

MAJOR RESEARCH INSTRUMENTATION (MRI) PROGRAM

*Instrument Development and
Acquisition Solicitation*

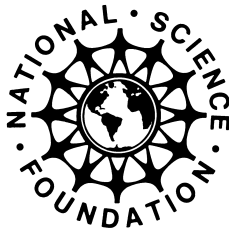
OFFICE OF INTEGRATIVE ACTIVITIES

NSF 99-168
(Replaces NSF 99-34)

DEADLINE: *January 18, 2000*



NATIONAL SCIENCE FOUNDATION



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SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Name: Major Research Instrumentation (MRI) Program

Short Description of Program:

The Major Research Instrumentation Program (MRI) is designed to increase access to scientific and engineering equipment for research and research training in our Nation's academic institutions. This program seeks to improve the quality and expand the scope of research and research training in science and engineering, and to foster the integration of research and education by providing instrumentation for research-intensive learning environments.

The MRI Program assists in the acquisition or development of major research instrumentation by U.S. institutions that is, in general, too costly for support through other NSF programs. The maintenance and technical support associated with these instruments are also supported. Proposals may be for a single instrument, a large system of instruments, or multiple instruments that share a common or specific research focus.

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

Applicable Catalog of Federal Domestic Assistance (CFDA) No.: See list on last page of this solicitation.

Eligibility

Eligible Institutions: Proposals may be submitted by U.S. institutions of higher education, independent nonprofit research institutions, research museums, and legally documented incorporated consortia thereof.

PI Eligibility Limitations: None.

Proposal Limit: An institution may submit up to three proposals: two proposals for instrument acquisition or development, plus a third solely for instrument development.

Award Information

Type of award: Standard grant.

Proposal funding rate for FY 1999 MRI competition: Approximately 34%.

Amount of funds available: Approximately \$50 million will be available for the MRI program in FY 2000, distributed across all NSF Directorates.

Anticipated date of award: July-August, 2000

Proposal Preparation and Submission Instructions

FastLane Requirements:

- FastLane requirement: Full Fastlane proposal submission required.
- FastLane point of contact: (703)306-1040; mriflane@nsf.gov – or – (703)306-1142; fastlane@nsf.gov

Proposal Preparation Instructions:

- Letter of Intent requirement: None.
- Preproposal requirements: None.
- Proposal preparation instructions: See *Proposal Preparation Instructions* section of this solicitation.

Cost Sharing Requirements:

- Cost sharing at a level of 30% of total eligible project costs is required.
- A letter of commitment to cost sharing from the appropriate institutional officer must be submitted electronically with the proposal.

Proposal Due Dates:

- Full proposal deadline: **FastLane submission: 5:00 p.m. local time, January 18, 2000.** (Note: The signed cover sheet must be scanned into the Supplementary Documents section of your Fastlane proposal and submitted as part of the proposal. **Hard copies should not be mailed to NSF.**)

Proposal Review Information

- Merit Review Criteria: Standard National Science Board approved criteria.
- Additional considerations: See Section VI, Proposal Review Information.

Award Administration Information

- Grant Award Conditions: NSF GC-1 or FDP III.
- Special grant conditions: Cost sharing obligation will be stated.
- Special reporting requirements: None anticipated.

I. INTRODUCTION

The Major Research Instrumentation Program (MRI) is designed to increase access to scientific and engineering equipment for research and research training in our Nation's academic institutions. This program seeks to improve the quality and expand the scope of research and research training in science and engineering, and to foster the integration of research and education by providing instrumentation for research-intensive learning environments.

II. DESCRIPTION OF MRI PROGRAM

MRI Program Goals

The goals of the MRI Program are to:

- Support the acquisition, through purchase, upgrade, or development, of major state-of-the-art instrumentation for research, research training, and integrated research/education activities at U.S. institutions;
- Improve access to and increase use of modern research and research training instrumentation by scientists, engineers, and graduate and undergraduate students;
- Enable academic departments or cross-departmental units to create well-equipped learning environments that integrate research with education;
- Foster the development of the next generation of instrumentation for research and research training; and
- Promote partnerships between academic researchers and private sector instrument developers.

