

SCIENCE AND TECHNOLOGY CENTERS (STC): INTEGRATIVE PARTNERSHIPS

Program Solicitation

NSF 00-67

OFFICE OF INTEGRATIVE ACTIVITIES

DEADLINE DATES:

Notice of Intent Deadline: June 15, 2000

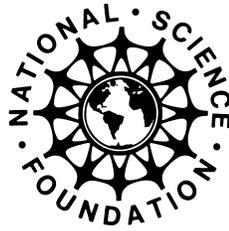
Preproposal Deadline: August 11, 2000

Full Proposal Deadline: April 2, 2001

Next Competition Expected to Start: June 2003



NATIONAL SCIENCE FOUNDATION



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SUMMARY OF PROGRAM REQUIREMENTS

GENERAL INFORMATION

Program Name: Science and Technology Centers (STC): Integrative Partnerships

Short Description/Synopsis of Program:

The Science and Technology Centers (STC): Integrative Partnerships Program supports innovation in the integrative conduct of research, education and knowledge transfer. Science and Technology Centers build intellectual and physical infrastructure within and between disciplines, weaving together knowledge creation, knowledge integration, and knowledge transfer. STCs conduct world-class research through partnerships of academic institutions, national laboratories, industrial organizations, and/or other public/private entities. New knowledge thus created is meaningfully linked to society.

STCs enable and foster excellent education, integrate research and education, and create bonds between learning and inquiry so that discovery and creativity more fully support the learning process. STCs capitalize on diversity through participation in center activities and demonstrate leadership in the involvement of groups underrepresented in science and engineering.

Contact at NSF: Contact the Office of Integrative Activities at (703) 306-1040 or stc@nsf.gov

Applicable Catalog of Federal Domestic Assistance (CFDA) No.:

- 47.041 Engineering Grants
- 47.049 Mathematical and Physical Sciences
- 47.050 Geosciences
- 47.070 Computer and Information Science and Engineering
- 47.074 Biological Sciences
- 47.075 Social, Behavioral, and Economic Sciences
- 47.076 Education and Human Resources
- 47.078 Polar Programs

ELIGIBILITY INFORMATION

◆ **Limitation on the categories of organizations that are eligible to submit preproposals and proposals:**

Preproposals and proposals may be submitted by U.S. academic institutions with significant research and degree-granting education programs in any area of science and engineering normally supported by NSF. Preproposals and proposals involving integrated partnerships (i.e., multi-institutional arrangements including other universities/colleges, national laboratories, research museums, private sector research laboratories, state and local government laboratories, and international collaborations) are encouraged. Note that the number of participating institutions is not necessarily a measure of quality. Preproposals and proposals must make clear

that all institutions involved as partners are necessary to the goals and function of the Center. Preproposals and proposals must describe effective management of all partner institutions. A partner is an institution or organization that invests intellectual resources in the Center, backed by financial commitment to the Center to ensure vital participation in an integrative effort incorporating research, education, and knowledge transfer.

◆ **PI eligibility limitations:** None

◆ **Limitations on existing STCs:**

Existing STCs or group members from such STCs who propose to focus on radically different research topics or themes from those they are currently pursuing may participate in this open competition. To be radically different, the proposers would need to focus on a different topic, not simply extend the methods and intent of the current STC to a slightly larger purview or just incorporate a new geographic area. If successful, the new awards will not commence until the end of the Center's current term of support.

The STC Program will not normally provide simultaneous support for more than one STC led by any one institution from this competition.

The STC Program complements the NSF Engineering Research Centers (ERC), the Materials Research Science and Engineering Centers (MRSEC), and other programs that support group research and education activities. Simultaneous consideration of duplicate center proposals by other NSF programs is not permitted. However, participation in a Center does not preclude individuals from receiving NSF support for their individual research in complementary areas.

◆ **Limitation on the number of preproposals that may be submitted by an organization:**

A single institution may submit no more than five preproposals as lead institution, and may be involved as a partner in additional preproposals submitted by other institutions.

◆ **Cost sharing requirements:**

For eligibility purposes, cost sharing at a level of at least, but no more than 30% of the requested total amount of NSF funds is required for all preproposals and proposals submitted in response to this solicitation.

◆ **Budgetary limitations:**

Proposed STC annual budgets may range from \$1.5M to \$4.0M per year of NSF support, but preproposals and proposals outside this range will be ineligible.

AWARD INFORMATION

- ◆ **Type of award anticipated:** Cooperative Agreement with an initial commitment of five years and a potential maximum duration of ten years.
- ◆ **Number of awards anticipated in FY 02:** 8-10 awards.
- ◆ **Amount of funds available:** Approximately \$30 million will be available for the STC program in FY 2002 pending availability of funds.
- ◆ **Anticipated date of award:** August 2002.

PROPOSAL PREPARATION & SUBMISSION INSTRUCTIONS

- ◆ **Proposal Preparation Instructions**

- **Notice of Intent requirements:**

Lead institutions intending to submit a preproposal should submit a notice of intent through their sponsored research office. The notice of intent must be submitted to the STC Program via e-mail to stc@nsf.gov. The subject of the e-mail message must be "Notice of Intent" followed by the name of the academic institution. The notice must not exceed 500 words, and must give a brief summary of the vision for the Center and the structure of its research, education, and knowledge transfer. The notice must include the name of the Principal Investigator and a list of all participating institutions (not included in the 500 word limit). The purpose of this notice is to enable NSF to determine the composition of its review panels.

- **Preproposal requirements:**

Preproposals must be submitted with the proposed Center Director as the Principal Investigator and must include only the following: (1) Cover Sheet; (2) Information about Principal Investigators/Project Directors; (3) Project Summary (one page); (4) Table of Contents; (5) Narrative Description of the Focus, Research Plans and Relevance; (6) Description of Proposed Activities in Science or Engineering Education, Human Resource Development, and Collaborations; (7) Outline of Arrangements for Center Administration and Management (items 5, 6, and 7 are limited to nine pages including tables and illustrations); (8) Lists of Project Personnel and Institutions (two pages); (9) Synopsis of Institutional and Other Resource Commitments and Potential Funding to the Proposed Center (one page); (10) Budget (NSF Form 1030) and Budget Justification (one page); (11) References Cited (two pages); (12) Biographical Sketches (two pages per person); and (13) Letters of Commitment.

