

Smart and Connected Communities (S&CC)

PROGRAM SOLICITATION

NSF 18-520

REPLACES DOCUMENT(S):

NSF 16-610



National Science Foundation

Directorate for Computer & Information Science & Engineering
Division of Computer and Network Systems
Division of Information & Intelligent Systems
Division of Computing and Communication Foundations

Directorate for Education & Human Resources
Research on Learning in Formal and Informal Settings

Directorate for Engineering
Division of Chemical, Bioengineering, Environmental and Transport Systems
Division of Civil, Mechanical and Manufacturing Innovation
Division of Electrical, Communications and Cyber Systems

Directorate for Geosciences

Directorate for Social, Behavioral & Economic Sciences
Division of Behavioral and Cognitive Sciences
Division of Social and Economic Sciences

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

January 30, 2018

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

February 28, 2018

IMPORTANT INFORMATION AND REVISION NOTES

The Smart and Connected Communities (S&CC) program solicitation has been revised for the FY 2018 competition, and prospective Principal Investigators are encouraged to read the solicitation carefully. Among the changes are the following:

- Proposal Categories have been revised:
 - The S&CC Integrative Research Grants (S&CC-IRG) Track 1 and Track 2 categories have been replaced by a single S&CC Integrative Research Grants category. **This category is similar in scope to prior S&CC-IRG Tracks 1 and Track 2** categories but with revised budget and duration.
 - The Research Coordination Networks and Planning Grant categories are no longer proposal categories and are not part of this solicitation.
- Components have been added to the Project Description: A Management Plan and an Evaluation Plan are now required components within the 15-page Project Description.
- Components have been modified: Research Capacity Building is no longer a dedicated component, but remains inherent to S&CC proposals.
- An Integration and Management Plan is no longer required as a Supplementary Document; instead, as noted above, a Management Plan is now a required component of the Project Description.
- Human Subjects Protection is no longer required as a Supplementary Document; IRB/IACUC approval may still be required to recommend proposals for funding.
- Preliminary Proposals are no longer permitted. Instead, a Letter of Intent (LOI) is required prior to any proposal submission. LOIs are not subject to merit review, but are used for internal planning purposes.
- A Proposal Preparation Checklist has been added to aid in preparation of compliant proposals. This checklist provides a summary of key items, but does not replace the complete set of requirements in the Proposal and Award Policies and Procedures Guide (PAPPG).
- Eligibility information has been revised.
- Proposal deadlines have been revised.

Any proposal submitted in response to this solicitation should be submitted in accordance with the revised *NSF Proposal & Award Policies & Procedures Guide* (PAPPG) ([NSF 18-1](#)), which is effective for proposals submitted, or due, on or after January 29, 2018.

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

Smart and Connected Communities (S&CC)

Synopsis of Program:

Communities in the United States (US) and around the world are entering a new era of transformation in which residents and their surrounding environments are increasingly connected through rapidly-changing intelligent technologies. This transformation offers great promise for improved wellbeing and prosperity, but poses significant challenges at the complex intersection of technology and society. The goal of the NSF Smart and Connected Communities (S&CC) program solicitation is to accelerate the creation of the scientific and engineering foundations that will enable smart and connected communities to bring about new levels of economic opportunity and growth, safety and security, health and wellness, and overall quality of life. This goal will be achieved through integrative research projects that pair advances in technological and social dimensions with meaningful community engagement.

For the purposes of this solicitation, communities are defined as having geographically-delineated boundaries—such as towns, cities, counties, neighborhoods, community districts, rural areas, and tribal regions—consisting of various populations, with the structure and ability to engage in meaningful ways with proposed research activities. A “smart and connected community” is, in turn, a community that synergistically integrates intelligent technologies with the natural and built environments, including infrastructure, to improve the social, economic, and environmental well-being of those who live, work, or travel within it.

A proposal for an S&CC Integrative Research Grants must include the following:

- Integrative research that addresses the technological and social dimensions of smart and connected communities;
- Meaningful community engagement that integrates community stakeholders within the project;
- A management plan that summarizes how the project will be managed across disciplines, institutions, and community entities; and
- An evaluation plan for assessing short-, medium-, and long-term impacts of the proposed activities.

S&CC is a cross-directorate program supported by NSF's Directorates for Computer and Information Science and Engineering (CISE), Education and Human Resources (EHR), Engineering (ENG), Geosciences (GEO), and Social, Behavioral, and Economic Sciences (SBE). Awards may be requested for total budgets ranging from \$750,000 to \$3,000,000 for periods of up to four years.

