

Instrumentation for Materials Research (IMR)

Division of Materials Research

Program Solicitation

NSF 02-009

Replaces Document NSF 01-05



National Science Foundation

Directorate for Mathematical and Physical Sciences

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

Second Thursday in January

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

Instrumentation for Materials Research (IMR)
Division of Materials Research

Synopsis of Program:

The IMR Program supports the acquisition or development of research instruments that will provide new capability and/or advance current capability to: (1) discover fundamental phenomena in materials; (2) synthesize, process, and/or characterize the composition, structure, properties, and performance of materials; and (3) improve the quality, expand the scope, and foster and enable the integration of research and education in research-intensive environments.

Cognizant Program Officer(s):

- Joseph A. Akkara, Program Director (IMR), Directorate for Math & Physical Sciences, Division of Materials Research, 1065 N, telephone: (703) 292-4946, fax: (703) 292-9035, email: jakkara@nsf.gov

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

- 47.049 --- Mathematical and Physical Sciences

Eligibility Information

- **Organization Limit:** None Specified.
- **PI Eligibility Limit:** The IMR program accepts proposals from PhD granting institutions requesting funds to purchase or develop instruments which have a total cost of more than \$100,000. The program accepts proposals from non-PhD granting institutions requesting \$50,000.
- **Limit on Number of Proposals:** Only one proposal may be submitted by a Principal Investigator and he/she may collaborate in one other proposal as a co-Investigator.

Award Information

- **Anticipated Type of Award:** Standard or Continuing Grant
- **Estimated Number of Awards:** Not Specified.
- **Anticipated Funding Amount:** \$7,000,000 Funding for the IMR program is subject to change annually. It is expected that the support for IMR awards in fiscal year 2003 (FY03) will be at about the same level as in FY02, \$7.0 million, subject to the availability of funds.

Proposal Preparation and Submission Instructions

A. Proposal Preparation Instructions

- **Full Proposal Preparation Instructions:** The program announcement/solicitation contains supplements to the standard Grant Proposal Guide (GPG) proposal preparation guidelines. Please see the full program announcement/solicitation for further information.

B. Budgetary Information

- **Cost Sharing Requirements:** Cost Sharing is Specialized. Please see the full funding opportunity document for further information.
- **Indirect Cost (F&A) Limitations:** In accordance with the Federal Negotiated Rate.
- **Other Budgetary Limitations:** Other budgetary limitations apply. Please see the full funding opportunity document for further information.

C. Due Dates

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

Second Thursday in January

D. FastLane Requirements

- **FastLane Submission:** Full proposal submission is required.
- **FastLane Contact(s):**
 - Jefferson-Brown, Maxine; dmrf1@nsf.gov,
 - Rabanal, Florence; mpsfl@nsf.gov,

Proposal Review Information

- **Merit Review Criteria:** National Science Board approved criteria. Additional merit review considerations apply. Please see the full funding opportunity document for further information.

Award Administration Information

- **Award Conditions:** Standard NSF award conditions apply.
- **Reporting Requirements:** Standard NSF reporting requirements apply.

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I. INTRODUCTION

Observation and discovery of new phenomena are at the heart of our scientific enterprise. The Instrumentation for Materials Research (IMR) program in the Division of Materials Research (DMR) is designed to provide advanced capability for discovery, observation, characterization, fabrication and testing to the nation's scientists and engineers who are endeavoring to conduct research and educational activities in all areas normally supported by DMR. The Division supports a wide range of programs addressing fundamental phenomena in materials, materials synthesis and processing, structure and composition, properties and performance, and materials education. DMR plays a significant role in various NSF-wide interdisciplinary initiatives and programs. Consult the NSF "Guide to Programs," NSF 02-03 (<http://www.nsf.gov/pubsys/ods/getpub.cfm?gp>) for more information.

II. PROGRAM DESCRIPTION

The goals of the IMR Program are to support the acquisition or development of research instruments that will provide new capability and/or advance current capability to: (1) discover fundamental phenomena in materials; (2) synthesize, process, and/or characterize the composition, structure, properties, and performance of materials; and (3) improve the quality, expand the scope, and foster and enable the integration of research and education in research-intensive environments.