- **Proposal preparation instructions:**

Standard NSF *Grant Proposal Guide* instructions apply. Full proposals must include only the following information: (1) Cover Sheet; (2) Information about Principal Investigators/Project Directors; (3) Project Summary (two pages); (4) Table of Contents; (5) Narrative Description of the Focus, Research Plans and Relevance (ten pages); (6) Education and Human Resource Development (five pages); (7) Knowledge Transfer (three pages); (8) Rationale for the Center Concept (one page); (9) Management Plan (three pages); (10) Lists of Project Personnel and Institutions (two pages); (11) Intellectual Property Rights (one page); (12) Shared Experimental Facilities (one page); (13) Committed Funding by Source (one page); (14) Institutional and Other Sector Support (one page); (15) Facilities and Equipment (NSF Form 1363); (16) Budget (NSF Form 1030) and Budget Justification (two pages); (17) References Cited (five pages); (18) Biographical Sketches (two pages per person); (19) Current and Pending Support (NSF Form 1239); and (20) Letters of Commitment.

- **Supplemental preproposal and proposal preparation instructions:** Lists of (1) Project Personnel, (2) Institutions, and (3) Potential Reviewers with Conflicts of Interest must be submitted via e-mail as simple ASCII Text Files to stc-coi@nsf.gov with preproposal or proposal number included in the following subject line: STC Conflict Information for Preproposal (or Proposal) No. 00-XXXXX.

- **Deviations from standard (GPG) proposal preparation instructions:** FastLane required. See preproposal and proposal preparation instructions above for page limitations.

- ◆ **Budgetary Information**

- **Cost sharing/matching requirements:**

For eligibility purposes, cost sharing at a level of at least, but no more than 30% of the requested total amount of NSF funds is required for all preproposals and proposals submitted in response to this solicitation. The proposed cost sharing must be shown on line M of the preproposal and proposal budget (NSF Form 1030).

Preproposals and proposals without the mandated amount of cost sharing will be ineligible and will be returned without review.

Letters of commitment to cost sharing from the appropriate institutional officer(s) must be submitted electronically with the preproposal and proposal.

- **Indirect cost (F&A) limitations:** None.

- **Other budgetary limitations:**

Proposed STC annual budgets may range from \$1.5M to \$4.0M per year of NSF support. Preproposals and proposals outside this range will be ineligible and will be returned without review.

- ◆ **FastLane Requirements**

- **FastLane proposal preparation requirements:** FastLane submission required for preproposals and proposals.
- **FastLane point of contact:** (703) 306-1040 and stcflane@nsf.gov; or (703) 306-1142 and fastlane@nsf.gov

- ◆ **Deadlines**

- **Notice of Intent Deadline:** 5:00 PM, local time, June 15, 2000 (e-mail)
- **Preproposal Deadline:** 5:00 PM, local time, August 11, 2000 (FastLane)
- **Full Proposal Deadline:** 5:00 PM, local time, April 2, 2001 (FastLane)
- **Next STC Competition Expected to Start:** June 2003

PROPOSAL REVIEW INFORMATION

- ◆ **Merit Review Criteria:**

Standard National Science Board approved criteria apply. In addition, NSF will consider three other factors in making STC awards. These considerations specific to STCs include: (1) Value of the Center-Mode to Research, Education, and Knowledge Transfer; (2) Integrative Nature of the Proposed Center; and (3) Leadership, Management Plan, Impact of Institutional Support, and Budget.

AWARD ADMINISTRATION INFORMATION

- ◆ **Grant Award Conditions:** GC-1 and CA-1

- ◆ **Special grant conditions anticipated:**

Cooperative Agreement will have an extensive section of Special Conditions relating to period of performance, statement of work & awardee responsibilities, NSF responsibilities, joint NSF-awardee responsibilities, funding & funding schedule, reporting requirements, lead personnel, and other conditions.

◆ **Special reporting requirements anticipated:**

Centers selected will be required to submit annual reports on progress and plans, which will be used as a basis for performance review and determining the level of continued funding. To support this review and the management of a Center, STCs will be required to develop a set of management and performance indicators for submission annually to NSF via an NSF evaluation technical assistance contractor. Part of this reporting will take the form of a database which will be owned by the institution and eventually made available to an evaluation contractor. This database will capture specific information to demonstrate progress towards achieving the goals of the program. Such reporting requirements will be included in the cooperative agreement which is binding between the academic institution and the NSF.

I. INTRODUCTION

The STC Integrative Partnerships Concept

The Science and Technology Centers (STC): Integrative Partnerships Program supports innovation in the integrative conduct of research, education and knowledge transfer.

Science and Technology Centers build intellectual and physical infrastructure within and between disciplines, weaving together knowledge creation, knowledge integration, and knowledge transfer. STCs conduct world-class research through partnerships of academic institutions, national laboratories, industrial organizations, and/or other public/private entities. New knowledge thus created is meaningfully linked to society.

STCs enable and foster excellent education, integrate research and education, and create bonds between learning and inquiry so that discovery and creativity more fully support the learning process.

STCs capitalize on diversity through participation in center activities and demonstrate leadership in the involvement of groups underrepresented in science and engineering.

II. DESCRIPTION OF STC PROGRAM

STC Program Objectives

The objectives of the STC Program are to:

- Support research and education of the highest quality;
- Exploit opportunities in science, engineering and technology where the complexity of the research agenda requires the advantages of scope, scale, change, duration, equipment and facilities, that a Center can provide;
- Support frontier investigations at the interfaces of disciplines, and/or fresh approaches within disciplines;
- Engage the Nation's intellectual talent, robustly drawn from its full human diversity, in the conduct of research and education activities;
- Promote organizational connections and linkages within and between campuses, schools and/or the world beyond (state, local, federal agencies, national labs, industry, international);
- Focus on integrative learning and discovery and the preparation of U.S. students for a broad set of career paths; and
- Foster science and engineering in service to society especially with respect to new research areas, promising new instrumentation and potential new technologies.

