

MAJOR RESEARCH INSTRUMENTATION (MRI) PROGRAM

*Instrument Development and
Acquisition Solicitation*

NSF 01-7

(Replaces NSF 99-168)

DEADLINE: ***February 7, 2001***

Office of Integrative Activities

Directorate for Biological Sciences

Directorate for Computer and Information Science and Engineering

Directorate for Engineering

Directorate for Geosciences

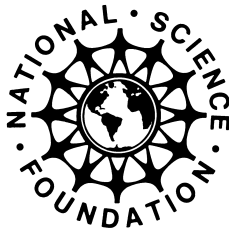
Directorate for Mathematical and Physical Sciences

Directorate for Social, Behavioral, and Economic Sciences

Office of Polar Programs



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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 is 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) 292-8040 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: The MRI program accepts proposals for acquisition or development of research instrumentation. An institution may submit up to three proposals, one of which must be solely for instrument development. One, two, or all three of an institution's proposals may be for instrument development.

Award Information

Type of award: Standard grant.

Proposal funding rate for FY 2000 MRI competition: Approximately 32%.

Amount of funds available: Approximately \$75 million, pending availability of funds, will be available for the MRI program in FY 2001, distributed across all NSF Directorates.

Anticipated date of award: August, 2001

Proposal Preparation and Submission Instructions

Proposal Due Date:

- Letter of Intent requirement: None.
- Preproposal requirements: None.
- Full proposal deadline: **FastLane submission: 5:00 p.m. submitter's local time, February 7, 2001** (Note: All necessary PI, Co-PI, and Authorized Organizational Representative certifications will be accomplished electronically via FastLane at time of proposal preparation and submission. **No paper copy of the cover sheet or certification page should be sent to NSF.**)
- Proposal preparation guidelines: See *Proposal Preparation Instructions* section.

Budgetary Information:

- For acquisition proposals from all eligible institutions except non-Ph.D. granting institutions, cost sharing at a level of 30% of total project cost is required. For non-Ph.D. granting institutions, cost sharing at a level of 30% of total project cost in excess of \$100,000 is required. For development proposals from all eligible institutions except non-Ph.D. granting institutions, cost sharing at a level of 30% of total equipment cost is required. For non-Ph.D. granting institutions, cost sharing at a level of 30% of total equipment cost in excess of \$100,000 is required.
- A letter of commitment to cost sharing from the appropriate institutional officer must be submitted electronically with the proposal.

FastLane Requirements:

- FastLane requirement: Full FastLane proposal submission required.
- FastLane point of contact: the FastLane Helpdesk at 1-800-673-6188, fastlane@nsf.gov; or the Office of Integrative Activities at (703) 292-8040, mriflane@nsf.gov

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.

- Reporting requirements: Standard NSF reporting requirements apply. No special reporting requirements are 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 is 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. 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, two or 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 \$75 million, pending availability of funds, in Fiscal Year 2001. The overall proposal funding rate for the FY 2000 MRI competition was approximately 32%.

Awards for instrumentation will range from \$100,000 to \$2 million. Proposals requesting funding at the low end of this range tend to have a higher funding rate than proposals at the high end. For the 5-year period FY1995-FY1999, approximately 41% of proposals requesting less than \$500,000 were funded. For this same period, approximately 30% of proposals requesting more than \$500,000 were funded. The average MRI award amount for the period FY1995-FY1999 was approximately \$331,000.

Proposals requesting less than \$100,000 will be considered only from non-Ph.D. granting institutions, from the mathematical science community, or from the social, behavioral and economic science communities.

Proposers may recommend an award period up to three years for acquisition proposals and up to five years for development proposals. The average award duration for all MRI awards made during the 5-year period FY1995-FY1999 was 2.27 years.

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. 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 01-2, 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 select the program announcement number of this solicitation in the program announcement/solicitation block on the FastLane Proposal Cover Sheet. 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*. On the cover sheet, where asked to identify a program announcement/solicitation number, **select the number for this solicitation, “NSF 01-7 Major Research Instrumentation program solicitation.”** Where asked to identify the NSF Unit Consideration, **select the appropriate Division to consider your proposal.** “Major Research Instrumentation” will be automatically selected as the program to review 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.