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.

- David Corman, Program Director, CISE/CNS, telephone: (703) 292-8754, email: dcorman@nsf.gov
- Radhakishan Baheti, Program Director, ENG/ECCS, telephone: (703) 292-8339, email: rbaheti@nsf.gov
- Cynthia Chen, Program Director, ENG/CMMI, telephone: (703)292-2563, email: qchen@nsf.gov
- John Cherniavsky, Program Director, EHR/DRL, telephone: (703) 292-5136, email: jchernia@nsf.gov
- Robin Dillon-Merrill, Program Director, ENG/CMMI, telephone: 703-292-4921, email: rdillonm@nsf.gov
- Bruce Hamilton, Program Director, ENG/CBET, telephone: (703)292-9054, email: bhamilto@nsf.gov
- Meghan Houghton, Staff Associate, CISE, telephone: (703) 292-4449, email: mehought@nsf.gov
- Sara Kiesler, Program Director, SBE/SES, telephone: (703) 292-8643, email: skiesler@nsf.gov
- Tatiana Korelsky, Program Director, CISE/IIS, telephone: (703) 292-8930, email: tkorelsk@nsf.gov
- Anthony Kuh, Program Director, ENG/ECCS, telephone: (703) 292-2210, email: akuh@nsf.gov
- Richard Malak, Program Director, ENG/CMMI, telephone: (703) 292-7902, email: rmalak@nsf.gov
- Sunil Narumalani, Program Director, SBE/BCS, telephone: (703) 292-4995, email: snarumal@nsf.gov
- Wendy Nilssen, Program Director, CISE/IIS, telephone: (703) 292-2568, email: wnilsen@nsf.gov
- Rahul T. Shah, Program Director, CISE/CCF, telephone: (703) 292-2709, email: rshah@nsf.gov
- Sylvia Spengler, Program Director, CISE/IIS, telephone: (703) 292-8930, email: sspengle@nsf.gov

Jonathan Sprinkle, Program Director, CISE/CNS, telephone: (703) 292-8719, email: jsprinkl@nsf.gov

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

- 47.041 --- Engineering
- 47.050 --- Geosciences
- 47.070 --- Computer and Information Science and Engineering
- 47.075 --- Social Behavioral and Economic Sciences
- 47.076 --- Education and Human Resources

Award Information

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

Estimated Number of Awards: 7 to 15

The number of awards is dependent upon the proposals received and the degree to which proposals meet the solicitation goals, NSF merit review criteria, and solicitation-specific review criteria.

Anticipated Funding Amount: \$19,250,000

Subject to the quality of proposals received and availability of funds.

Eligibility Information

Who May Submit Proposals:

The categories of proposers eligible to submit proposals to the National Science Foundation are identified in the *NSF Proposal & Award Policies & Procedures Guide* (PAPPG), Chapter I.E.

Who May Serve as PI:

There are no restrictions or limits.

Limit on Number of Proposals per Organization:

There are no restrictions or limits.

Limit on Number of Proposals per PI or Co-PI: 2

An individual may appear as PI, Co-PI, Senior Personnel, or Consultant on no more than two proposals submitted in response to this solicitation.

In the event that an individual exceeds this limit, proposals received within the limit will be accepted based on earliest date and time of proposal submission (i.e., the first two proposals received prior to the deadline will be accepted and the remainder will be returned without review). This limitation includes proposals submitted by a lead organization and any subawards included as part of a collaborative proposal involving multiple institutions. **No exceptions will be made.**

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 required
- **Full Proposals:**
 - Full Proposals submitted via FastLane: *NSF Proposal and Award Policies and Procedures Guide* (PAPPG) guidelines apply. The complete text of the PAPPG is available electronically on the NSF website at: https://www.nsf.gov/publications/pub_summ.jsp?ods_key=pappg.
 - 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: https://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. submitter's local time):

January 30, 2018

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

February 28, 2018

Proposal Review Information Criteria

Merit Review Criteria:

National Science Board approved criteria. Additional merit review considerations apply. Please see the full text of this solicitation for further information.

Award Administration Information

Award Conditions:

Additional award conditions apply. Please see the full text of this solicitation for further information.

Reporting Requirements:

Standard NSF reporting requirements apply.