STC Center Features

STCs must have a unifying research focus involving any area(s) of research supported by the Foundation. STCs can vary in size and exhibit diverse forms of organization, participation, and operation. No single type of Center fits the needs of every field. Rather, the size, structure, and operation of an STC are determined by the proposed research, education, and knowledge transfer activities. While each Center is unique in some respects, each must:

- Be based in an academic institution;
- Be directed by a science or engineering faculty member and integrated into academic programs;
- Reflect a commitment to achieving strategic goals shared by the host and partnering institutions as demonstrated by cost sharing and other institutional commitments;
- Provide a variety of education and research opportunities for U.S. students and faculty (e.g., undergraduate and graduate students, postdoctoral researchers, industrial fellows, students from groups underrepresented in science and engineering, K-12 teachers, and visiting participants) such that education is infused with the excitement of discovery and research is enriched through a diversity of learner perspectives;
- Have significant intellectual exchange and resource linkages among various types of institutions and organizations to facilitate knowledge transfer (e.g., schools; colleges and universities such as minority-serving institutions, community colleges, EPSCoR institutions, and others; nonprofit organizations; national laboratories; industry; federal, state, and local governments);
- Include industrial, national or international laboratory internships, or other career broadening experiences as appropriate to the research area; and
- Have annual budgets ranging from \$1.5M to \$4.0M of NSF support.

Center Leadership and Management

The STC Director must have the capacity to develop and lead a team to fulfill a shared vision. The Director must be supported in this role by a management team comprised of, for example, a deputy or co-Director (who will share some of the leadership responsibilities), leaders of research thrusts, an education coordinator, a knowledge transfer (industrial liaison) coordinator, and an administrative and financial manager. In addition, the Center will maintain and convene annually an external advisory group. The advisors must include representation from those served by the Center (e.g., academic institutions, industry, state and local agencies, national laboratories) and display the diversity of the U.S. citizenry in its membership. Those with a financial, institutional, or collaborative connection to the Center may not serve as members of the external

advisory group. The function of the external advisory group is to provide guidance and advice to the Center as well as to ensure that the Center's activities are consistent with its vision, goals, and objectives.

The Center Director is responsible for the management, staffing, and resource allocation of the STC; for administering the award in accordance with NSF policies and the terms of the cooperative agreement, and for serving as the liaison between the Center and the National Network of STC Directors.

National Network of STC Directors

STC Directors will serve as members of a national liaison team for the STC Program. The Directors are responsible for developing, implementing, and maintaining a liaison structure with active participation of each Center. This network is charged with addressing common goals, problems and opportunities, and facilitating personnel and resource exchanges as well as integrated partnerships and cooperation among Centers.

Annually a chair of this liaison team will be elected by participating members and will serve a one-year term.

Typical functions of the National Network of STC Directors include: fostering complementarity and balance among research, education and knowledge transfer activities, and avoidance of duplication of effort; facilitating interactions to address research, education, and management issues and opportunities which transcend individual Center capabilities; liaison with private sector, state, local and national laboratories to identify needs/opportunities and to plan joint implementation strategies, workshops, and other fora; cooperation and liaison with NSF staff in the development and maintenance of databases and other effective metrics in response to the requirements of the Government Performance and Results Act; and preparing documents to enhance public understanding about the importance of science, engineering, technology and education advances in service to society.

III. ELIGIBILITY

Preproposals and proposals may be submitted by U.S. academic institutions with significant research and degree-granting education programs in any area of science and engineering normally supported by NSF. A single institution may submit no more than five preproposals as lead institution, and may be involved as a partner in additional preproposals submitted by other institutions. Each must demonstrate the institutional commitment to the area proposed. However, the STC Program will not normally provide simultaneous support for more than one STC led by any one institution from this competition.

Preproposals and proposals involving integrated partnerships (i.e., multi-institutional arrangements including other universities/colleges, national laboratories, research museums, private sector research laboratories, state and local government laboratories, and international collaborations) are encouraged. In such proposals, one institution must accept overall management responsibility for the proposed Center and is thus designated as lead institution. Note that the number of participating institutions is not necessarily a measure of quality. Preproposals and proposals must make clear that all institutions involved as partners are necessary to the goals and function of the Center.

Preproposals and proposals must describe effective management of all partner institutions. A partner is an institution or organization that invests intellectual resources in the Center, backed by financial commitment to the Center to ensure vital participation in an integrative effort incorporating research, education, and knowledge transfer.

Existing STCs or group members from such STCs who propose to focus on radically different research topics or themes from those they are currently pursuing may participate in this open competition. To be radically different, the proposers would need to focus on a different topic, not simply extend the methods and intent of the current STC to a slightly larger purview or just incorporate a new geographic area. If successful, the new awards will not commence until the end of the Center's current term of support.

The STC Program complements the NSF Engineering Research Centers (ERC), the Materials Research Science and Engineering Centers (MRSEC), and other programs that support group research and education activities. Simultaneous consideration of duplicate center proposals by other NSF programs is not permitted. However, participation in a Center does not preclude individuals from receiving NSF support for their individual research in complementary areas.

For eligibility purposes, cost sharing at a level of at least, but no more than 30% of the requested total amount of NSF funds is required for all preproposals and proposals submitted in response to this solicitation. Proposed STC annual budgets may range from \$1.5M to \$4.0M per year of NSF support, but preproposals and proposals outside this range will be ineligible.

IV. AWARD INFORMATION

The amount of funds available for this competition is approximately \$30 million in FY 2002 pending availability of funds and NSF expects to make about eight to ten awards. The awards will be made as cooperative agreements with an initial commitment of five years and a potential duration of ten years. The amount of the NSF's investment in each center will depend upon the needs, plans, and opportunities offered by the Center, as well as the availability of NSF funds. Proposed STC annual budgets may range from \$1.5M to \$4.0M per year of NSF support. Preproposals and proposals outside this range will be ineligible and will be returned without review.