All necessary PI, Co-PI, and Authorized Organizational Representative certifications will be accomplished electronically via FastLane at time of proposal preparation and submission. **No paper copy of the cover sheet or certification page should be sent to NSF.**

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 NSF funds the project.
3. *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* (Suggested maximum length, 5 pages). Include this section only if the PI(s) has received NSF support for instrumentation.
 - b) *Research Activities* (Suggested 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 who will use 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* (Suggested 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* (Suggested 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* (Suggested 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.
4. *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, in accordance with GPG Chapter II, Section 5.a. through e. Also, identify the individual responsible for the instrumentation and provide his/her brief vita, including relevant experience. **DO NOT send copies of publications.** Where the number of senior personnel is large, limit the number of biographical sketches.
 5. *Budget and Funding*. Provide a single cumulative budget page presenting **only those eligible project costs that NSF is being asked to fund. Cost sharing should be shown on Line M on the proposal budget.** (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 large items must also be scanned and submitted as part of the proposal.**

6. *Current and Pending Support.* Provide a form for the PI, Co-PI(s), and each major user of the instrumentation for whom a biographical sketch is submitted. If an individual has no current or pending support (other than this proposal), completion of the form is not required.
7. *Facilities, Equipment, and Other Resources.* This section is not required for Major Research Instrumentation Proposals.
8. *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.**
9. *List of Suggested Reviewers (optional).* Proposers may include a list of suggested reviewers whom they believe are especially well qualified to review the proposal. Proposers may also list persons they would prefer not review the proposal, indicating why.

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

B. Budgetary Information

Cost Sharing for Acquisition Proposals

For all eligible institutions except non-Ph.D. granting institutions, cost sharing at a level of 30% of total eligible project costs is required. For non-Ph.D. granting institutions, cost sharing at a level of 30% of total eligible project costs in excess of \$100,000 is required. The proposed cost sharing must be shown on line M on the proposal budget.

Cost Sharing for Development Proposals

For all eligible institutions except non-Ph.D. granting institutions, cost sharing at a level of 30% of total equipment cost (line D on the proposal budget – Proposal Section F) is required. For non-Ph.D. granting institutions, cost sharing at a level of 30% of total equipment cost in excess of \$100,000 is required. Line D on the proposal budget should include only the equipment cost that NSF is asked to fund. The proposed cost sharing must be shown on Line M on the proposal budget.

The minimum award from NSF will be \$100,000 (except for awards to non-Ph.D. granting institutions or associated with mathematical sciences or the social, behavioral, or economic sciences) and the maximum award will be \$2 million. The minimum and maximum award

amounts represent NSF's contribution to the project and do not include the institution's 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 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 limit equivalent to 10% of the total instrument hardware cost, in each year of the award period (up to five years).

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 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.**

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.

C. Proposal Due Date

Proposals must be submitted via FastLane by 5 PM, submitter's local time, **February 7, 2001.**

All necessary PI, Co-PI, and Authorized Organizational Representative certifications will be accomplished electronically via FastLane at time of proposal preparation and submission. **No paper copy of the cover sheet or certification page should be sent to NSF.** All supplementary documents, including the required letter of cost sharing commitment, any letters of support, letter of industrial partnership, and manufacturers' price quotes, must be scanned into the Supplementary Documents section of your FastLane proposal and submitted as part of the proposal. **Do not send hard copies to NSF.**

D. FastLane Requirements

Proposers are required to prepare and submit all proposals for this Program Solicitation through the FastLane system. Detailed instructions for proposal preparation and submission via FastLane are available at: <http://www.fastlane.nsf.gov/a1/newstan.htm>. For FastLane user support, call 1-800-673-6188, or call the Office of Integrative Activities at (703) 292-8040. For non-FastLane questions related to the MRI competition, please contact the MRI program at mri@nsf.gov or at (703) 292-8040.

All necessary PI, Co-PI, and Authorized Organizational Representative certifications will be accomplished electronically via FastLane at time of proposal preparation and submission. **No paper copy of the cover sheet or certification page should be sent to NSF.**

VI. PROPOSAL REVIEW INFORMATION

A. NSF Proposal Review Process

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?