MRI Program Scope

The MRI Program assists in the acquisition or development of major research instrumentation by U.S. institutions that is, in general, too costly for support through other NSF programs. The maintenance and technical support associated with these instruments are also supported. Proposals may be for a single instrument, a large system of instruments, or multiple instruments that share a common or specific research focus. Computer systems, clusters of advanced workstations, networks, and other information infrastructure components necessary for research are encouraged. Proposals for computer networks as general purpose equipment will not be reviewed. **A list of assorted instruments or general lab equipment that do not share a common or specific research or research training focus will not be reviewed. Instrumentation requested exclusively for standard Science and Engineering (S&E) courses will also not be reviewed. This program will not support renovation or modernization of research facilities or fixed equipment (see definitions). Note:** The MRI Program will not review a duplicate proposal submitted to another NSF instrumentation program.

Instrument Development

NSF is stimulating the development of the next generation of research instrumentation by encouraging institutions to submit proposals that target instrument development. Individual investigators and teams of researchers are encouraged to apply for instrument development support.

The academic research enterprise relies on and produces new generations of sophisticated research instrumentation and software simulations thereof. The right design, development, and manufacturing processes can yield new instruments that are more widely used, open up new areas of research and research training, and have potential as commercial products. This competition seeks to expand the research community's capabilities by supporting the development of new instruments (or their software simulations) with enhanced performance. "Performance" includes: accuracy; reliability; resolving power; throughput speed; sample capacity; flexibility of operation; breadth of application; user-friendliness; and cost of acquisition, operation, and maintenance.

NSF particularly encourages collaborations between disciplinary scientists who are knowledgeable in unique instrumentation areas and private sector experts in the area of instrument manufacture. Working together within a framework of concurrent engineering, such partnerships have the potential to create new products with wide scientific and commercial impact. (NSF does not consider the acquisition of individual pieces of equipment to be combined in a new system to be instrument development.) These academic research/private sector partnerships must be performed in the United States. The "United States" is defined as the 50 states, territories and possessions of the United States, the Commonwealth of Puerto Rico, the Commonwealth of the Northern Mariana Islands, the Trust Territory of the Pacific Islands, and the District of Columbia.

III. ELIGIBILITY

Eligible Institutions

Proposals may be submitted by U.S. institutions of higher education, independent nonprofit research institutions, research museums, and legally documented incorporated consortia thereof. An institution may submit up to three proposals: two proposals for instrument acquisition or development, plus a third solely for instrument development. In other words, at least one of three proposals submitted from an institution must be for instrument development. However, all three proposals may be for instrument development. In addition, an institution may be included as a member of a legally established consortium submitting a separate proposal, clearly labeled as such in the proposal's title. A consortium may also submit a proposal, through a U.S. university, for instrumentation to be used at a Federally Funded Research and Development Center (FFRDC). Small businesses are eligible for instrument development support as private sector partners with submitting universities.

Eligible Fields of Science and Engineering

Proposals will be considered for instrumentation used for any NSF-supported field of science, mathematics, and engineering. The research activities using this instrumentation need not be supported by NSF or the Federal government. The Program will not provide support for instrumentation to be used in the conduct of disease-oriented research, including the etiology, diagnosis or treatment of physical or mental disease, abnormality or malfunction in human beings or animals, or the design and testing of drugs for treatment of such conditions.

Eligible Project Costs

Eligible project costs are those total project costs (comprising the NSF award plus the institution's cost sharing) that are properly and reasonably allocable to the research instrumentation based on the percentage of time that it is used for research and research training. For instrument acquisition proposals, eligible project costs include: costs of instrument purchase, installation, commissioning, and calibration. The direct and indirect costs of operation, maintenance, and other appropriate technical support during the award period are also eligible. For instrument development proposals, eligible project costs include all of the items listed above, as well as the direct and indirect costs associated with support for personnel engaged in the instrument development effort.

IV. AWARD INFORMATION

Proposals submitted in response to this program solicitation will be competing for about \$50 million in Fiscal Year 2000. The overall proposal funding rate for the FY 1999 MRI competition was approximately 34%.

Awards for instrumentation will range from \$100,000 to \$2 million. Lesser amounts will be considered in proposals from non-Ph.D. granting institutions, from the mathematical sciences community, or from the social, behavioral and economic science communities.

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

FastLane Requirements

Proposals must be submitted electronically using the NSF FastLane system for electronic proposal submission and review, available through the World Wide Web at the FastLane home page (<http://www.fastlane.nsf.gov>). Instructions for electronic submission can be found at <http://www.fastlane.nsf.gov/a1/newstan.htm>. The Sponsored Research Office (SRO) or equivalent must provide a FastLane Personal Identification Number (PIN) to each Principal Investigator to gain access to the FastLane "Proposal Preparation" application. PI's who have not submitted a proposal to NSF in the past must contact their SRO to be added to the NSF PI database. General information about NSF's policies and procedures on proposals, declinations, and awards is contained in the Grant Proposal Guide located on the NSF homepage (<http://www.nsf.gov>).