The appropriate NSF research directorates will have primary responsibility in the oversight of individual STCs. The progress and plans of each funded STC will be reviewed by NSF annually, prior to receiving continued NSF support. In the fourth year of operation the STC may submit a renewal proposal for continued support which will undergo merit review. The STC's achievements and future plans will be evaluated comprehensively. The review will determine if the STC is meeting the goals and objectives as originally proposed. The STC performance assessment will be guided by the goals and objectives of the STC Program and the individual goals of the particular STC.

Centers successful in passing the fourth-year review will be renewed for another five years, commencing at the beginning of the sixth year, and including a two-year phase-out period. Centers that pass the fourth-year review will continue to be reviewed by NSF at least every 18 months. Centers that do not pass the fourth year review will be phased-out over a one-year period at a reduced level of support. The NSF will support an STC for a maximum of ten years.

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Notice of Intent

Lead institutions intending to submit a preproposal should submit a notice of intent through their sponsored research office. The notice of intent must be submitted to the STC Program via e-mail to stc@nsf.gov by 5:00 p.m., local time, June 15, 2000. The subject of the e-mail message must be "Notice of Intent" followed by the name of the academic institution. The notice must not exceed 500 words, and must give a brief summary of the vision for the Center and the structure of its research, education, and knowledge transfer. The notice must include the name of the Principal Investigator and a list of all participating institutions (not included in the 500 word limit). The purpose of this notice is to enable NSF to determine the composition of its review panels.

B. Proposal Preparation Instructions

Proposals submitted in response to this program solicitation must be prepared and submitted in accordance with the general guidelines contained in the *Grant Proposal Guide* (GPG), NSF 00-2. The complete text of the GPG (including electronic forms) is available electronically on the NSF Web site at: <http://www.nsf.gov/>. Paper copies of the GPG may be obtained from the NSF Publications Clearinghouse, telephone (301) 947-2722 or by e-mail from pubs@nsf.gov.

Proposers are reminded to identify program solicitation number (NSF 00-67) in the program announcement/solicitation block on the NSF Form 1207, "*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.

Preproposal Content

The preproposal must be submitted with the proposed Center Director as the Principal Investigator and must include only the following:

- (1) Cover Sheet (NSF Form 1207).
- (2) Information about Principal Investigators/Project Directors (NSF Form 1225) is automatically generated by FastLane. (Note: NSF limits the number of Principal Investigators (PI) to one PI and four Co-PIs. Additional lead personnel can be listed as Senior Personnel on the Budget [NSF Form 1030] and in the Project Description. Senior Personnel must provide biographical sketches.)

(3) Project Summary. Provide a one page description of the vision and key components of the STC. The names of the principal participating institutions involved in establishing the proposed STC must be included in the one page description.

(4) Table of Contents (NSF Form 1359 cannot be edited and is automatically generated by FastLane).

The Project Description must contain the following sections, incorporating items five through nine:

(5) Narrative description of the Focus, Research Plans, and Relevance. Develop a research focus that is sufficiently long-term to justify a Center form of organization and broad enough to permit change as the research proceeds. Describe the Center's rationale, goals and proposed research activities in sufficient detail to allow assessment of their merit and the necessity for the Center mode of operation. Indicate the potential impact the Center's research will have on the nation's scientific and/or technological base.

(6) Give an overview of the goals and proposed activities in education and human resource development. Discuss how they integrate strategically with the research and organizational/partnering opportunities of the Center and will achieve the participation of highly qualified U.S. students, including underrepresented groups. Describe knowledge transfer plans and their intended impact across various types of institutions and organizations from industry to colleges, the K-12 education system, and public sector. Describe the role of international collaborations and shared experimental facilities, as appropriate.

(7) An outline of the proposed arrangements for administration and management of the Center.

Note: Items 5, 6, and 7 above are limited to nine pages including tables and illustrations regardless of the number of research groups or themes.

(8) Lists of Project Personnel and Institutions (two-page limit). In addition to providing a comprehensive listing of personnel and institutions involved in the STC, these lists also are used for determining conflicts of interest in the review process. Ensuring that reviewers do not have conflicts of interest can be difficult when, as in this case, many preproposals involve multiple investigators and multiple institutions. To assist NSF in identifying conflicts of interest, the following information must be included in the preproposal and also submitted via e-mail within five days of FastLane submission as simple ASCII Text Files to stc-coi@nsf.gov with your preproposal number included in the following subject line: STC Conflict Information for Preproposal No. 00-XXXXX. You can obtain the number of your preproposal from FastLane as soon as your preproposal has been submitted by your Sponsored Projects Office.

Provide three lists:

- a. Project Personnel. Subdivide the listing of STC project personnel into the following categories, as applicable: Academic Institutions (colleges, universities), Federal Government (national laboratories), Industry, Non-Governmental Organizations, State and Local Government, International, and Other. For the

- Academic category, list in alphabetical order all project personnel in the following format: last name, first name, institutional affiliation, school, department, role (e.g., Smith, Jane, University of X, School of Y, Department of Z , team leader). For all other categories, list in alphabetical order all project personnel in the format: last name, first name, institutional affiliation, role. The names included in the non-Academic categories must be personnel who contributed to the development of the preproposal and are interested in joining and supporting the Center through financial and/or other supporting mechanisms.
- b. Institutions. Subdivide the listing of institutions involved in the STC into the following categories, as applicable: Academic Institutions (colleges, universities), Federal Government (national laboratories), Industry, Non-Governmental Organizations, State and Local Government, International, and Other. For each category, list in alphabetical order all institutions involved in the project.
 - c. Potential Reviewers with Conflicts of Interest. List in alphabetical order all persons who have a conflict of interest with any of the project's senior personnel (PI, Co-PI, other senior personnel). In particular, list all persons falling into the conflict of interest categories specified in Section II.D.6.e.i-iii of the NSF *Grant Proposal Guide* (NSF 00-2). Provide this information in the following format: last name, first name, institution, nature of conflict, project personnel with whom the conflict exists. For example, if Thomas Jones of the University of X recently co-authored an article with Peter Brown, a Co-PI on the proposed project, the corresponding list entry would read as follows: Jones, Thomas, University of X, co-author on article, Brown.