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I. INTRODUCTION

Communities in the United States (US) and around the world are entering a new era of transformation in which residents and their

surrounding environments are increasingly connected through rapidly-changing intelligent technologies. Concurrently, communities are unique and constantly evolving. Shifts in population size, demographics, economic opportunity, technology, built and natural environments, and available services all impact overall community culture, needs, and opportunities. A fundamental understanding of the complex, dynamic interactions between technology and society is essential for unlocking the potential benefits of smart and connected communities.

The goal of this solicitation is to accelerate the creation of the scientific and engineering foundations that will enable smart and connected communities to bring about new levels of economic opportunity and growth, safety and security, health and wellness, and overall quality of life.

The specific objectives of this solicitation are to: (1) enhance scientific and engineering knowledge that integrates technological and social dimensions through modeling, analysis, design, and in-situ experimentation in ways that improve the quality of life within communities; (2) foster the development of a multidisciplinary and diverse research community that encompasses and integrates the perspectives of scientific areas supported by, but not limited to, participating NSF directorates; (3) support research and community engagement that is directly informed by the needs, challenges, and opportunities of present and future communities; and (4) conduct robust evaluation of project outcomes.

NSF has long been a leader in supporting research and education activities and growing the partnerships that form the foundation for 21st-century smart and connected communities. In addition to research investments, NSF has supported a series of workshops to build capacity in the research community and inform the S&CC research agenda.^[1] This agenda is an example of [Convergence Research at NSF](#)—integrating knowledge, techniques, and expertise from multiple fields and sectors to form new and expanded frameworks for addressing the needs of communities across the US.

[1] NSF Smart & Connected Communities: A vision for the 21st Century, <https://www.nsf.gov/cise/scc/>

II. PROGRAM DESCRIPTION

A. Overview

For the purposes of this solicitation, communities are defined as having geographically-delineated boundaries—such as towns, cities, counties, neighborhoods, community districts, rural areas, and tribal regions—consisting of various populations, with the structure and ability to engage in meaningful ways with the proposed research activities. A “smart and connected community” is, in turn, a community that synergistically integrates information and communication technologies with the natural and built environments, including infrastructure, to improve the social, economic, and environmental well-being of those who live, work, or travel within it.

A proposal for an S&CC Integrative Research Grant must include the following:

- Integrative research that addresses the technological and social dimensions of smart and connected communities;
- Meaningful community engagement that integrates community stakeholders within the project;
- A management plan that summarizes how the project will be managed across investigators, disciplines, institutions, and community entities; and
- An evaluation plan for assessing short-, medium-, and long-term impacts of the proposed activities.

B. Components

Project Descriptions must include separate sections labeled Integrative Research, Community Engagement, Management Plan, and Evaluation Plan as described below.

Integrative Research

Integrative research must address both technological and social dimensions of smart and connected communities, and describe how the dimensions are integrated together. Proposals should engage the multidisciplinary perspectives of scientific areas supported by participating NSF directorates. Integrative research may address a range of application domains including but not limited to the following: agriculture, civil infrastructure, disaster mitigation and response, education and learning, energy, environmental quality, health and wellness including healthcare, resiliency, safety, social services, telecommunications, transportation and mobility, urban and rural planning, and water resources.

Technological dimensions include but are not limited to the following: (1) data integration and management, and computing and network resource management; (2) new algorithms and modeling frameworks for understanding and exploiting high volumes of diverse and complex infrastructure- and community-related data; (3) systems engineering approaches for integrating cyber, physical, and social concerns in a large-scale system-of-systems context with multiple stakeholders; (4) ubiquitous and persistent connectivity to enable data collection and instantaneous dissemination of information; (5) improved cybersecurity and privacy; (6) innovations in integrating materials, sensors, structures, and systems to support smart and connected communities; (7) design of interfaces, controls, and feedback systems; and (8) innovative concepts for advanced infrastructure systems and services.

Social dimensions include but are not limited to the following: (1) improved understanding of institutional and social responses to technological change within communities; (2) processes of learning or collaboration within and across communities; (3) long-term responses of communities to disasters or other existing or predicted adversities; (4) improved methods for measuring and predicting community challenges and opportunities; (5) innovations in the evaluation of community interventions; and (6) innovations in community behaviors or social change experiments facilitated by intelligent technologies.

