

SUMMARY OF PROGRAM REQUIREMENTS

GENERAL INFORMATION

Program Name: Centers for Teaching and Learning (CTL)

Short Description/Synopsis of Program:

This solicitation is the pilot for a wide-ranging, research-based program that will address critical issues in the K-12 instructional workforce through the creation of Centers for Teaching and Learning. Each center will involve multiple partners in implementing two major foci: (1) teacher professional development, and (2) development of infrastructure capacity. The teacher professional development focus will address the need to provide continuing and sustained professional development for future and current science, mathematics, and technology (SMT) teachers, including the induction period and internships. The infrastructure focus will address the need to increase the capacity of colleges and universities to educate future generations of SMT teachers and professionals in content, instructional practices, assessment, research, evaluation, curriculum development, and/or informal education. The pilot program will inform development of the broader effort through the creative approaches of the field in designing prototype centers that address both foci in effective and efficient ways.

Cognizant Program Officer(s): Dr. Susan P. Snyder, Room 885, Division of Elementary, Secondary, and Informal Education, telephone 703. 306.1620, e-mail: ssnyder@nsf.gov.

Applicable Catalog of Federal Domestic Assistance (CFDA) No.: 47.076

ELIGIBILITY

- ◆ Limitation on the categories of organizations that are eligible to submit proposals: **This solicitation for prototype Centers for Teaching and Learning requires the collaboration of different types of institutions and agencies involved in K-12 science, mathematics, and technology (SMT) education. At least one partner must be a K-12 school district, and one partner must have authorization to grant doctoral degrees. Other partners may include two- and four-year colleges and universities, state and local education agencies, professional societies, research laboratories, private foundations, informal science education centers, and other public and private organizations (whether for profit or nonprofit). Any of these partners may serve as the administrative home for a center.**
- ◆ PI eligibility limitations: **None**

AWARD INFORMATION

- ◆ Type of award anticipated: **Continuing Grant**
- ◆ Number of awards anticipated in FY 2000: **2-3 awards**

- ◆ Amount of funds available: **Approximately \$6 million will be allocated for the first year of the effort in FY 2000, pending availability of funding.**
- ◆ Anticipated date of award: **June 2000**

PROPOSAL PREPARATION & SUBMISSION INSTRUCTIONS

◆ **Proposal Preparation Instructions**

- Letter of Intent required: **The two-page letter of intent should briefly describe the proposed center, including its primary staff, major partners, specific focus, and proposed activities.**
- Proposal preparation instructions: **Standard NSF Grant Proposal Guide instructions except as modified by this solicitation.**
- Supplemental proposal preparation instructions: **Proposals should include a letter of support from each partnering organization and a detailed description of each partner's current activities and faculty expertise related to improving the teaching and assessment of K-12 mathematics, science, and technology education and to enhancing the infrastructure that supports and improves K-12 SMT education. This information should be included in the appendices to the proposal.**

◆ **Budgetary Information**

- Cost-sharing/matching requirements: **Substantial cost sharing is expected and should be detailed in budget. Ten percent of the requested total amount of NSF funds is required as cost sharing. Cost sharing per year should be shown on NSF Budget Form 1030, Line M.**
- Indirect cost (F&A) limitations: **None**
- Other budgetary limitations: **Awards will be made as continuing grants for up to five years.**

◆ **FastLane Requirements**

- FastLane proposal preparation requirements: **FastLane submission will be required.**
- FastLane point of contact: **Jeff Harris; 703-306-1620; jsharris@nsf.gov**
- Letter of Intent Deadline: **Letters should be sent by e-mail to esictl@nsf.gov by January 20, 2000.**
- Full Proposal Deadline: **5:00 PM local time, March 1, 2000**

PROPOSAL REVIEW INFORMATION

- ◆ Merit Review Criteria: **National Science Board approved criteria plus the additional criteria described in the solicitation.**

AWARD ADMINISTRATION INFORMATION

- ◆ Grant General Conditions: **GC-1 or FDP III**
- ◆ Special award conditions anticipated: **Compliance with NSF third-party evaluation, as described under “Project Characteristics.”**
- ◆ Special reporting requirements anticipated: **Standard annual reports submitted via FastLane, with the possibility of requests for additional data. Such requests will be set as conditions to either the initial award or to continuing yearly funding.**