In order to use the FastLane "proposal preparation" application, your institution needs to be a registered FastLane institution. A list of registered institutions and the FastLane registration form are located on the FastLane Home Page.

For questions or problems concerning submitting an MRI proposal via FastLane, please contact a FastLane User Support person at mriflane@nsf.gov; phone (703) 306-1040 – or – fastlane@nsf.gov; (703)306-1142.. For non-FastLane questions related to the MRI competition, please contact the MRI program at mri@nsf.gov or at (703) 306-1040.

Proposal Preparation Instructions

Proposals submitted in response to this program solicitation should be prepared and submitted in accordance with the general guidelines contained in the *Grant Proposal Guide* (GPG), NSF 00-2, unless otherwise noted in this solicitation. 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 of this solicitation 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.

In addition to the GPG, MRI proposals must be prepared in accordance with all applicable FastLane guidelines and with the following instructions: (Note: Where these instructions and those in the Grant Proposal Guide do not agree, these instructions take precedence.)

1. *Cover Sheet* (Form 1207). On the cover sheet, where asked to identify an organizational unit, you should make two selections. **IMPORTANT: First, select the appropriate Division to consider your proposal. Then select "Major Research Instrumentation" as the program to consider your proposal.**

The project title should identify the scientific discipline(s) for which the instrumentation is requested, should convey the primary purpose of the proposal, e.g., "acquisition of ____" or "development of ____," and should specify if the proposal is being submitted by a consortium. The requested amount shown on the cover page should be the amount requested from NSF, not the total eligible project costs.

You should print the certification page (page 2 of the cover sheet), obtain the necessary signatures, and scan the signed certification page into the Supplementary Documents section of your FastLane proposal for electronic submission as part of your proposal. (Note: This requirement deviates from the Grant Proposal Guide, GPG I.F.1., regarding submission of signed proposal cover sheets.)

Form 1225, "*Information about Principal Investigators/Project Directors*," is automatically generated by FastLane.

2. *Project Summary* (Maximum length, 1 page). Describe the proposed major research instrumentation, the type of research/research training conducted, and the activity that would result if the project is funded by NSF.
3. *Paginated Table of Contents* (Form 1359 cannot be edited and is automatically completed by FastLane)
4. *Project Description* (Maximum length, 15 pages, including all figures and charts). Please note: When preparing the Project Description in FastLane, this section must include items

(a)-(e). If item (a), “Results from Prior NSF Support,” is not applicable, the project description should contain items (b)-(e).

- a) *Results from Prior NSF Support* (Maximum length, 5 pages). Include this section only if the PI(s) has received NSF support for instrumentation.
- b) *Research Activities* (Maximum length, 10 pages; 6 suggested for instrument development). Describe the research and research training activities and projects to be conducted with the desired instrumentation, and sources of support, if any. In narrative or tabular form, list by number and type (e.g., senior personnel, postdoctoral fellows, graduate students, undergraduate students) the personnel using the instrumentation for research and research training on a regular basis. Letters of support should be scanned into the Supplementary Documents section of your FastLane proposal and submitted electronically as part of your proposal.
- c) *Description of the Research Instrumentation and Needs* (Maximum length, 2 pages; 6 suggested for instrumentation development). Provide a technical description of the requested instrumentation, including manufacturer and model number. **Proposers are strongly encouraged to submit manufacturers’ quotes for instrument acquisition proposals.** Written quotes from manufacturers should be scanned into the Supplementary Documents section of your FastLane proposal and submitted electronically as part of the proposal. The description should be comprehensive enough to allow reviewers to evaluate the extent to which the equipment is essential and appropriate. **A listing and/or description of related instrumentation currently available at or near the submitting institution should be provided, and the request should be justified in this context.** For development of new instrumentation, present the design concept, rationale, and development methods in sufficient detail to allow evaluation of its technical feasibility. Provide preliminary results from existing equipment, or appropriate calculations or models to show the performance (e.g., sensitivity, capacity, stability, resolution or signal-to-noise ratio) to be achieved by the new instrument. Justify the necessity and adequacy of the new instrumentation for the proposed research projects, with reference to existing instruments.
- d) *Impact of Infrastructure Projects* (Maximum length, 2 pages). Describe how the instrumentation will contribute to meeting the research and educational goals of the institution or consortium. Indicate how the instrumentation will attract researchers and students, particularly underrepresented groups and women pursuing advanced degrees in science and engineering, and improve the quality of their research training. (For example, the proposal could demonstrate that faculty at women’s colleges and minority-serving institutions will have access to the instrumentation.) For instrument development proposals, discuss the potential impact of this activity on the Nation’s academic research infrastructure. Describe how students will be involved and how their education will be enhanced through development efforts. If the development effort involves a private sector partner, submit a letter of agreement describing their role. This letter should be scanned into the Supplementary Documents section of your FastLane proposal and submitted electronically as part of the proposal.
- e) *Project and Management Plans* (Maximum length, 1 page). Outline procedures for allocating instrument time if appropriate. Describe user fees if any are planned. Provide plans for the maintenance, operation, and technical support of the