(9) Provide a synopsis (one-page limit) of institutional and other resource commitments and potential funding to the proposed Center.

(10) Provide a budget (NSF Form 1030) for each of the five years and submit a budget justification (not to exceed one page). Cost sharing at a level of at least, but no more than 30% of the requested total amount of NSF funds is required for all preproposals submitted in response to this solicitation. The proposed cost sharing must be shown on line M of the preproposal budget (NSF Form 1030).

(11) References Cited. Section not to exceed two pages.

(12) Biographical sketches (two-page limit per person). For the Principal Investigator, Co-Principal Investigator(s), and non-Co-PI Senior Personnel, provide a brief biographical sketch or curriculum vitae, including a list of the five most recent or significant publications. Any information that is deemed pertinent is allowable provided that the two page limit is not exceeded. Do not send copies of the publications.

(13) Letters of commitment addressed to the Director, OIA, are required from the proposing institution and partners, signed by authorized official(s) committing support (including cash and/or in-kind cost sharing) to the STC during its ten-year life span. **These letters must be scanned into the Supplementary Documents section of your FastLane preproposal and submitted electronically as part of the preproposal. Hard copies must not be mailed to NSF.**

No other items are to be included. Preproposals containing items other than those required above will not be reviewed.

Full Proposal Content

The full proposals must include only the following information:

- (1) Cover Sheet (NSF Form 1207). In most cases, August 1, 2002, should be listed as the start date.
- (2) Information about Principal Investigators/Project Directors (NSF Form 1225) is automatically generated by FastLane. (Note: NSF limits the number of Principal Investigators (PI) to one PI and four Co-PIs. Additional lead personnel can be listed as Senior Personnel on the Budget [NSF Form 1030] and in the Project Description. Senior Personnel must provide biographical sketches and list current and pending support.)
- (3) Project Summary (two-page limit). At the top of the first page include the title of the STC and the name of the Director. Identify the institution leading the STC as well as the other participating institutions. This summary must provide a clear description of the Center, its rationale, and vision; its distinguishing features, multidisciplinary or disciplinary focus, proposed research and educational activities, integrative components, diversity plan, and knowledge transfer strategy.
- (4) Table of Contents (NSF Form 1359 cannot be edited and is automatically generated by Fast Lane).

The Project Description must contain the following sections, incorporating items five through fourteen:

- (5) Narrative description of the Focus, Research Plans, and Relevance (ten-page limit). Develop a research focus that is sufficiently long term to justify a Center form of organization and agile enough to permit change as the research proceeds. Describe the Center's goals and proposed research activities in sufficient detail to allow assessment of their scientific merit and the necessity for the Center mode of operation. Indicate what impact the Center's research will have on the nation's scientific and/or technological base.
- (6) Education and Human Resource Development (five-page limit). Discuss the rationale and goals of the proposed education and human resource development activities and how they integrate strategically with the research and organizational/partnering opportunities of the proposed Center. Describe the proposed activities in sufficient detail to allow assessment of their intrinsic merit, potential effectiveness, anticipated contribution toward a diverse, highly competent, and globally-engaged technical and instructional workforce and educated citizenry, and other societal benefits. Include plans for attracting and retaining high quality U. S. students (undergraduates, graduates, postdoctoral) in Center activities and for increasing participation of women and members of underrepresented minorities in Center research and education endeavors. Also address plans for making time from the baccalaureate to the Ph. D. degree approach four to five years. Finally, provide a summary chart of M. S. and Ph. D. degrees completed during the past three years under the directorship of the proposed Center senior personnel. Also indicate average time to complete degree requirements. Indicate gender, ethnic origin, and nationality of these degree recipients.

(7) Knowledge Transfer (three-page limit). Describe plans for linking appropriate communities and institutions beyond the sponsoring institution—other colleges, universities, disciplinary subfields, other disciplines, nonprofit research organizations, government laboratories, industry, state, local, and/or international entities—to enhance involvement and knowledge transfer. These linkages should involve significant intellectual exchange, internships, and resource commitments (e.g., funds, facilities, and/or people) in both directions between the sponsoring institution and partners. Partnerships and linkages beyond the boundaries of the academic institution are to be emphasized here.

If a proposal is selected for a site visit, Center staff will be expected to be aware of related state and national research capabilities as well as international programs in their fields of research.

(8) Rationale for the Center concept (one-page limit). Justify the center mode. Clearly indicate current activities in research, education, and knowledge transfer, why a Center is necessary, and what unique opportunities will be provided by the proposed Center. If the proposed Center research is closely related to ongoing research at an existing Center (e.g., STC, ERC, MRSEC, national laboratory), explain how the research activities of this Center complement as well as differ from those of the existing center(s).

(9) Management Plan (three-page limit). Provide a clear description of the organizational structure of the Center. Clearly outline mechanisms for focusing Center activities, selecting and integrating related research projects, allocating funds and equipment across all Center activities, and managing the involvement of other groups, scientific and educational. A description of a diverse external advisory group that will provide guidance and advice on all Center activities is required.

If a proposal is selected for a site visit, NSF will require additional information on the overall management of the Center.

(10) Lists of Project Personnel and Institutions (two-page limit). The Lists of Project Personnel and Institutions required as part of the preproposal (see Preproposal Preparation Instructions) must be revised to reflect any changes occurring since the time of preproposal submission. These lists, whether they have been revised or not, must be included in the proposal and also submitted via e-mail as simple ASCII Text Files to stc-coi@nsf.gov by April 4, 2001. The e-mail message must contain the proposal number obtained from FastLane embedded in the following subject line: STC Conflict Information for Proposal No. 00-XXXXX.

(11) Intellectual Property Rights (one-page limit). Provide a concise statement on the proposed Center's policies on Intellectual Property Rights. If a proposal is selected for a site-visit, a more detailed copy of the home institution's official policy will be required.

(12) Shared Experimental Facilities (four-page limit). Where appropriate, describe the shared facilities to be established, including specific major research instrumentation, and plans for the development of instrumentation. Describe plans for maintaining and operating the facilities, including staffing, provisions for user fees, and plans for ensuring access to outside users. Distinguish between existing facilities and those still to be developed.