INTRODUCTION

A growing body of research articulates both the needs of, and possible solutions to, the current state of science, mathematics, and technology (SMT) education. The study, *What Matters Most: Teaching for America's Future* (National Commission on Teaching and America's Future, 1996), indicates that over 50,000 inadequately prepared teachers enter the teaching profession each year. Indeed, a recent report indicates that in grades 7-12, approximately 33% of mathematics teachers and 20% of science teachers do not have either a major or minor in their field; yet these underqualified teachers teach over 26% of mathematics students and over 16% of science students (Ingersoll, 1999).

Moreover, of those teachers who enter with adequate background, 30% to 50% will leave the profession within five years. Many of these teachers are responsible for the teaching of science and mathematics. Recent studies also have identified the positive relationship between the use of standards-based teaching practices and improved student learning (Cohen & Hill, 1998; Kahle, Meece, & Scantlebury, 1999; Klein, Hamilton, McCaffrey, Stecher, Robyn, & Burroughs, 1999). Further, the efficacy of combining professional development with standards-based curriculum is becoming evident (Weiss, Montgomery, Ridgway, & Bond, 1998). There is a need to couple this emerging knowledge base with new and effective ways of preparing future teachers and of providing teacher professional development that will produce, as well as retain, effective SMT teachers at the elementary and secondary levels.

An evolving body of research on models of effective professional development (e.g., Loucks-Horsley, Hewson, Love, & Stiles, 1998) provides the basis for the first center program component, professional development activities for teachers. The type of preservice and inservice teacher professional development desired will enhance the capacity of the K-12 instructional workforce, add to the knowledge base about effective professional development, and lead to documented improvement in student achievement. Exploring technology both to enhance instruction for K-12 students and as a means of providing professional development of, and support for, teachers is a high priority for NSF (Panel on Educational Technology, President's Committee of Advisors on Science and Technology, 1997). The research on successful teacher professional development is applicable to programs for SMT teacher preparation, as well as induction periods for new teachers; programs addressing those areas will reflect this research and include high quality undergraduate courses in science and mathematics that are taught through research-validated models (e.g., extended inquiry, problem-solving). Likewise, centers might address the issue of underprepared and out-of-field teachers; meet the needs of teachers with varied roles within the instructional workforce (e.g. mentor teachers, department chairs); or include opportunities for collaboration with informal science education.

The second critical CTL component is to provide graduate, post-graduate, and intern programs for the diverse array of professionals who educate and support the instructional workforce. This set, described as "*specialists*" in this solicitation, forms the infrastructure of SMT education. Such specialists include university scientists and mathematicians who prepare future teachers either in discipline or education courses, local and state supervisors and curriculum coordinators, informal science educators, education researchers, curriculum developers, and assessment and evaluation professionals. Regardless of their future roles, specialists need to master their

discipline, be conversant with its historical, philosophical, and societal contexts, and be knowledgeable about current reforms, assessment issues, and effective uses of technology. They need to understand the research base for both student learning and professional development, and they need to know how to help teachers internalize critical elements of this research into their planning of instruction. These specialists need to be expert at translating research findings into educational practice. Moreover, they should be able to relate their content knowledge to curricular and instructional issues in K-12 SMT education. They need to understand national and state standards and know how to connect the goals of mathematics and science education to classroom practice. Therefore, Centers for Teaching and Learning must educate specialists in the context of education of the current K-12 instructional workforce. It is anticipated that the partnerships required for each prototype center will provide learning laboratories for these tasks.

KEY PROGRAM GOALS

This solicitation is a call for the creation of prototype Centers for Teaching and Learning where professionals can be educated in an environment of study and practice. For SMT teachers, a center should provide opportunities to enhance content knowledge, develop teaching strategies that lead to improved student learning, implement high quality instructional materials, and develop skills in using various strategies for assessing student learning. For SMT specialists, the study provided by the center should cover the knowledge base in their area of specialty and involve experiences with SMT teachers, school district personnel, researchers, curriculum developers, and informal SMT educators.

