Partnerships for Research and Education in Materials (PREM)

Program Solicitation

NSF 03-564



National Science Foundation

Directorate for Mathematical and Physical Sciences Division of Materials Research

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

August 15, 2003

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

Partnerships for Research and Education in Materials (PREM)

Synopsis of Program:

The objective of PREM is to enhance diversity in materials research and education by stimulating the development of formal, long-term, collaborative research and education partnerships between minority-serving institutions and the NSF Division of Materials Research (DMR)-supported groups, centers and facilities.

Cognizant Program Officer(s):

- Thomas P. Rieker, Program Director, Directorate for Mathematical & Physical Sciences, Division of Materials Research, 1065 S, telephone: (703) 292-4914, email: trieker@nsf.gov
- Maija M. Kukla, Program Director, Directorate for Mathematical & Physical Sciences, Division of Materials Research, 1065 N, telephone: (703) 292-4940, fax: (703) 292-9035, email: mkukla@nsf.gov

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

47.049 --- Mathematical and Physical Sciences

Eligibility Information

- **Organization Limit:** The proposal must be submitted from a minority-serving institution. See 'Eligible Institutions' in this program solicitation for a complete description.
- PI Eligibility Limit: The PI must hold a faculty appointment at a minority-serving institution.
- Limit on Number of Proposals: None Specified.

Award Information

- Anticipated Type of Award: Standard or Continuing Grant
- Estimated Number of Awards: 4 to 10
- Anticipated Funding Amount: \$250,000 to \$750,000 per year for up to 5 years pending the availability of funds.

Proposal Preparation and Submission Instructions

A. Proposal Preparation Instructions

• Full Proposal Preparation Instructions: This solicitation contains information that supplements the standard Grant Proposal Guide (GPG) proposal preparation guidelines. Please see the full text of this solicitation for further information.

B. Budgetary Information

- Cost Sharing Requirements: Cost Sharing is not required.
- Indirect Cost (F&A) Limitations: Not Applicable.
- Other Budgetary Limitations: Other budgetary limitations apply. Please see the full text of this solicitation for further information.

C. Due Dates

• Full Proposal Deadline Date(s) (due by 5 p.m. proposer's local time):
August 15, 2003

Proposal Review Information

• Merit Review Criteria: National Science Board approved criteria. Additional merit review considerations apply. Please see the full text of this solicitation 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

The National Science Foundation's mandate to ensure the vitality of the Nation's scientific and engineering enterprise includes concerns for the quality of and access to materials research and education for all Americans. Within this context, it is recognized that minority-serving institutions and DMR-supported groups, centers and facilities represent rich resources for improving minority access to careers in materials research.

The Partnerships for Research and Education in Materials (PREM) activity described in this solicitation is designed to improve and strengthen the education infrastructure in materials research, and to increase recruitment, retention and degree attainment by members of groups underrepresented in materials research.

Traditionally, minority-serving institutions are the leading sources of degrees in materials-related fields awarded to underrepresented minorities. The PREM activity is intended to enhance the quantity and quality of materials research opportunities for students and faculty members at participating minority-serving institutions. The activity will produce models for developing long-term materials education and research relationships between minority-serving institutions and DMR-supported groups, centers, and facilities.

II. PROGRAM DESCRIPTION

The objective of PREM is to enhance diversity in materials research and education by stimulating the development of formal, long-term, collaborative research and education relationships between minority-serving institutions and DMR-supported groups, centers and facilities.

PREM awards are expected to achieve significant increases in the number and quality of interactions between participants from the DMR-supported groups, centers and facilities and faculty and students at minority-serving institutions, and should result in increasing graduate materials-related degrees for underrepresented minorities and in networking and dissemination of new knowledge.

III. ELIGIBILITY INFORMATION

Eligible Activities

Support will be provided for activities that facilitate development of formal long-term materials research and education relationships between minority-serving institutions and DMR-supported groups, centers and facilities. Eligible DMR-supported groups are Focused Research Groups (FRGs) and Nanoscale Science Interdisciplinary Research Teams (NIRTs). Eligible DMR-supported centers include Materials Research Science and Engineering Centers (MRSECs) and Nanoscale Science and Engineering Centers (NSECs). Lists of DMR-supported groups (FRGs and NIRTs) can be found at http://www.nsf.gov/mps/divisions/dmr/research/; centers and facilities can be found at http://www.nsf.gov/mps/vgn_bah/output/programs/dmr.