instrumentation, and for attracting new users. Where appropriate describe management plans for instrument development oversight where third parties are involved.

5. *References Cited.*
6. *Biographical Sketches.* Your proposal must include the two-page biographical sketches of the PI, Co-PI(s), and senior personnel who are major users of the relevant research instrumentation, listing no more than five recent publications most relevant to the research and research training using the requested instrumentation. Also, identify the individual responsible for the instrumentation and provide his/her brief vita, including relevant experience. **DO NOT send copies of the publications.** Where the number of senior personnel is large, limit the number of biographical sketches.
7. *Budget and Funding.* Provide a single cumulative budget page (Form 1030) presenting **only those eligible project costs that NSF is being asked to fund. Cost sharing should be shown on Line M, Form 1030.** (In FastLane, enter your cumulative budget in Budget Year 1. FastLane will automatically fill out a cumulative budget for your proposal.) The budget justification, which must not exceed three pages, should itemize and explain all eligible project costs, assign each to either the NSF request or institutional cost sharing, and explain the basis for all cost estimates. Specify the sources and amounts of cost-sharing funds (e.g., state appropriations, department funds, private sources); the steps necessary to obtain cost-sharing funds; and a projection of when they will be available. **A letter to the Director, OIA, of commitment to cost sharing from the appropriate institutional officer must be scanned into the Supplementary Documents section of your FastLane proposal and submitted electronically as part of the proposal.** The letter of institutional cost-sharing commitment should state the amount and source of eligible cost sharing and should assure availability and commitment of these funds during the proposed award period. **Documentation indicating price quotes of largest items must also be scanned and submitted as part of the proposal.**
8. *Current and Pending Support* (Form 1239). Provide a form for the PI, Co-PI(s), and each major user of the instrumentation listed in 5b, above. If an individual has no current or pending support (other than this proposal), completion of the form is not required.
9. *Facilities, Equipment, and Other Resources.* This section is not required for Major Research Instrumentation proposals.
10. *Letters.* A Letter to the Director, OIA, of Institutional Cost-Sharing Commitment (**required**), Letters of Industrial Partnership (optional), Letters of Support (optional), and Manufacturers' quotes should be scanned into the Supplementary Documents section of your FastLane proposal and submitted electronically as part of the proposal. **Hardcopies should not be mailed to NSF.**

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

Cost Sharing Requirements

Cost sharing at a level of **30% of total eligible project costs** is required. The proposed cost sharing must be shown on line M on the proposal budget (NSF Form 1030.) The minimum

award from NSF will be \$100,000 (except for awards associated with non-Ph.D. granting institutions, mathematical sciences, and the social, behavioral and economic sciences), and the maximum award will be \$2 million. The minimum total project cost will therefore be \$143,000 (assuming 30% cost sharing).

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). **Manufacturers' discounts are encouraged for reducing total project costs, but are not eligible institutional cost sharing.** For instrument acquisition projects, eligible cost sharing may include partial purchase of the instrumentation and costs of instrument installation and calibration. In addition, an institution may provide as cost sharing the direct and indirect costs of supplies and personnel directly associated with operation and maintenance of the instrumentation, up to a yearly limit equivalent to 10% of the total instrument hardware cost in each year of the award period (up to three years). For instrument development projects, eligible cost sharing includes all items eligible for instrument acquisition projects. In addition, an institution may provide as cost sharing the direct and indirect costs of supplies and personnel directly associated with instrument design, development, operation, and maintenance, up to a yearly limit equivalent to 10% of the total instrument hardware cost in each year of the award period (up to five years).