This solicitation for prototype centers has two overarching purposes: to explore a variety of partnerships and models that can respond to the specific program goals listed below, and to investigate alternative strategies for reaching those goals.

In the long term, the overarching goals of the CTL program are as follows:

- (1) to increase significantly the numbers of new and existing educators in both formal and informal settings who are prepared and supported to deliver standards-based science, mathematics, and technology instruction, and
- (2) to rebuild and diversify the national infrastructure for SMT education by educating specialists in SMT, including, but not limited to, those specializing in SMT teacher education, classroom and large-scale assessment, research, evaluation, curriculum development, and informal education.

ELIGIBILITY

Proposals must involve partnerships of organizations with a scientific and/or educational mission. Among these are two- and four-year colleges and universities, state and local education agencies, professional societies, research laboratories, informal science centers, instructional materials developers, private foundations, and/or other public and private organizations whether for profit or nonprofit. Each center must have one or more school district partners as well as a partner that is authorized to award doctoral degrees. Where possible, centers should have

collaborative relationships with NSF systemic initiatives (i.e., state, urban, rural, local). Cost sharing is required for all proposals submitted in response to this solicitation at a minimum level of 10% of the requested total amount of NSF funds.

AWARD INFORMATION

Under this announcement, proposals may be submitted for funding up to five years. Support for graduate students may vary depending upon the academic background and/or teaching expertise of applicants. It is envisioned that some graduate students will be paid academic year stipends (in accordance with local institutional rates) plus tuition and fee waivers, while experienced professionals from teaching or other fields may be remunerated in proportion to their current salaries (up to \$30,000/ten months) plus tuition and fee waivers. Professional development activities for teachers may offer stipends of up to \$75 per day, or provide tuition and fee waivers for graduate credits, or support for substitutes to permit the release of teachers during the school day. Although awards may request funds for the development of new graduate courses in SMT education, the cost of delivering such courses cannot be covered.

PROJECT CHARACTERISTICS

Focus. In order to meet the overarching purposes of this solicitation, prototype centers must address the full range of teacher education and must help increase the capacity of the infrastructure by preparing SMT education specialists through doctoral programs or providing postdoctoral opportunities for individuals drawn either from a discipline or from education. *The focus of each center should be on connecting professional development for teachers with the education of specialists.* Professional development for teachers is likely to be an ongoing activity of the collaborating institutions, and the specialists should have opportunities to develop their expertise through interaction with the teachers participating in those activities.

Coverage. Centers may address mathematics and/or science and also may include a focus on technology education. Each proposal must contain a rationale for the grade band (e.g., K-12, K-6) chosen for emphasis. Centers could include long-term and short-term professional development for substantial numbers of teachers, administrators, and/or informal science educators as well as programs of study for doctoral and/or post-doctoral students (including those with discipline-based degrees).

Proposals should be developed cooperatively among several institutions of higher education and should include some combination of state or local education agencies, community colleges, museums, etc. Such cooperation should leverage the expertise of different institutions. Potential specialists (e.g., doctoral students, postdoctoral interns) might complete different parts of their education at different institutions and/or centers in order to develop special expertise. For example, one type of center might focus on developing high quality K-12 science curricular materials and bring together representatives from school districts, informal science centers, curriculum developers, undergraduate, graduate, and postdoctoral students, and science faculty to design, develop, and field-test new materials. Another type of center might focus on research, evaluation, and assessment through emphasis on the graduate education of educational psychologists and psychometricians who focus on the learning and assessment of mathematics

and/or science and who are needed to evaluate large-scale reform projects such as the SMT systemic initiatives.

Each center proposal must present a clear plan for recruiting highly qualified candidates into teacher education programs, in-service activities, and specialist programs. Proposals may choose to address the retraining of those who already hold a doctorate (or the equivalent) in science, mathematics, and engineering and who have particular interest in SMT education. Recruitment plans should include strategies for expanding the diversity of the SMT education workforce; these strategies should build upon existing effective efforts, which must be documented.

Teacher Professional Development. Centers may address a wide range of issues in teacher professional development: teacher preparation, induction and internships, teaching out-of-field, licensure programs, alternative certification, master's degree programs, distance education, or some combination of these.