(13) Committed Funding by Source (one-page limit). Reproduce Table 1 indicating the annual level of total committed support for five years from each source (i.e., NSF, the academic institution, industry, state and local governments, other federal agencies, and other sources). On this table, split each column, as needed, to indicate whether the support is in cash, or in-kind (space, faculty and staff positions, time of industrial personnel spent in the STC, capital equipment, and other in-kind pledges). NSF expects STCs to develop and implement plans to continue the effective and productive collaborations with other stakeholders in the integrated partnerships when NSF funding ceases.

Table 1

Committed Funding	Year 1		Year 2		Year 3		Year 4		Year 5	
	Cash \$	In-Kind \$								
NSF										
Industry										
Academic Institution										
Other Govt.										
Other										
Total										

(14) Institutional and other Sector Support (one-page limit). Outline the home institution's commitment: dollars, space (new space and/or renovations to existing facilities), faculty and staff positions, capital equipment, and access to facilities and instrumentation. Indicate dollar value where possible; otherwise, describe how the commitment contributes to realizing the strategic goals of the Center and associated institutions. Describe other-sector support that has been committed, including space, funds, facilities, and personnel for the center. Major commitments of other closely associated institutions may also be provided here.

(15) Facilities and Equipment (NSF Form 1363). This form must support the description of the infrastructure of the STC in the body of the proposal by describing the equipment and facilities available to the proposed STC.

(16) Budget and Budget Justification. Provide a budget (NSF Form 1030) for each of the five years. (FastLane will automatically fill out a cumulative budget for your proposal.) Cost sharing at a level of at least, but no more than 30% of the requested total amount of NSF funds is required for all proposals submitted in response to this solicitation. The proposed cost sharing must be shown on line M of the proposal budget (NSF Form 1030).

Submit a separate budget for each participating institution in cases where a subcontract exceeds \$100,000 per year. Identify items of equipment costing more than \$10,000. Full justification for the latter is required. Individual students may not be supported for a period in excess of five years. A budget justification (two-page limit) must be provided. Funds allocated for research, education, and knowledge transfer issues must be discernible.

NSF will not provide salary support for scientists, engineers, or educators employed by Federal agencies or Federally Funded Research and Development Centers. For participants at foreign organizations, NSF will consider support only for the U.S. portion of the collaborative projects involving U.S. and foreign institutions.

(17) References Cited. Section not to exceed five pages.

(18) Biographical Sketches (two page limit per person). For the Principal Investigator, Co-Principal Investigator(s), and non Co-PI Senior Personnel, provide a brief biographical sketch or curriculum vitae, including a list of the five most recent or significant publications. Any information that is deemed pertinent is allowable provided that the two page limit is not exceeded. Do not send copies of the publications.

(19) Current and Pending Support (NSF Form 1239). Provide a complete listing of current and pending support for the Principal Investigator, Co-Principal Investigator(s), and non Co-PI Senior Personnel only. Thus, if their biographical sketch was included in #18 above, then you must include a statement about their current and pending support. Please note on the top of the form if the individual is affiliated with a Government Laboratory, Industry, or other institutions that are not eligible for other support.

(20) Letters of commitment addressed to the Director, OIA, are required from the proposing institution and partners, signed by the authorized official(s) committing support (including cash and/or in-kind cost sharing) to the STC during its 10-year life span. Letters committing industrial and/or other partners to involvement and financial or collaborative support are required. **(Commitment letters are not included in the page count. These letters must be scanned into the Supplementary Documents section of your FastLane proposal and submitted electronically as part of the proposal. Hard copies must not be mailed to NSF.)**

Full proposals containing items other than those described above will not be reviewed.

C. Budgetary Information

Cost Sharing Requirements

For eligibility purposes, cost sharing at a level of at least, but no more than 30% of the requested total amount of NSF funds is required for all preproposals and proposals submitted in response to this solicitation. The proposed cost sharing must be shown on line M of the preproposal and proposal budget (NSF Form 1030). **Preproposals and proposals without the mandated amount of cost sharing will be ineligible and will be returned without review.**

The amount of cost sharing must be shown in the proposal in enough detail to allow NSF to determine its impact on the proposed project. Documentation of availability of cost sharing must be included in the proposal.

Only items which would be allowable under the applicable cost principles, if charged to the project, may be included as the grantee's contribution to cost sharing. Contributions may be made from any non-Federal source, including non-Federal grants or contracts,

and may be cash or in-kind (see OMB Circular A-110, Section 23). It should be noted that contributions counted as cost sharing toward projects of another Federal agency may not be counted towards meeting the specific cost sharing requirements of the NSF grant.

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

Budgetary Limitations

Proposed STC annual budgets may range from \$1.5M to \$4.0M per year of NSF support. **Preproposals and proposals outside this range will be ineligible and will be returned without review.**

D. Preproposal and Proposal Due Dates

Preproposal Deadline

The preproposal **MUST** be submitted via FastLane by 5:00 PM, local time, August 11, 2000.

Full Proposal Deadline

The full proposal **MUST** be submitted via FastLane by 5:00 PM, local time, April 2, 2001.

A preproposal or proposal is considered complete when the preproposal or proposal, including the Project Description, has been submitted to NSF. The receipt date will be the date the sponsored projects office transmits the preproposal or proposal to NSF.

The next STC competition is expected to start June 2003.

E. FastLane Requirements

Proposers are required to prepare and submit all preproposals and proposals for this Program Solicitation through the FastLane system. Detailed instructions for proposal preparation and submission via FastLane are available at: <https://www.fastlane.nsf.gov/al/newstan.htm>.

VI. PREPROPOSAL AND PROPOSAL REVIEW INFORMATION

A. NSF Preproposal and Proposal Review Process

Reviews of preproposals and proposals submitted to NSF are solicited from peers with expertise in the substantive area of the proposed research and education project. These reviewers are selected by Program officers charged with the oversight of the review process. NSF invites the proposer to suggest, at the time of submission, the names of appropriate or inappropriate reviewers. Care is taken to ensure that reviewers have no conflicts with the proposing team. Special efforts are made to recruit reviewers from non-academic institutions, minority serving institutions or adjacent disciplines to that principally addressed in the preproposal or proposal.