Principal Investigators should address the following elements in their proposal to provide reviewers with the information necessary to respond fully to both of the above-described NSF merit review criteria. NSF staff will give these elements 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 learning 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.

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 the Foundation's strategic plan (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.

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 proposals are carefully reviewed by at least three other persons outside NSF who are experts in the particular field represented by the proposal. Proposals submitted in response to this announcement/solicitation will be reviewed by mail and/or panel review.

Reviewers will be asked to formulate a recommendation to either support or decline each proposal. The Program Officer assigned to manage the proposal's review will consider the advice

of reviewers and will formulate a recommendation.

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 the Division Director. This informal notification is not a guarantee of an eventual award.

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. 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 and Agreements Officer may make commitments, obligations or awards on behalf of NSF or authorize the expenditure of funds. No commitment on the part of NSF should be inferred from technical or budgetary discussions with a NSF Program Officer. A Principal Investigator or organization that makes financial or personnel commitments in the absence of a grant or cooperative agreement signed by the NSF Grants and Agreements Officer does so at 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. 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. (See section VI. A, for additional information on the review process.)

B. Award Conditions

An NSF award consists of: (1) the award letter, which includes any special provisions applicable to the award and any numbered amendments thereto; (2) the budget, which indicates the amounts, by categories of expense, on which NSF has based its support (or otherwise communicates any specific approvals or disapprovals of proposed expenditures); (3) the proposal referenced in the award letter; (4) the applicable award conditions, such as Grant General Conditions (NSF-GC-1)* or Federal Demonstration Partnership (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 awards 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/home/grants/grants_gac.htm. 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 at <http://www.nsf.gov/cgi-bin/getpub?gpm>. The GPM is also for sale through the Superintendent of Documents, Government Printing Office (GPO), Washington, DC 20402. The telephone number at GPO for subscription information is (202) 512-1800. The GPM may be ordered through the GPO web site at <http://www.gpo.gov>.

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 the expiration of an award, 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.

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) 292-8040
E-Mail: mri@nsf.gov

IX. 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 00-81	703-292-4953
Instrumentation for Materials Research	NSF 99-24	703-292-8810
Advanced Technologies and Instrumentation Program, Division of Astronomical Sciences	No Publication # http://www.nsf.gov/mps/ast/ati.htm	703-292-4892
Scientific Computing Research Environment for the Mathematical Sciences	NSF 99-48	703-292-4863
Earth Sciences Instrumentation and Facilities	NSF 96-50 Earth Sciences' Website: http://www.geo.nsf.gov/EAR/IF/facil.htm	703-292-8558
Ocean Technology and Interdisciplinary Coordination Program (OTIC)	Ocean Sciences' Website; No Publication #	703-292-8580
Oceanographic Instrumentation and Technical Services Program	NSF 00-39	703-292-8580
Polar Instrumentation and Technology Development	NSF 00-25	703-292-8030
Improvements in Facilities, Communications, and Equipment at Biological Field Stations and Marine Laboratories (FSML)	NSF 98-17 (electronic only)	703-292-8470
Instrument Development for Biological Research	NSF 98-119 (electronic only)	703-292-8470
Multi-user Biological Equipment and Instrumentation Resources	NSF 98-137 (electronic only)	703-292-8470
Computer Information Science & Engineering Research Infrastructure	NSF 00-5	703-292-8980
Instrumentation Grants for Research in Computer and Information Science and Engineering	NSF 98-132	703-292-8980
Social, Behavioral, and Economic Science Instrumentation (contact Dr. John Yellen)	NSF 95-13	703-292-8759
Small Business Innovation Research (SBIR)	NSF 00-48	703-292-8330

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>).

X. 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.

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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/solicitation for further information.

The National Science Foundation has Telephonic Device for the Deaf (TDD) and Federal Information Relay Service (FIRS) capabilities that enable individuals with hearing impairments to communicate with the Foundation about NSF programs, employment or general information. TDD may be accessed at (703) 292-5090, FIRS at 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 proposal 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

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Catalogue of Federal Domestic Assistance (CFDA) Numbers:

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

OMB control number: 3145-0058