Proposals should describe ways that teachers will be assisted in learning content and pedagogy. Activities should go beyond standard courses or generic in-service activities, be based on national and state standards, and include effective pedagogy for adult learning. Innovative ways of providing ongoing support for participants are encouraged in the prototype centers and may involve collaborations with local or state educational agencies.

Specialist Development. Science, mathematics, and technology specialists who provide professional development for the SMT instructional workforce include university teacher educators, curriculum developers, district-level or state-level supervisors and coordinators, lead teachers, informal science educators, assessment specialists, and school administrators (e.g., principals). Programs of study for these specialists should include clearly delineated doctoral programs (Ph.D. or Ed.D.). Proposals must have clear statements of focus, indicating what background and experiences will be required for entrance and discussing how the program of study might be adapted for applicants with varying kinds of backgrounds. New ways to involve each center's collaborative partners, as well as collaborations across centers as the program proceeds are encouraged.

Innovation in graduate programs and postdoctoral education is encouraged as centers seek to impact both the quantity and quality of the SMT education infrastructure. Two types of activities are envisioned for doctoral and postdoctoral students. First, centers will provide rich opportunities to conduct research and assessment studies in SMT education. Second, for doctoral and postdoctoral specialists coming from scientific and mathematics disciplines, there will be in-depth experiences with K-12 SMT teaching, administration, assessment, and curricula. Prototype centers should provide specialists with opportunities to apply their developing knowledge in realistic settings and provide extensive mentoring to help them develop a broad network of contacts that can provide support after the program of study is complete.

Institutionalization. Proposals should include plans for ensuring continuation of critical aspects of the centers after NSF support ends. In particular, the support strategies for professional development of teachers need to be institutionalized and critical aspects of the doctoral programs that are developed should be sustainable by the local institutions.

Evaluation. External evaluation of both the teacher professional development and specialist development components of the project is required. Internal evaluation is encouraged to provide feedback to revise and refocus a center as it develops.

For the teacher professional development, there should be documentation of changes in prospective and practicing teachers' knowledge, changes in the quality of instruction delivered to K-12 students, and the impact that the teacher professional development has had on teaching and learning in the collaborating districts. For the specialist development, there should be documentation of the impact on specialists' knowledge, on the quality of teacher professional development delivered, and on the effectiveness of specialists' ability to work in K-12 SMT education in formal or informal settings. It is anticipated that the prototype centers will involve faculty, as well as doctoral and postdoctoral students in formative evaluation of all center activities.

Each proposed center must commit to cooperating with an external program evaluation, including a longitudinal study of impact that will be funded independently by NSF. As part of the proposed external evaluation, centers will be responsible for providing requested data to the external evaluator.

References

Cohen D. K., & Hill, H. C. (1998). *State policy and classroom performance: Mathematics reform in California* (CPRE Policy Brief). Philadelphia, PA: Consortium for Policy Research in Education.

Darling-Hammond, L. (1994, November). *The current status of teaching and teacher development*. National Commission of Teaching and America's Future.

Ingersoll, R. M. (1999, March). The problem of underqualified teachers in American secondary schools. *Educational Researcher*, 28(2), 26-37.

Kahle, J. B., Meece, J., & Scantlebury, K. (1999). *Urban African American middle school science students: Does standards-based teaching make a difference?* Unpublished manuscript, Miami University, Oxford, OH.

Klein, S., Hamilton, L., McCaffrey, D., Stecher, B., Robyn, A., & Burroughs, D. (1999, May). *Teaching practices and student achievement: Report of first-year findings from the "Mosaic" study of systemic initiatives in mathematics and science*. Los Angeles, CA: Rand Corporation.

Loucks-Horsley, S., Hewson, P. W., Love, N., & Stiles, K. E. (1998). *Designing professional development for teachers of science and mathematics*. Thousand Oaks, CA: Corwin Press.

Panel on Educational Technology, President's Committee of Advisors on Science and Technology. (1997, March). *Report to the President on the use of technology to strengthen K-12 education in the United States* [On-line]. Available: <http://www.whitehouse.gov/WH/EOP/OSTP/NSTC/PCAST/k-12ed.html>.