Examples of projects integrating the technological and social dimensions, which should be explored in concert as they impact one another in the short, medium, and long terms, are below (note that these examples are not meant to be exhaustive):

1. Collection, analysis, and use of data and information from multiple heterogeneous sources to support communities in identifying economically viable and sustainable options to improve quality of life;
2. Real-time adaptation of systems and infrastructures in response to changing needs and behaviors of the community by harnessing and autonomously handling data;
3. Innovative concepts for flexible services and infrastructures (i.e., the built environment) that are responsive to community evolution and technological advances while remaining in harmony with the natural environment;
4. Prediction, analysis, and mitigation of physical, cultural, legal, institutional, and ethical challenges to smart and connected communities, including unintended or indirect consequences of new technologies, forms of data, and infrastructures;
5. Novel methodologies, algorithms, and representations to enable human-centered design and engineering of capabilities, services, infrastructures, and other systems that are seamlessly integrated into the fabric of smart and connected communities;
6. New technologies and practices to improve decision making under uncertainty, including to evaluate and mitigate risks, associated with highly complex systems (spanning technologies, infrastructures, and the community) over the short-, medium-, and long-term;
7. Advances in computational science and neuroscience, psychometrics, and theories of the brain, emotion, learning, and societal forces that will advance cyberlearning, distributed intelligence, knowledge-building communities, formal or informal educational environments, knowledge management, and communities of practice for a future diverse and innovative workforce; and
8. The role of emerging technologies in enhancing workforce opportunities, such as tools to shape human-technology partnerships, improve worker performance, career longevity and job satisfaction, and facilitate the life-long learning of new skills in smart and connected communities.

Community Engagement

Proposals should clearly identify and define the community and participating community stakeholders, and also describe activities that reflect meaningful community engagement. Such activities should extend beyond a single point of engagement, such as a public hearing prior to the start of the research project or a survey at its conclusion. Rather, community engagement should consider community stakeholders as integral to the research. Investigators and community partners are encouraged to work closely to develop and evaluate creative approaches to accomplish the goals of the proposed research. Community partners may also have leadership roles within the proposing team.

Community stakeholders may include some or all of the following: residents, neighborhood or community groups, nonprofit or philanthropic organizations, businesses, and municipal organizations such as libraries, public works departments, health and social services agencies, and schools. In addition, stakeholder engagement may leverage partnerships with regional stakeholders, including local, county, and state governments and departments as well as regional cooperative initiatives.

Examples of community engagement activities include but are not limited to the following:

1. Holding roundtables and community meetings as well as conducting surveys to understand community member needs and concerns, and to develop and refine the research;
2. Incorporating communities into processes for identifying key issues, planning and implementing projects, decision making, and evaluating outcomes;
3. Providing data, facilities, resources, and expertise instrumental to the project;
4. Conceiving of and supporting research demonstrations, experimentation, proofs of concept, or pilot projects;
5. Participating in "living labs" where technological and social advances are staged iteratively through pilot studies in communities;
6. Assisting in planning and implementation of evaluations of proposed research, including helping to define or create metrics and support data collection and/or interpretation within the community context; and
7. Public participation and engagement in research and data collection, including crowdsourcing.

Importantly, the sustainability of research outcomes should be considered as a dimension of community engagement, for example, by developing plans for transitioning research results to practice, pursuing collaborations that link research outcomes to planned efforts within the community, or identifying joint investment models for implementing innovative research solutions.

Management Plan

Researchers from diverse fields are expected to work collaboratively and interdependently, creating shared visions, models, methods, and discoveries. Each proposal must contain a Management Plan that describes how the project will be managed across disciplines, institutions, and community entities. This plan should identify specific collaboration mechanisms that will enable cross-discipline and cross-sector integration of teams, and provide a timeline including principal tasks and associated interactions.

Each proposal must provide a summary of expertise of the team members in the Management Plan. The plan must also address the specific roles and responsibilities of the collaborating PI, Co-PIs, other Senior Personnel, paid consultants, and stakeholder participants, and describe how tasks will be integrated over the course of the project.

Evaluation Plan

The Evaluation Plan should be specific to the proposal's goals and milestones, and describe how progress will be evaluated. For example, describe criteria, metrics, and methods for assessing progress and outcomes, appropriate to the proposal. Evaluation may employ any of a variety of systematic methods: qualitative and/or quantitative methods, public participation in data collection, periodic and/or longitudinal analyses, experiments, or other approaches required to successfully evaluate the project. Proposals should anticipate providing IRB/IACUC approvals as appropriate prior to award.

C. Proposal Category

This S&CC solicitation will support **S&CC Integrative Research Grants (S&CC-IRGs)**. Awards will support the conduct of fundamental, integrative research with meaningful community engagement. S&CC-IRG proposals may request total budgets ranging from \$750,000 to \$3,000,000 for periods of up to four years.