III. ELIGIBILITY INFORMATION

The IMR program accepts proposals from US institutions of higher education, independent nonprofit research institutions, research museums, and legally documented incorporated consortia thereof. Proposals may be submitted in support of individual investigators or small groups who are endeavoring to conduct research and educational activities in all areas within the purview of DMR. Synergistic collaboration among researchers and collaboration or partnerships with industry or government laboratories is encouraged when appropriate. Only one proposal may be submitted by a Principal Investigator and he/she may collaborate in one other proposal as a co-Investigator. Group and collaborative proposals involving more than one institution must be submitted as a single administrative package from one of the institutions involved. Due to the limited availability of funds, prospective applicants are strongly urged to contact the program officer listed at the end of this document for guidance. The IMR program normally considers proposals for single instruments or a single system. If more than one instrument is requested, the proposal must indicate their relative priority, and give explanations and scientific justification for each item requested. A proposal listing assorted instruments without a focused research or research training program will not be accepted. Proposers requesting instruments for multidisciplinary use involving other Divisions within NSF are encouraged to discuss their plans with the appropriate Program Officers prior to submission (see "Other NSF Programs for Research or Educational Instrumentation"). Multidisciplinary instrumentation proposals must only be submitted to one NSF Division, with a cover letter describing the multidisciplinary nature of the proposal. Proposals which are multidisciplinary in nature will be co-reviewed by the appropriate Division(s) within NSF. Proposals submitted to IMR that are under active review elsewhere in the Foundation are considered inappropriate and will not be accepted. The IMR program accepts instrument acquisition or development proposals submitted in accordance with the general guidelines described in the

NSF "Grant Proposal Guide", (GPG) NSF 03-2 (October 2002) <http://www.nsf.gov/cgi-bin/getpub?nsf032>. The IMR program accepts proposals from PhD granting institutions to purchase or develop instruments which cost more than \$100,000 (more than \$70,000 requested from NSF). The program accepts proposals from non-PhD granting institutions to purchase or develop instruments which cost more than \$50,000. Because of the high cost and complexity of major instruments, proposals for multi-user instruments are strongly encouraged. Proposals requesting funds to purchase or develop instruments costing less than \$100,000 (less than \$50,000 for non-PhD granting institutions) will be returned without review. Such proposals should be submitted to the appropriate disciplinary program(s) for review.

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 to be 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 cost of operation, maintenance, and other appropriate technical supports 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 instrument development. Direct and indirect costs associated with research projects to be conducted using the requested instrumentation (including researchers' salary and students' stipends) are not eligible costs under the MRI program.

IV. AWARD INFORMATION

Funding for the IMR program is subject to change annually subject to the availability of funds. It is expected that the support for IMR awards in fiscal year 2003 (FY03) will be at about the same level as in FY02. The program awarded \$7.0 million for instrument acquisition and development and education and training activities in FY02. The minimum award size in the IMR program is \$70,000 for PhD-granting institutions and \$50,000 for non-PhD granting institutions. The median IMR award size in FY01 is \$189,000. Typical award duration is one to three years.

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

Full Proposal Instructions:

Proposals submitted in response to this program announcement/solicitation should be prepared and submitted in accordance with the general guidelines contained in the NSF *Grant Proposal Guide* (GPG). The complete text of the GPG is available electronically on the NSF Website at: <http://www.nsf.gov/cgi-bin/getpub?gpg>. Paper copies of the GPG may be obtained from the NSF Publications Clearinghouse, telephone (301) 947-2722 or by e-mail from pubs@nsf.gov.

Proposers are reminded to identify the program announcement number (NSF 02-009) 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. What to submit: IMR proposals must adhere to the NSF GPG 03-2 guidelines for proposal preparation and submission. Instrumentation and equipment proposals should follow the format of research proposals. Each potential major user should describe the project(s) for which the equipment will be used. These descriptions should be succinct, not necessarily as detailed as in an individual research proposal, and should emphasize the intrinsic merit of the activity and the importance of the equipment to it. A brief summary will suffice for auxiliary users. The Project Summary must include a brief description of the proposed instrument and the new scientific and educational capability it will provide, a statement of the potential impact it will have on the research and education/training of students, and the potential impact it is expected to have on one or more fields of scientific research, education, or infrastructure. Proposals which do not contain this information, as well as all of the required information listed below will not be accepted. You may suggest the names, affiliations, and e-mail addresses of six to eight individuals outside the participating institutions, including women and members of underrepresented groups, who have expertise in the proposed activities and are not collaborators, and who could provide an unbiased evaluation if requested to review your proposal. The names of individuals who should not be used as reviewers may also be included. Include in this letter the names, affiliations, and e-mail addresses of all collaborators over the past five years, and indicate the nature of the collaboration. This information must be sent via the FastLane System using the "List of Suggested Reviewers" Fastlane FORM within the Proposal Preparation function. Special attention should be given to the following required information which is essential for the review and decision making process.