Weiss, I. R., Montgomery, D. L., Ridgway, C. J., & Bond, S. L. (1998, December). *Local systemic change through teacher enhancement: Year three cross-site report*. Chapel Hill, NC: Horizon Research, Inc.

PROPOSAL PREPARATION & SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions.

Letters of Intent. Submitting a letter of intent is required before submitting a full proposal and is intended to enhance the efficiency of the review process. Due **January 20, 2000**, the two-page letter of intent should address the following: (1) grade levels and disciplines to be covered for both the teachers' and specialists' professional development; (2) essential features of the project design or work plan; and (3) primary project staff, partner institutions and agencies, and primary staff for those partners. Submission of a letter of intent does not obligate an institution nor a prospective principal investigator to submit a proposal.

Full Proposals. Proposals submitted in response to this program announcement should 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 the program announcement number (NSF 00-13) 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.

B. Budgetary Information.

Cost-sharing Requirements. Cost sharing of 10% 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 on the proposal budget (NSF Form 1030.)

Some of the activities of the Centers (e.g., professional development for teachers, support of graduate students) are likely to be on-going activities of the partnering institutions. In addition, school district resources should be available to support some of the teacher professional development activities. Cost sharing should demonstrate commitment to plans that can and will be institutionalized after NSF funding ends.

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 that 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 inkind (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.

C. Proposal Due Dates.

Letters of Intent. All letters of intent must be submitted via e-mail to esictl@nsf.gov by January 20, 2000.

Full Proposals. All proposals must be submitted electronically through FastLane and **MUST** be submitted by 5:00 PM, local time, March 1, 2000. Copies of the signed proposal cover sheet must be submitted in accordance with the instructions identified below.

Submission of Signed Cover Sheets. The signed proposal Cover Sheet (NSF Form 1207) must be postmarked (or provide a legible proof of mailing date assigned by the carrier) within five working days following the electronic submission of the proposal and forwarded to the following address:

National Science Foundation
DIS-FastLane Cover Sheet
4201 Wilson Blvd.
Arlington, VA 22230

A proposal may not be processed until the complete proposal (including signed Cover Sheet) has been received by NSF.

D. FastLane Requirements.

The NSF FastLane system is available for electronic preparation and submission of a proposal through the Web at the FastLane Web site at <http://www.fastlane.nsf.gov>. The Sponsored Research Office (SRO), or equivalent, must provide a FastLane Personal Identification Number (PIN) to each Principal Investigator (PI) to gain access to the FastLane "Proposal Preparation" application. PIs that have not submitted a proposal to NSF in the past must contact their SRO to be added to the NSF PI database. This should be done as soon as the decision to prepare a proposal is made.

In order to use NSF FastLane to prepare and submit a proposal, the following are required:

Browser (must support multiple buttons and file upload)

- Netscape 3.0 or greater
- Microsoft Internet Explorer 4.01 or greater

PDF Reader (needed to view/print forms)

- Adobe Reader 3.0 or greater

PDF Generator (needed to create project description)

- Adobe Acrobat 3.01 or greater
- Aladdin Ghostscript 5.10 or greater

A list of registered institutions and the FastLane registration form are located on the FastLane Web page.

PROPOSAL REVIEW INFORMATION

A. Merit Review Criteria.

Reviews of proposals submitted to NSF are solicited from peers with expertise in the substantive area of the proposed research or 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 proposer. Special efforts are made to recruit reviewers from nonacademic institutions, minority serving institutions or adjacent disciplines to that principally addressed in the proposal.

Proposals will be reviewed against the following 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 proposal. Each reviewer will be asked to address only those that are relevant to the 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 should address the following elements in their 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.

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 -- are 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.

As elaboration to the above considerations, the following concerns will be used also in evaluating proposals.