D. Principal Investigator Meetings

In order to (a) accelerate the rate of dissemination of ideas among researchers and community stakeholders, (b) build an intellectual research core to address the challenges of smart and connected communities, and (c) enable enhanced research collaborations, the S&CC program plans to host principal investigator (PI) meetings every year with participation from all funded projects and other representatives from academia, industry, government, and community organizations. PIs or their designees **must** participate in these PI meetings throughout the duration of their awards. Lead investigators from each subaward institution are expected to participate. A substitute project representative may be designated to attend a PI meeting, but only with prior approval from a cognizant NSF Program Officer. As noted in Section V.B, Budget Preparation Instructions, budgets for all projects must include funding for one or more designated S&CC project representatives (PI/co-PI/Senior Personnel or NSF-approved replacement) to attend each S&CC PI meeting during the proposed lifetime of the award.

E. Other Opportunities

Recognizing that advanced information and communication networks are a foundation for next-generation cities and communities, PIs may consider the following programs:

- The National Telecommunications and Information Association's (NTIA) [BroadbandUSA](#) program is offered as a resource. This program provides technical assistance, information guides, and assessment tools to expand broadband infrastructure and promote digital inclusion.
- Regarding wireless communications, PIs are pointed to the [Platforms for Advanced Wireless Research \(PAWR\)](#) program. Beginning in FY 2017, NSF, together with a consortium of over 30 companies and technology associations in the wireless sector, is funding the design, development, deployment, and initial operation of a set of community-scale experimental research platforms. This NSF-led public-private partnership aims to advance the development of next-generation wireless technologies and services—the high-speed, high-capacity connectivity that enables smart and connected communities.

III. AWARD INFORMATION

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

Estimated Number of Awards: 7 to 15

The number of awards is dependent upon the proposals received and the degree to which proposals meet the solicitation goals, NSF merit review criteria, and solicitation-specific review criteria.

Anticipated Funding Amount: \$19.25M

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

IV. ELIGIBILITY INFORMATION

Who May Submit Proposals:

The categories of proposers eligible to submit proposals to the National Science Foundation are identified in the *NSF Proposal & Award Policies & Procedures Guide* (PAPPG), Chapter I.E.

Who May Serve as PI:

There are no restrictions or limits.

Limit on Number of Proposals per Organization:

There are no restrictions or limits.

Limit on Number of Proposals per PI or Co-PI: 2

An individual may appear as PI, Co-PI, Senior Personnel, or Consultant on no more than two proposals submitted in response to this solicitation.

In the event that an individual exceeds this limit, proposals received within the limit will be accepted based on earliest date and time of proposal submission (i.e., the first two proposals received prior to the deadline will be accepted and the remainder will be returned without review). This limitation includes proposals submitted by a lead organization and any subawards included as part of a collaborative proposal involving multiple institutions. **No exceptions will be made.**

Additional Eligibility Info:

For collaborative proposals involving multiple institutions, the proposal must be submitted by one lead institution with funding for all other participating institutions made through subawards. See PAPPG for additional information. **Proposals submitted as separately submitted collaborative proposals will be returned without review.**

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

Letters of Intent (required):

Potential proposers may not submit a proposal without first submitting a Letter of Intent (LOI), compliant with the instructions below, by the LOI deadline. **Failure to submit a required LOI will result in a proposal being returned without review.**

Submitting a LOI does not oblige potential proposers to submit a proposal. A single LOI should be submitted by the lead institution only. LOIs are not subject to merit review, but rather are used for internal planning purposes. Investigators should not expect to receive any feedback on their LOI. There is no limit on the number of LOIs from any given institution. The lead PI and institution must remain the same for the S&CC-IRG proposal. However, the composition of the team (i.e., Senior Personnel, partner institutions, and community organizations) may change at the discretion of the proposer.

Each LOI must include the following information:

- In the Project PI and Other Senior Project Personnel sections, list the full names and institutional affiliations for the PI and all Co-PIs and Senior Personnel on the project, including all subawardees. The point of contact for NSF inquiries must be the PI, with the PI's e-mail address.
- In the Participating Organizations section, list all the institutions involved in the project including community partners.
- In the Synopsis section, provide a synopsis that describes the work in sufficient detail to permit an appropriate selection of potential reviewers. Be sure to address integrative social and technological research challenges that are meaningful to communities as described above (limit: one page).