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. 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.

Cost sharing must occur during the award period.

Proposal Due Dates

Proposals must be received electronically via FastLane by 5 PM, local time, **January 18, 2000**. (Note: The signed cover sheet must be scanned into the Supplementary Documents section of your FastLane proposal and submitted as part of the proposal. **Hard copies should not be sent to NSF.**)

VI. PROPOSAL REVIEW INFORMATION

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 non-academic institutions, minority serving institutions, adjacent disciplines to that principally addressed in the proposal, etc.

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. PIs should address this issue in their proposal to provide reviewers with the information necessary to respond fully to both NSF merit review criteria.

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. PIs should address this issue in their proposal to provide reviewers with the information necessary to respond fully to both NSF merit review criteria.

Additional Considerations

In addition to the evaluation criteria stated above, NSF will consider the following factors in making MRI awards:

- Instrument development with a private sector partner;
- The ability to demonstrate the shared use of the instruments for research and/or research training;
- Whether the research and/or research training served by the instrumentation advances the goals and aligns with the goals and core strategies articulated in “NSF In A Changing World,” the Foundation’s strategic plan (NSF 95-24; available on the NSF homepage at <<http://www.nsf.gov>>);
- Commitment of the MRI program to supporting quality proposals from non-Ph.D. granting and minority-serving institutions;
- Geographic distribution and distribution across Ph.D. and non-Ph.D. granting institutions; and
- Management plans for oversight of acquisition of instruments to be developed by third parties.

Merit Review Process

Most of the proposals submitted to NSF are reviewed by mail review, panel review, or some combination of mail and panel review. Proposals submitted in response to this announcement will be reviewed according to the procedures of the cognizant program office.

All proposals are carefully reviewed by at least three 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. In most cases, proposers will be contacted by the program officer after his or her recommendation to award or decline funding has been approved by his or her supervisor, the division director. This informal notification is not final. NSF will be able to tell applicants whether their proposals have been declined or recommended for funding within six months of the proposal deadline for 95 percent of proposals in this category.

In all cases, after final programmatic approval has been obtained, award recommendations are then 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.

VII. AWARD ADMINISTRATION INFORMATION

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.

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. 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/>>.

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 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 re-enter information previously provided, either with the proposal or in earlier updates using the electronic system.

Effective October 1, 1999, PIs are required to use the electronic project reporting system to submit annual and final project reports.

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 97-100) 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?nsf97100>>.

VIII. CONTACTS FOR ADDITIONAL INFORMATION

General inquiries about the NSF Major Research Instrumentation Program should be addressed to:

Office of Integrative Activities
Major Research Instrumentation Program
National Science Foundation
Room 1270
4201 Wilson Boulevard
Arlington, VA 22230
(703) 306-1040
E-Mail: mri@nsf.gov (Internet)

IX. DEFINITIONS

The following definitions apply to the Major Research Instrumentation Program and this program solicitation:

Consortia: Legally recognized groups consisting exclusively of two or more eligible institutions. For the purposes of evaluation and review, a consortium proposal will be identified with the institution where the requested research instrumentation is located.

Fixed Equipment: The permanent components of a research facility that are integral (i.e., built in, rather than affixed) to the facility (e.g., clean rooms, fume hoods, elevators, laboratory casework); their removal would affect the integrity or basic operation of the facility.

Independent Nonprofit Research Institutions: Independent legal entities, other than institutions of higher education, which are generally recognized as separately incorporated, nonprofit, tax exempt organizations, and which conduct research as one of their primary purposes.

Institution: A separate legal and fiscal entity, whether at the central or system level, main campus level, or branch campus level, which can receive awards and which is separately and consistently identified at that level by NSF.

Institutions of Higher Education: Institutions legally authorized and accredited at the college level by a nationally recognized accrediting agency to offer and which are offering at least a two-year program of college-level studies leading toward a degree.

Instrument Development: Development of new instruments (or their software simulations) with enhanced performance. "Performance" includes: accuracy; reliability; resolving power; throughput speed; sample capacity; flexibility of operation; breadth of application; and user-friendliness. NSF does not consider the acquisition of individual pieces of equipment to be combined in a new system to be instrument development.