Preproposals and proposals will be reviewed against the following two general merit review criteria established by the National Science Board. Following each criterion are potential considerations that the reviewer may employ in the evaluation. These are suggestions and not all will apply to any given preproposal or proposal. Each reviewer will be asked to address only those that are relevant to the preproposal or proposal and for which he/she is qualified to make judgments.

What is the intellectual merit of the proposed activity?

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

What are the broader impacts of the proposed activity?

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

PIs must also address the following elements in their preproposal and proposal to provide reviewers with the information necessary to respond fully to both NSF merit review criteria. NSF staff will give these factors careful consideration in making funding decisions.

Integration of Research and Education

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

For STCs, integrating research and education also requires the ability to develop effective educational programs that will broaden the career paths of involved students; and includes plans for fostering a climate of interaction and effective knowledge transfer both among diverse departments of the academic institution and between the academic institution and its partners in industry and/or other sectors.

Integrating Diversity into NSF Programs, Projects, and Activities

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

For STCs, developing human resources also requires the ability to increase participation by U.S. citizens, particularly women and underrepresented minorities and persons with disabilities, in research and education; and includes plans for forming substantive and long-term partnerships and collaborations with minority-serving institutions and/or women's colleges.

In addition to the evaluation criteria stated above, NSF will consider the following factors in making STC awards. Excellence must be demonstrated in *all* criteria (general merit review criteria above and considerations specific to STCs below) for STC support to be recommended:

Value of the Center-Mode to Research, Education, and Knowledge Transfer

Are the identified science and technology challenges of sufficient import, scale, and complexity to justify a center-mode investment? Will the Center's educational programs make a special contribution to the achievement of a diverse, highly competent, and globally-engaged technical and instructional workforce and of an educated citizenry? Will any proposed new instruments, shared experimental facilities, and/or databases be of significant value to a broad community of users? Will the Center's partnerships achieve significant intellectual exchange with the school, public, industry, federal, and/or international sectors and thereby foster science and technology in service to society?

Integrative Nature of the Proposed Center

Are the research, educational, and knowledge transfer activities strategically integrated such that the whole is greater than the sum of the parts? Are the partners vital participants in an integrated whole?

Leadership, Management Plan, Impact of Institutional Support, and Budget

Do the center director and the center leadership team convincingly demonstrate the vision, experience, and capacity to manage a complex, multi-faceted, and innovative research, education, and knowledge transfer enterprise? What is the likely effectiveness of the proposed management plan, including the mechanisms for topic selection, resource allocation, progress evaluation, and project termination? Is there documentation of institutional and other commitments to the proposed Center? Is the requested budget appropriate?

A summary rating and accompanying narrative will be completed and signed by each reviewer. In all cases, reviews are treated as confidential documents. Verbatim copies of reviews, excluding the names of the reviewers, are mailed to the Principal Investigator/Project Director by the Program Director. In addition, the proposer will receive an explanation of the decision to award or decline funding.

B. Review Protocol and Associated Customer Service Standard

All preproposals and proposals are carefully reviewed by at least three other persons outside NSF who are experts in their fields and knowledgeable of partnerships that integrate science, mathematics, engineering, and technology research and education. A panel will be asked to formulate a recommendation to either support or decline each preproposal or proposal. Preproposals and proposals submitted in response to this solicitation will be reviewed as follows:

STC Review and Award Selection Process

Proposals will be evaluated in a multi-phase merit review process. In order to reduce the cost of proposal preparation and the workload on the scientific community, NSF will utilize a preproposal phase which will include evaluation by panels of individuals intellectually distinguished in their fields and experienced in integrative science, mathematics, engineering and technology research and education partnerships. The panelists will be asked to base their comments on the merit review criteria listed above. NSF will notify applicants of the results of the preproposal competition on or before December 15, 2000.

Proposing institutions whose preproposals are judged most promising and are recommended by the panel will be encouraged to submit full proposals that will be evaluated by both *ad hoc* mail and panel review using the selection criteria listed above; only invited full proposals will be accepted. This panel will identify a small number of full proposals deemed worthy of site-visit reviews; the other proposals will be declined. NSF will notify all proposers as to whether they will be declined or site-visited by August 2001. Although the site visit will cover all aspects of the proposal, Foundation staff will provide additional information that may be needed in advance of the site visit.

Finally, a comprehensive review of those activities site-visited will be conducted by an *ad hoc* STC Advisory Committee that will develop a prioritized recommended funding list. In developing its recommendations for awards, this committee will consider: the relative merit of the STC proposals using the criteria listed above, the balance of awards among scientific fields, geographical distribution, and the combined ability of the proposed Centers to meet the objectives of the STC Program. In developing funding recommendations to the Director and the National Science Board, the STC Advisory Committee's recommendations will be considered. NSF expects to announce the final results of the STC competition around March 2002.

In all cases, after National Science Board 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 cooperative agreement. Proposers are cautioned that only a Grants 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 an NSF Program Officer. A principal investigator or organization that makes financial or personnel commitments in the absence of a cooperative agreement signed by the NSF Grants Officer does so at its 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 (DGA). Organizations whose proposals are declined will be advised as promptly as possible by the cognizant NSF Program Division administering the program. Verbatim copies of reviews, not including the identity of the reviewer, will be provided to the Principal Investigator.

B. Grant Award Conditions

An NSF grant consists of: (1) the award letter, which includes any special provisions applicable to the grant 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 grant conditions, such as Grant General Conditions (NSF GC-1)* or Federal Demonstration Partnership Phase III (FDP) Terms and Conditions* and (5) any NSF brochure, program guide, announcement or other NSF issuance that may be incorporated by reference in the award letter. Cooperative agreement awards also are administered in accordance with NSF Cooperative Agreement Terms and Conditions (CA-1)*. Electronic mail notification is the preferred way to transmit NSF grants to organizations that have electronic mail capabilities and have requested such notification from the Division of Grants and Agreements.