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:

- Submission by an Authorized Organizational Representative (AOR) is not required when submitting Letters of Intent.
- Submission of multiple Letters of Intent is permitted

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 Proposal & Award Policies & Procedures Guide* (PAPPG). The complete text of the PAPPG is available electronically on the NSF website at: https://www.nsf.gov/publications/pub_summ.jsp?ods_key=pappg. Paper copies of the PAPPG 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: (https://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.

See PAPPG Chapter II.C.2 for guidance on the required sections of a full research proposal submitted to NSF. Please note that the proposal preparation instructions provided in this program solicitation may deviate from the PAPPG instructions.

Multi-Institutional Proposals: For collaborative proposals involving multiple institutions, the proposal must be submitted by one lead institution with funding for all other **participating institutions made through subawards**. See PAPPG Chapter II.D.3.a for additional information. **Proposals submitted as separately submitted collaborative proposals (as described under PAPPG Chapter II.D.3.b) will be returned without review.**

Cover Sheet:

Proposal Title: The title of the proposal **must** begin with "SCC:".

The rest of the title of the proposal should describe the project in concise, informative language so that a scientifically- or technically-literate reader can understand what the project is about. The title should emphasize the scientific work to be undertaken, and be suitable for use in public press.

Personnel Listed on the Cover Sheet: Provide complete information requested on the cover sheet for the PI and up to four co-PIs.

Project Description:

Project Descriptions are **limited to 15 pages in length**. (Note: proposals may be submitted only if a Letter of Intent for the same topic by the same PI has been submitted by the LOI deadline.)

The Project Description **must include separate sections labeled Integrative Research, Community Engagement, Management Plan, and Evaluation Plan, as described in the Program Description above. Proposals lacking one or more of these sections will be returned without review.** The Project Description must provide details on an integrative research approach and describe how the community engagement components infuse and support the proposed research. Specifically, the Project Description must:

- Outline specific **social and technological research questions**, hypotheses, and research gaps;
- Fully describe the community; and explain the rationale and breadth of community engagement, and how this engagement will be sustained through the duration of the award;
- Describe management of the project, and the proposed approach to data collection and evaluation; and
- Describe the vision of success for the proposal—specifically defining the project goals and the definition of a successful outcome, and how success will be evaluated.

Supplementary Documents:

1. Project Personnel and Partner Institutions: Provide current, accurate information for all personnel and institutions involved in the project. NSF staff will use this information in the merit review process to manage reviewer selection. The list must include all PIs, Co-PIs, Senior Personnel, paid/unpaid Consultants or Collaborators, Subawardees, Postdocs, and project-level advisory committee members. This list should be numbered and include (in this order) Full name, Organization(s), and Role in the project, with each item separated by a semi-colon. Each person listed should start a new numbered line. For example:

- Mary Smith; XYZ University; PI
- John Jones; University of PQR; Senior Personnel
- Jane Brown; XYZ University; Postdoc
- Bob Adams; ABC Inc.; Paid Consultant
- Mary White; Welldone Institution; Unpaid Collaborator
- Tim Green; ZZZ University; Subawardee

Proposals that do not contain Project Personnel and Partner Institutions with the appropriate information will be returned without review.

2. Letters of Collaboration: The Project Description must fully detail any substantial collaborations and engagements (included or not included in the budget) with partner institutions including communities. Letters of Collaboration should be provided in the Supplementary Documents section of the proposal and follow the format instructions specified in the NSF PAPPG. **Letters of Collaboration should not contain endorsements or evaluation of the proposed project.** One format for a letter of collaboration is as follows:

"If the proposal submitted by Dr. [insert the full name of the Principal Investigator] entitled [insert the proposal title] is selected for funding by NSF, it is my intent to collaborate and/or commit resources as detailed in the Project Description or the Facilities, Equipment or Other Resources section of the proposal."

Collaborative activities that are identified in the budget should follow the instructions in the NSF PAPPG. Any substantial collaboration with individuals not included in the budget should also be described in the Facilities, Equipment and Other Resources section of the proposal and documented in a Letter of Collaboration from each collaborator.

Single Copy Documents:

Collaborators and Other Affiliations Information:

For this solicitation, the Collaborators & Other Affiliations (COA) information specified in the PAPPG should be submitted using the spreadsheet template found at <https://www.nsf.gov/bfa/dias/policy/coa.jsp>. For each proposal, a completed spreadsheet for each PI, Co-PI, and Senior Personnel should be uploaded directly into Fastlane in .xls or .xlsx format as a "Collaborator and Other Affiliations" Single Copy Document. NSF staff use this information in the merit review process to help manage reviewer selection; the spreadsheet will ensure the COA information has a common, searchable format. *Submitters using Grants.gov may upload this document as a PDF.*

S&CC Proposal Preparation Checklist:

The following checklists are provided as reminders of the items that should be checked before submitting a proposal to this solicitation. These are a summary of the requirements described above. For the items marked with (RWR), the proposal will be returned without review if the required item is not compliant at the submission deadline.