Minority Institutions: Historically Black Colleges and Universities defined as "part B institutions" by section 322(2) of the Higher Education Act of 1965 (20 U.S.C. 1061(2)) and other institutions whose enrollments are: (a) more than 50 percent of a combination of any of the following groups: Alaskan Native (Eskimo or Aleut), American Indian, Black or African American, Hispanic, or Native Pacific Islander; or (b) 20 percent or more of any one of the above eligible minorities.

Non-Ph.D. Granting Institutions: Two- and four-year colleges and universities that have produced fewer than 20 Ph.D.s or D.Sci.s in all NSF-supported disciplines during the two previous academic years.

Private Sector: A business that is: 1) independently owned and operated, has its principal place of business in the United States, and is organized for profit; and 2) at least 51 percent owned, or in the case of a publicly owned business, at least 51 percent of its voting stock is owned by United States citizens or lawfully admitted permanent resident aliens.

Research Facilities: The bricks-and-mortar physical plant in which sponsored or unsponsored research activities (including research training) take place, including related infrastructure, systems (e.g., HVAC and power systems, toxic waste removal systems), and fixed equipment.

Research Museums: Independent nonprofit science museums, zoological parks, aquaria, natural history museums, etc., which conduct research as one of their primary purposes.

Research Training: Training of individuals (including advanced undergraduates, graduate students, postdoctoral fellows, and faculty) in research techniques where such activities utilize the same facilities as research activities. Research training does not include introductory science or engineering instruction, whether in a classroom or instructional laboratory.

X. 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. The NSF Guide to Programs is only 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/>>. Subscribers can also sign up for NSF's Custom News Service to find out what funding opportunities are available.

RELATED NSF PROGRAMS FOR RESEARCH INSTRUMENTATION

| Program Title | Brochure | Telephone |
|---|--|------------------|
| Chemistry Research Instrumentation and Facilities | NSF 98-10 | 703-306-1849 |
| Instrumentation for Materials Research | NSF 99-24 | 703-306-1810 |
| Advanced Technologies and Instrumentation Program, Division of Astronomical Sciences | No Publication # | 703-306-1830 |
| Scientific Computing Research Environment for the Mathematical Sciences | NSF 99-48 | 703-306-1880 |
| Earth Sciences Instrumentation and Facilities | NSF 96-50 Earth Sciences' Website: http://www.geo.nsf.gov/EA/IF/facil.htm | 703-306-1558 |
| Ocean Technology and Interdisciplinary Coordination Program (OTIC) | Ocean Sciences' Website: http://www.geo.nsf.gov/occe/ocetech.htm | 703-306-1584 |
| Oceanographic Instrumentation and Technical Services Program | NSF 94-124 | 703-306-1581 |
| Improvements in Facilities, Communications, and Equipment at Biological Field Stations and Marine Laboratories (FSML) | NSF 98-17 (electronic only) | 703-306-1469 |
| Instrument Development for Biological Research | NSF 98-119 (electronic only) | 703-306-1472 |
| Multi-user Biological Equipment and Instrumentation Resources | NSF 98-137 (electronic only) | 703-306-1472 |
| Instrumentation and Laboratory Improvement | NSF 99-53 | 703-306-1667 |
| Computer Information Science & Engineering Research Infrastructure | NSF 98-159 | 703-306-1981 |
| Instrumentation Grants for Research in Computer and Information Science and Engineering | NSF 98-132 | 703-306-1980 |
| Social, Behavioral, and Economic Science Instrumentation (contact Dr. John Yellen) | NSF 95-13 | 703-306-1759 |
| Small Business Innovation Research (SBIR) | NSF 99-57 | 703-306-1391 |

Information on the above NSF Instrumentation Programs can be retrieved by accessing the individual Directorate websites on the NSF Home page (<http://www.nsf.gov>).

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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.

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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.

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estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to: Reports Clearance Officer; Information Dissemination Branch, DAS; National Science Foundation; Arlington, VA 22230.

YEAR 2000 REMINDER

In accordance with Important Notice No. 120 dated June 27, 1997, Subject: Year 2000 Computer Problem, NSF awardees are reminded of their responsibility to take appropriate actions to ensure that the NSF activity being supported is not adversely affected by the Year 2000 problem. Potentially affected items include: computer systems, databases, and equipment. The National Science Foundation should be notified if an awardee concludes that the Year 2000 will have a significant impact on its ability to carry out an NSF funded activity. Information concerning Year 2000 activities can be found on the NSF web site at <http://www.nsf.gov/oirm/y2k/start.htm>.

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