1. **Title.** The IMR proposal title should be brief and may not include abbreviations. It should begin with "Acquisition of ---," or "Development of ---", and include Education and/or Student Training in the title. For example: ".Acquisition of a Rheometer for Polymer Materials Research and Education". Another example: "Development of an Ultrahigh Resolution Photoemission System for Studies of Quantum Structures and Student Training". The title must not refer to any specific supplier or include model numbers, and must not exceed 15 words.

2. **Project Description.** The Project Description must clearly justify the instrument requested in terms of the scientific research and educational activities that are being proposed. The new measurement capability that the new instrument will provide should be clearly described. Refer to the GPG for more guidance. The following items are required as part of the Project Description (limited to 15 pages):

a. *Instrument Development/Construction Projects:* If development/construction of a new instrument is proposed, the design must provide sufficient detail for reviewers to assess its feasibility. Reviewers will be asked to comment on the potential impact that the proposed instrument will have on research and the education/training of students. A brief statement of the anticipated impact of the proposed project is required. The following must be provided:

- An analysis of the need and broad applicability of the proposed instrument, including potential uses and users in the field of materials research and education;
- A description of specific initial research plans for the instrument, and plans for long-range future usage;
- Plans for the construction of the instrument;
- A description of preliminary work completed;
- An analysis of potential problems/issues, and proposed solutions;
- An estimated timeline for completion within the requested duration of support;
- A plan to evaluate the performance of the instrument; and
- A description of industrial or national laboratory collaborations or links during the development stages and subsequent to development/construction completion, if appropriate;

b. *Instrument Acquisition Projects:* If purchase of a new instrument is proposed, the following information must be provided:

- A technical description of the proposed instrument, including the specific model(s) chosen, in sufficient detail for reviewers to evaluate the essential need and appropriateness of the instrument for the research and educational activities proposed; and a paragraph indicating whether the instrument will be used for new research project(s) or existing research project(s).
- A discussion of the research project(s) and educational activities for which the instrument will be used in sufficient detail for reviewers to evaluate its scientific merit. For multi-user instruments, no more than four or five major research projects, (projects utilizing 20% or more of the instrument time) may be described in succinct form, emphasizing the intrinsic scientific and educational merit of the activities and the importance of the equipment to them.
- A brief summary of all additional projects, i.e., those involving less than 20% of the instrument time, is sufficient. In the event the instrumentation proposal is linked to a research proposal under review in any of the disciplinary NSF programs, a clear statement of this link must be made.
- A summary of the research and educational goals contained in the proposal must be given, as well as the complementarity of the proposals. However, it is not necessary to duplicate the scientific sections of the research proposal in the instrumentation proposal. If the instrument is to be used for existing research projects, a discussion of the new capability the proposed instrument will provide, and how the new instrument will significantly impact the project(s) must be given. If comparable equipment to that requested is already at the proposing institutions, or if replacement of existing equipment is requested, rationale must be provided. This includes comparable government-owned equipment that is on-site.
- Plans for implementing the proposed research and educational activities.

3. The following items must be included following the Project Description as indicated by the GPG:

- a. *Biographical sketches.* Biographical sketches fastlane form required for all senior personnel involved (maximum of five) with the project, major users, and technical personnel responsible for instrument development and/or major instrument operation and maintenance.
- b. *Budget page and budget justification.* As required by Proposal Section F of the GPG, the budget must include the total cost of the proposed project or instrument, the itemized cost of each instrument component, and the proposed level of cost-sharing from all non-Federal sources. A full budget justification is required, according to the guidelines in the GPG.
- c. *Maintenance, Operation, and Use Plans.* A description of the operational plans for the maintenance, operation, and shared use of the instrument is required, including:
 - i. biographical sketch of the person(s) who will have overall responsibility for maintenance and operation, and a brief statement of qualifications;
 - ii. description of the physical facility, including floor plans and other appropriate information, where the equipment will be located;
 - iii. annual budget for operation and maintenance of the proposed equipment, specifying source(s) of funds;
 - iv. plans for the allocation of time on the instrument and the criteria used for allocation;
 - v. an estimate of the fraction of time the instrument will be used by the various local and other potential users must be indicated; and
 - vi. a detailed plan of how use charges will be assessed (if applicable).

Proposers are reminded to identify the program announcement/solicitation number ((02-009)) in the program announcement/solicitation block on the proposal Cover Sheet. Compliance with this requirement is critical to determining the relevant proposal processing guidelines. Failure to submit this information may delay processing.