For all full proposals:

- (RWR) A section labeled "Integrative Research" is required within the Project Description.
- (RWR) A section labeled "Community Engagement" is required within the Project Description.
- (RWR) A section labeled "Management Plan" is required within the Project Description.
- (RWR) A section labeled "Evaluation Plan" is required within the Project Description.
- (RWR) Failure to submit a required LOI by the LOI deadline.
- (RWR) Limit on number of proposals per PI, Co-PI, Senior Personnel, or Consultant not to exceed two.
- (RWR) A list of Project Personnel and Partner Institutions, up to two pages, is required as a Supplementary Document.
- Letters of Collaboration are permitted as Supplementary Documents.

The following items are not specific to this solicitation, but are included as reminders, and apply to all NSF proposals unless otherwise noted by the solicitations (see the PAPPG for further information). This is a summary of key items, but does not replace the complete set of requirements in the PAPPG.

- (RWR) Project Summary not to exceed one page.
- (RWR) Project Description not to exceed 15 pages.
- (RWR) Within the Project Description, a section labeled "Intellectual Merit."
- (RWR) Within the Project Description, a section labeled "Broader Impacts."
- (RWR) Within the Project Description, a description of "Results from Prior NSF Support," including intellectual merit and broader impacts (or a specific statement indicating that the PI has no prior NSF support).
- (RWR) If the budget includes postdoctoral researchers, a one-page Postdoctoral Researcher Plan must be included as a Supplementary Document.
- (RWR) A Data Management Plan, not to exceed two pages, must be included as a Supplementary Document.
- Collaborators & Other Affiliations (COA) for each PI, co-PI, and Senior Personnel should be submitted using the spreadsheet template uploaded as Single Copy Documents.

B. Budgetary Information

Cost Sharing:

Inclusion of voluntary committed cost sharing is prohibited.

Budget Preparation Instructions:

Budgets for all projects must include funding for one or more designated S&CC project representatives (PI/co-PI/Senior Personnel or NSF-approved replacement) to attend each S&CC PI meeting during the proposed lifetime of the award (see Section II of this program solicitation).

C. Due Dates

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

January 30, 2018

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

February 28, 2018

D. FastLane/Grants.gov Requirements

For Proposals Submitted Via FastLane:

To prepare and submit a proposal via FastLane, see detailed technical instructions 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.

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://www.grants.gov/web/grants/applicants.html>. In addition, the NSF Grants.gov Application Guide (see link in Section V.A) provides instructions regarding the technical 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.

Proposers that submitted via FastLane are strongly encouraged to use FastLane to verify the status of their submission to NSF. For proposers that submitted via Grants.gov, until an application has been received and validated by NSF, the Authorized Organizational Representative may check the status of an application on Grants.gov. After proposers have received an e-mail notification from NSF, Research.gov should be used to check the status of an application.

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 PAPPG Exhibit III-1.

A comprehensive description of the Foundation's merit review process is available on the NSF website at: https://www.nsf.gov/bfa/dias/policy/merit_review/.

Proposers should also be aware of core strategies that are essential to the fulfillment of NSF's mission, as articulated in *Investing in Science, Engineering, and Education for the Nation's Future: NSF Strategic Plan for 2014-2018*. 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 strategic objectives 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 must recruit, train, and prepare a diverse STEM workforce to advance the frontiers of science and participate in the U.S. technology-based economy. NSF's contribution to the national innovation ecosystem is to provide cutting-edge research under the guidance of the Nation's most creative scientists and engineers. NSF also supports development of a strong science, technology, engineering, and mathematics (STEM) workforce by investing in building the knowledge that informs improvements in STEM teaching and learning.

NSF's mission calls for the broadening of 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. (PAPPG 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 PAPPG 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

How effectively does the proposal address integrative research, community engagement, project management, and evaluation?

B. Review and Selection Process

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

Reviewers will be asked to evaluate proposals using two National Science Board approved merit review criteria and, if applicable, additional program specific criteria. A summary rating and accompanying narrative will generally be completed and submitted by each reviewer and/or panel. 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 strives to be able to tell applicants whether their proposals have been declined or recommended for funding within six months. Large or particularly complex proposals or proposals from new awardees may require additional review and processing time. The time interval begins on the deadline or target date, or receipt date, whichever is later. The interval ends when the Division Director acts upon the Program Officer's recommendation.