*These documents may be accessed electronically on NSF's Web site at: <http://www.nsf.gov/>. Paper copies may be obtained from the NSF Publications Clearinghouse, telephone (301) 947-2722 or by e-mail from pubs@nsf.gov.

More comprehensive information on NSF Award Conditions is contained in the NSF *Grant Policy Manual* (GPM) Chapter II, (NSF 95-26) available electronically on the NSF Web site. The GPM also is available in paper copy by subscription from the Superintendent of Documents, Government Printing Office (GPO), Washington, DC 20402. The GPM may be ordered through the GPO Web site at: <http://www.gpo.gov>. The telephone number at GPO for subscription information is (202) 512-1800.

C. Reporting Requirements

For all multi-year grants (including both standard and continuing grants), the PI must submit an annual project report to the cognizant Program Officer at least 90 days before the end of the current budget period.

Within 90 days after expiration of a grant, the PI also is required to submit a final project report. Approximately 30 days before expiration, NSF will send a notice to remind the PI of the requirement to file the final project report. Failure to provide final technical reports delays NSF review and processing of pending proposals for that PI. PIs should examine the formats of the required reports in advance to assure availability of required data.

NSF has implemented an electronic project reporting system, available through FastLane. This system permits electronic submission and updating of project reports, including information on: project participants (individual and organizational); activities and findings; publications; and other specific products and contributions. PIs will not be required to re-enter information previously provided, either with a proposal or in earlier updates using the electronic system.

Additional Reporting Considerations for STCs

Centers selected will be required to submit annual reports on progress and plans, which will be used as a basis for performance review and determining the level of continued funding. To support this review and the management of a Center, STCs will be required to develop a set of management and performance indicators for submission annually to NSF via an NSF evaluation technical assistance contractor. These indicators are both quantitative and descriptive and may include, for example, the characteristics of center personnel and students; sources of financial support and in-kind support; expenditures by operational component; characteristics of industrial and/or other sector participation; research activities; education activities; knowledge transfer activities; patents, licenses; publications; degrees granted to students involved in Center activities; descriptions of significant advances and other outcomes of the STC effort. Part of this reporting will take the form of a database which will be owned by the institution and eventually made available to an evaluation contractor. This database will capture specific information to demonstrate progress towards achieving the goals of the program. Such reporting requirements will be included in the cooperative agreement which is binding between the academic institution and the NSF.

VIII. CONTACTS FOR ADDITIONAL INFORMATION

General inquiries about the NSF Science and Technology Centers (STC): Integrative Partnerships Program should be addressed to:

Office of Integrative Activities
Science and Technology Centers (STC): Integrative Partnerships Program
National Science Foundation
Room 1270
4201 Wilson Boulevard
Arlington, VA 22230
(703) 306-1040
E-Mail: stc@nsf.gov (Internet)

IX. OTHER PROGRAMS OF INTEREST

The NSF *Guide to Programs* is a compilation of funding for research and education in science, mathematics, and engineering. General descriptions of NSF programs, research areas, and eligibility information for proposal submission are provided in each chapter. Many NSF programs offer announcements concerning specific proposal requirements. To obtain additional information about these requirements, contact the appropriate NSF program offices listed in Appendix A of the GPG. Any changes in NSF's fiscal year programs occurring after press time for the *Guide to Programs* will be announced in the NSF Bulletin, available monthly (except July and August), and in

individual program announcements. The Bulletin is available electronically via the NSF Web Site at <http://www.nsf.gov>. The direct URL for recent issues of the Bulletin is <http://www.nsf.gov/od/lpa/news/publicat/bulletin/bulletin.htm> Subscribers can also sign up for NSF's Custom News Service to find out what funding opportunities are available.

ABOUT THE NATIONAL SCIENCE FOUNDATION

The National Science Foundation (NSF) funds research and education in most fields of science and engineering. Grantees are wholly responsible for conducting their project activities and preparing the results for publication. Thus, the Foundation does not assume responsibility for such findings or their interpretation.

NSF welcomes proposals from all qualified scientists, engineers and educators. The Foundation strongly encourages women, minorities, and persons with disabilities to compete fully in its programs. In accordance with federal statutes, regulations, and NSF policies, no person on grounds of race, color, age, sex, national origin, or disability shall be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving financial assistance from NSF (unless otherwise specified in the eligibility requirements for a particular program).

Facilitation Awards for Scientists and Engineers with Disabilities (FASSED) provide funding for special assistance or equipment to enable persons with disabilities (investigators and other staff, including student research assistants) to work on NSF-supported projects. See the program announcement or contact the program coordinator at (703) 306-1636.

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 regarding NSF programs, employment, or general information. TDD may be accessed at (703) 306-0090 or through FIRS on 1-800-877-8339.

The National Science Foundation is committed to making all of the information we publish easy to understand. If you have a suggestion about how to improve the clarity of this document or other NSF-published materials, please contact us at plainlanguage@nsf.gov.

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; 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 review process; to applicant 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 needing information as part of the review process or in order to coordinate programs; 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," 63 Federal Register 267 (January 5, 1998), and NSF-51, "Reviewer/Proposal File and Associated Records," 63 Federal Register 268 (January 5, 1998). Submission of the information is voluntary. Failure to provide full and complete information, however, may reduce the possibility of receiving an award.

Pursuant to 5 CFR 1320.5(b), an agency may not conduct or sponsor, and a person is not required to respond to an information collection unless it displays a valid 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 this burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to: Suzanne Plimpton, Reports Clearance Officer, Information Dissemination Branch, Division of Administrative Services, National Science Foundation, Arlington, VA 22230, or to Office of Information and Regulatory Affairs of OMB, Attention: Desk Officer for National Science Foundation (3145-0058), 725 – 17th Street, N.W. Room 10235, Washington, D.C. 20503.

Catalogue of Federal Domestic Assistance (CFDA) Numbers:

- 47.041 Engineering Grants
- 47.049 Mathematical and Physical Sciences
- 47.050 Geosciences
- 47.070 Computer and Information Science and Engineering
- 47.074 Biological Sciences
- 47.075 Social, Behavioral, and Economic Sciences
- 47.076 Education and Human Resources
- 47.078 Polar Programs

OMB# 3145-0058