B. Budgetary Information

Cost Sharing:

The IMR program has specific cost-sharing requirements. For Ph.D. granting institutions, cost-sharing at the level of 30% of the total equipment acquisition cost is required. This is equivalent to 43% of the amount requested from NSF. For non-PhD granting institutions, 30% cost-sharing is required on that portion of the acquisition cost in excess of \$100,000. For PhD granting institutions, if acquisition of major equipment is requested as part of an instrument development proposal, cost sharing is required at the level of 30% of the acquisition cost. For non-PhD granting institutions, the cost sharing requirement for instrument development proposals is identical to the requirement for acquisition proposals.

The proposed cost sharing must be shown on Line M on the proposal budget. Documentation of the availability of cost sharing must be included in the proposal. Only items which would be allowable under the applicable cost principles, if charged to the project, may be included as the awardee's contribution to cost sharing. Contributions may be made from any non-Federal source, including non-Federal grants or contracts, and may be cash or in-kind (see OMB Circular A-110, Section 23). It should be noted that contributions counted as cost-sharing toward projects of another Federal agency may not be counted towards meeting the specific cost-sharing requirements of the NSF award. All cost-sharing amounts are subject to audit. Failure to provide the level of cost-sharing reflected in the approved award budget may result in termination of the NSF award, disallowance of award costs and/or refund of award funds to NSF.

Indirect Cost (F&A) Limitations:

In accordance with the Federal Negotiated Rate.

Other Budgetary Limitations:

Minimum equipment cost of \$50,000 for proposals from non-PhD granting institutions; minimum equipment cost of \$100,000 for proposals from PhD granting institutions.

C. Due Dates

Proposals must be submitted by the following date(s):

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

Second Thursday in January

D. FastLane Requirements

Proposers are required to prepare and submit all proposals for this announcement/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 the FastLane Help Desk at 1-800-673-6188 or e-mail fastlane@nsf.gov. The FastLane Help Desk answers general technical questions related to the use of the FastLane system. Specific questions related to this program announcement/solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this announcement/solicitation.

Submission of Electronically Signed Cover Sheets. The Authorized Organizational Representative (AOR) must electronically sign the proposal Cover Sheet to submit the required proposal certifications (see Chapter II, Section C of the [Grant Proposal Guide](#) for a listing of the certifications). The AOR must provide the required electronic certifications within five working days following the electronic submission of the proposal. Proposers are no longer required to provide a paper copy of the signed Proposal Cover Sheet to NSF. Further instructions regarding this process are available on the FastLane Website at: <http://www.fastlane.nsf.gov>

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, or adjacent disciplines to that principally addressed in the proposal.

The National Science Board approved revised criteria for evaluating proposals at its meeting on March 28, 1997 (NSB 97-72). All NSF proposals are evaluated through use of the two merit review criteria. In some instances, however, NSF will employ additional criteria as required to highlight the specific objectives of certain programs and activities.

On July 8, 2002, the NSF Director issued Important Notice 127, Implementation of new Grant Proposal Guide Requirements Related to the Broader Impacts Criterion. This Important Notice reinforces the importance of addressing both criteria in the preparation and review of all proposals submitted to NSF. NSF continues to strengthen its internal processes to ensure that both of the merit review criteria are addressed when making funding decisions.

In an effort to increase compliance with these requirements, the January 2002 issuance of the GPG incorporated revised proposal preparation guidelines relating to the development of the Project Summary and Project Description. Chapter II of the GPG specifies that Principal Investigators (PIs) must address both merit review criteria in separate statements within the one-page Project Summary. This chapter also reiterates that broader impacts resulting from the proposed project must be addressed in the Project Description and described as an integral part of the narrative.

Effective October 1, 2002, NSF will return without review proposals that do not separately address both merit review criteria within the Project Summary. It is believed that these changes to NSF proposal preparation and processing guidelines will more clearly articulate the importance of broader impacts to NSF-funded projects.

The two National Science Board approved merit review criteria are listed below (see the [Grant Proposal Guide](#) Chapter III.A for further information). The criteria include considerations that help define them. These considerations are suggestions and not all will apply to any given proposal. While proposers must address both merit review criteria, reviewers will be asked to address only those considerations that are relevant to the proposal being considered and for which he/she is qualified to make judgements.

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 the 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?