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. After an administrative review has occurred, Grants and Agreements Officers perform 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.

Once an award or declination decision has been made, Principal Investigators are provided feedback about their proposals. In all cases, reviews are treated as confidential documents. Verbatim copies of reviews, excluding the names of the reviewers or any reviewer-identifying information, 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.

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 notice, 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 notice; (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 notice. 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 https://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 Proposal & Award Policies & Procedures Guide* (PAPPG) Chapter VII, available electronically on the NSF Website at https://www.nsf.gov/publications/pub_summ.jsp?ods_key=pappg.

Special Award Conditions:

For every S&CC award, one or more designated project representatives (PI/co-PI/Senior Personnel or NSF-approved replacement) must attend annual S&CC PI meetings throughout the duration of the grant.

As a condition of every S&CC award, the grantee agrees to submit requested project data for the purpose of program evaluation to an NSF third-party evaluator.

Attribution of support in publications must acknowledge the National Science Foundation, the award number, and the program, by including the phrase, "as part of the NSF Smart & Connected Communities Program."

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 no later than 90 days prior to the end of the current budget period. (Some programs or awards require submission of more frequent project reports). No later than 120 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 Proposal & Award Policies & Procedures Guide* (PAPPG) Chapter VII, available electronically on the NSF Website at https://www.nsf.gov/publications/pub_summ.jsp?ods_key=pappg.

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:

- David Corman, Program Director, CISE/CNS, telephone: (703) 292-8754, email: dcorman@nsf.gov
- Radhakishan Baheti, Program Director, ENG/ECCS, telephone: (703) 292-8339, email: rbaheti@nsf.gov
- Cynthia Chen, Program Director, ENG/CMMI, telephone: (703)292-2563, email: qchen@nsf.gov
- John Cherniavsky, Program Director, EHR/DRL, telephone: (703) 292-5136, email: jchernia@nsf.gov
- Robin Dillon-Merrill, Program Director, ENG/CMMI, telephone: 703-292-4921, email: rdillonm@nsf.gov
- Bruce Hamilton, Program Director, ENG/CBET, telephone: (703)292-9054, email: bhamilto@nsf.gov

Meghan Houghton, Staff Associate, CISE, telephone: (703) 292-4449, email: mehought@nsf.gov

- Sara Kiesler, Program Director, SBE/SES, telephone: (703) 292-8643, email: skiesler@nsf.gov
- Tatiana Korelsky, Program Director, CISE/IIS, telephone: (703) 292-8930, email: tkorelsk@nsf.gov
- Anthony Kuh, Program Director, ENG/ECCS, telephone: (703) 292-2210, email: akuh@nsf.gov
- Richard Malak, Program Director, ENG/CMMI, telephone: (703) 292-7902, email: rmalak@nsf.gov
- Sunil Narumalani, Program Director, SBE/BCS, telephone: (703) 292-4995, email: snarumal@nsf.gov
- Wendy Nilsen, Program Director, CISE/IIS, telephone: (703) 292-2568, email: wnilsen@nsf.gov
- Rahul T. Shah, Program Director, CISE/CCF, telephone: (703) 292-2709, email: rshah@nsf.gov
- Sylvia Spengler, Program Director, CISE/IIS, telephone: (703) 292-8930, email: sspengle@nsf.gov
- Jonathan Sprinkle, Program Director, CISE/CNS, telephone: (703) 292-8719, email: jsprinkl@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, "NSF Update" is an information-delivery system designed to keep potential proposers and other interested parties apprised of new NSF funding opportunities and publications, important changes in proposal and award policies and procedures, and upcoming NSF [Grants Conferences](#). Subscribers are informed through e-mail or the user's Web browser each time new publications are issued that match their identified interests. "NSF Update" also is available on [NSF's website](#).

Grants.gov provides an additional electronic capability to search for Federal government-wide grant opportunities. NSF funding opportunities may be accessed via this 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 (FASSED) provide funding for special assistance or equipment to enable persons with disabilities to work on NSF-supported projects. See the *NSF Proposal & Award Policies & Procedures Guide* Chapter II.E.6 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 <https://www.nsf.gov>

- **Location:** 2415 Eisenhower Avenue, Alexandria, VA 22314
- **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
Office of the General Counsel
National Science Foundation
Alexandria, VA 22314

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