- **Institutional Capacity.** What involvement has the proposing institution and its partners had in significant, high quality SMT education programs? What is the expertise of the university faculty and other staff who will have significant involvement with the program? What are the plans for institutionalizing the prototype center?
- **Program Design.** How does the design of the programs proposed for teachers and specialists reflect current understanding of high-quality professional development? Does the program design allow for differences in background knowledge and experience that participants will bring to the programs?
- **Impact.** What is the likelihood that the programs will produce leaders who can impact SMT education? Will the recruitment and program activities enhance the diversity of the SMT workforce? What is the potential for the project to significantly strengthen the Nation's formal and informal SMT instructional workforce, both at the teacher and the specialist levels?
- **Plan.** What is the likelihood that the proposed project will achieve its results? How will the approach to be used improve the disciplinary content and instructional methods of teachers and the ability of specialists to enhance the SMT education enterprise?
- **Cooperative Relationships.** Are the working relationships among collaborating parties strong? How will collaborations be strengthened as the project progresses?
- **Evaluation.** Are the goals of the project clearly stated and measurable? Will the evaluation plan provide data on the impact of the project on participants' knowledge of content and pedagogy, the quality of instruction for students or teachers, the effectiveness of specialists in

improving mathematics and science education, and the enhancement of K-12 student learning?

B. Merit Review Process.

Most proposals submitted to NSF are reviewed by mail review, panel review, or some combination of mail and panel review. All proposals are carefully reviewed by at least three other persons outside NSF who are experts in the particular field represented by the proposal. Reviewers will be asked to formulate a recommendation to either support or decline each proposal. A Program Officer assigned to manage the proposal's review will consider the advice of reviewers and will formulate a recommendation. It is likely that site visits will be conducted prior to recommendation of awards. NSF will be able to tell applicants whether their proposals have been declined or recommended for funding within six months for 95 percent of proposals in this category. The time interval begins on the proposal deadline or target date or from the date of receipt, if deadlines or target dates are not used by the program. The interval ends when the Division Director accepts the Program Officer's recommendation.

In all cases, after programmatic approval has been obtained, the proposals recommended for funding will be forwarded to the Division of Grants and Agreements for review of business, financial, and policy implications and the processing and issuance of a grant or other agreement. Proposers are cautioned that only a Grants 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 grant or cooperative agreement signed by the NSF Grants Officer does so at its own risk.

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 automatically 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 disapproval of proposed expenditures); (3) the proposal referenced in the award letter; (4) the applicable award 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. 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, 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 multiyear 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 a new electronic project reporting system, available through FastLane, which 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. Reports will continue to be required annually and after the expiration of the grant, but PIs will not need to reenter information previously provided, either with the proposal or in earlier updates using the electronic system.

Effective October 1, 1999, PIs are required to submit annual and final project reports via FastLane. If there are questions regarding this requirement, contact the Division's FastLane representative at 703-306-1628.

D. New Awardee Information.

If the submitting organization has never received an NSF award, it is recommended that the organization's appropriate administrative officials become familiar with the policies and procedures in the NSF *Grant Policy Manual* which are applicable to most NSF awards. The "Prospective New Awardee Guide" (NSF 99-78) includes information on: Administration and Management Information; Accounting System Requirements and Auditing Information; and Payments to Organizations with Awards. This information will assist an organization in preparing documents that NSF requires to conduct administrative and financial reviews of an organization. The Guide also serves as a means of highlighting the accountability requirements

associated with Federal awards. This document is available electronically on NSF's Web site at: <<http://www.nsf.gov/cgi-bin/getpub?nsf9978>>.

CONTACTS FOR ADDITIONAL INFORMATION

General inquiries should be made to the **Centers for Teaching and Learning Program**, Dr. Susan Snyder, Room 885, Division of Elementary, Secondary, and Informal Education, National Science Foundation, Arlington, VA 22230, telephone 703.306.1620, e-mail: ssnyder@nsf.gov. For questions related to use of FastLane, contact Jeff Harris, telephone 703.306.1620, e-mail: jsharris@nsf.gov.

OTHER PROGRAMS OF INTEREST

The NSF *Guide to Programs* is a compilation of funding opportunities 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. Beginning in fiscal year 1999, the NSF *Guide to Programs* only will be available electronically, at <<http://www.nsf.gov/cgi-bin/getpub?gp>>. 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 E-Bulletin, available electronically on the NSF Web site at: <<http://www.nsf.gov/home/ebulletin/>>. The direct URL for recent issues of the Bulletin is <<http://www.nsf.gov/cgi-bin/verity/srchods>>. 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.

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