NSF staff will give careful consideration to the following 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 -- is essential to the health and vitality of science and engineering. NSF is committed to this principle of diversity and deems it central to the programs, projects, and activities it considers and supports. **Additional Review Criteria**

The following additional criteria will be used in the evaluation of IMR proposals:

1. **Essential need for the instrument.** The utility, impact or potential impact that the instrument will have on the proposed research and/or training/educational activities, or on a field of research.
2. **Impact on Infrastructure.** How the instrument will contribute to broader long-range goals of the institution, fields of science, and education.
3. **The ability of the applicants to operate and maintain the instrument.** Evaluation of the qualifications of the person(s) responsible for the instrument, allocation of time on the instrument, and provisions for operation and long-term maintenance of the instrument over its expected lifetime.
4. **Appropriateness of development plans.** For instrument development/construction, an assessment of feasibility, costs and schedule for completion, and plans for integration and use of the instrument in the research and educational activities described subsequent to the completion of the development/construction phase.
5. **Relevance to research and education.** The relevance of the proposed instrumentation to the research and educational activities, and potential toward achieving national goals of strategic importance. The impact on all sectors of materials research community. For instrument development proposals, the expected impact on all sectors of the materials research community and potential for enhancing linkages between sectors.

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 Ad Hoc 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.

A summary rating and accompanying narrative will be completed and submitted by each reviewer. In all cases, reviews are treated as confidential documents. Verbatim copies of reviews, excluding the names of the reviewers, are sent 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.

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 is striving to be able to tell applicants whether their proposals have been declined or recommended for funding within six months. The time interval begins on the date of receipt. 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 their 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 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 Website 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, available electronically on the NSF Website 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 Website 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. 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.

PIs are required to use NSF's electronic project reporting system, available through FastLane, for preparation and submission of annual and final project reports. 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 regarding this program should be made to:

- Joseph A. Akkara, Program Director (IMR), Directorate for Math & Physical Sciences, Division of Materials Research, 1065 N, telephone: (703) 292-4946, fax: (703) 292-9035, email: jakkara@nsf.gov

For questions related to the use of FastLane, contact:

- Jefferson-Brown, Maxine; dmrfl@nsf.gov,
- Rabanal, Florence; mpsf@nsf.gov,

IX. OTHER PROGRAMS OF INTEREST

The NSF *Guide to Programs* is a compilation of funding for research and education in science, mathematics, and engineering. The NSF *Guide to Programs* is available electronically at <http://www.nsf.gov/cgi-bin/getpub?gp>. General descriptions of NSF programs, research areas, and eligibility information for proposal submission are provided in each chapter.

Many NSF programs offer announcements or solicitations concerning specific proposal requirements. To obtain additional information about these requirements, contact the appropriate NSF program offices. 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](http://www.nsf.gov/home/ebulletin), which is updated daily on the NSF Website at <http://www.nsf.gov/home/ebulletin>, and in individual program announcements/solicitations. Subscribers can also sign up for NSF's [Custom News Service](http://www.nsf.gov/home/cns/start.htm) (<http://www.nsf.gov/home/cns/start.htm>) to be notified of new funding opportunities that become available.

Related Programs:

Related NSF programs for research instrumentation and instrument development are listed below. In NSF divisions that have no separate instrumentation program, needs are provided for in regular research grant programs.

Program Title	Brochure	Telephone
Chemistry Research Instrumentation and Facilities	NSF 00-81	703-292-4953
Advanced Technologies and Instrumentation Program, Division of Astronomical Sciences	http://www.nsf.gov/mps/ast/ati.htm	703-292-4892
Major Research Instrumentation	NSF 01-171	703-292-8040
Scientific Computing Research Environment for the Mathematical Sciences	NSF 99-154	703-292-4863
Earth Sciences Instrumentation and Facilities	http://www.geo.nsf.gov/EAR/IF/facil.htm	703-292-8558
Ocean Technology and Interdisciplinary Coordination Program (OTIC)	Ocean Sciences' Website	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 02-040	703-292-8470

Instrument Development for Biological Research	NSF 98-119	703-292-8470
Multi-user Biological Equipment and Instrumentation Resources	NSF 98-137	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 01-28	703-292-8330

ABOUT THE NATIONAL SCIENCE FOUNDATION

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

NSF welcomes proposals from all qualified scientists, engineers and educators. The Foundation strongly encourages women, minorities and persons with disabilities to compete fully in its programs. In accordance with Federal statutes, regulations and NSF policies, no person on grounds of race, color, age, sex, national origin or disability shall be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving financial assistance from NSF, although some programs may have special requirements that limit eligibility.

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 GPG Chapter 11, Section D.2 for instructions regarding preparation of these types of proposals.

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