site](#).

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

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 55,000 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 Arctic 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
or telephone: (703) 292-7827
- To Locate NSF Employees: (703) 292-5111

PRIVACY ACT AND PUBLIC BURDEN STATEMENTS

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

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

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

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