Funded activities might include, but are not limited to, the development of collaborative and mutually beneficial materials research and education projects, support for graduate and undergraduate students and exchanges of faculty and students. Well-prepared high school students may also participate.

Eligible Institutions

PREM proposals may be submitted by minority-serving institutions, including Historically Black Colleges and Universities (HBCUs), Hispanic-serving Institutions (HSIs), and Tribally Controlled Colleges (TCCs). Each PREM proposal must be submitted in collaboration with (and may include a subcontract to) one or more DMR-supported groups, centers and facilities.

Colleges and universities eligible to participate in this activity must offer baccalaureate degrees in materials-related science or engineering disciplines and meet at least one of the following criteria:

- 1. Be designated by the Department of Education in FY 1994 as a Hispanic-serving Institution (HSI) under Title III of the Higher Education Act of 1965, as amended [See 20 USC 1059 (copyright symbol); Public Law 102-325, Section 316, July 22, 1992].
- 2. Be designated by the Department of Education as a Historically Black College or University under Title III of the Higher Education Act of 1965, as amended (see 34 CFR 608.2).
- 3. Be cited as a Tribal college or university in Section 532 of the Equity in Educational Land-Grant Status October of 1994; Tribally Controlled Community College Assistance Act of 1978; or the Navajo Community College Assistance Act of 1978, Public Law 95-471.

The minority-serving institution may partner with any DMR-supported group, center or facility as defined above. Proposers may subcontract (if appropriate) with a DMR-supported group, center or facility whose institutional leadership has demonstrated a commitment to this enterprise at least for the duration of the PREM grant.

IV. AWARD INFORMATION

NSF expects to make Standard or Continuing Grants. The estimated number of awards will be 4 to 10. Awards are anticipated to be effective in March 2004. The anticipated funding amount is \$250,000 to \$750,000 per year for up to 5 years. Estimated program budget, number of awards and average award size/duration are subject to the availability of funds.

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 (703) 292-7827 or by e-mail from pubs@nsf.gov.

Supplemental proposal preparation instructions appear below.

The following items should be included and/or addressed in the "Project Description" section of the proposal (limit 20 pages):

- List of Participants. Provide a list of participating faculty from all institutions. List each faculty participant by full name, and his/her institutional and departmental affiliation. Also, enter each name in "Add/Delete Non Co-PI Senior Personnel" FastLane Form. (Note: All faculty participants should have a biographical sketch and a list of current and pending support included in the corresponding section of the proposal.)
- Describe the goals and the mission of the partnership.
- Describe the planned research and education program.
- Describe the role of the DMR-supported group, center and/or facility.
- Outline the management plan and include an organizational chart.
- Describe how the research and education plans will be internally evaluated and include a plan for self-assessment.
- Describe the potential impact of the project and how these results will be disseminated.

Also, each participating DMR-supported group, center and/or facility should provide one letter of support that outlines their participation (limit 2 pages). This letter(s) should be included in the "Supplementary Documents" section of the proposal.

Proposers are reminded to identify the program announcement/solicitation number (03-564) in the program announcement/solicitation block on the proposal Cover Sheet. Compliance with this requirement is critical to determining the relevant proposal processing quidelines. Failure to submit this information may delay processing.

Cost Sharing:

Cost sharing is not required for proposals submitted under this Program Solicitation.

Other Budgetary Limitations:

The proposed budget can request \$250,000 to \$750,000/year for up to a period of 5 years.

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):

August 15, 2003

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 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 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 PREM proposals will also be evaluated on the following:

- Are the goals and mission of the partnership clearly defined and achievable?
- Is the role of the DMR-supported group, center or facility clearly stated?
- Is the planned research and education program sound and feasible?
- Is the management plan sound? Does the organization chart contain the appropriate participants?

• Is the plan for internal assessment of the impact, dissemination of results and progress of the project reasonable?

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 (703) 292-7827 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 the PI and all Co-PIs. 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:

- Thomas P. Rieker, Program Director, Directorate for Mathematical & Physical Sciences, Division of Materials Research, 1065 S, telephone: (703) 292-4914, email: trieker@nsf.gov
- Maija M. Kukla, Program Director, Directorate for Mathematical & Physical Sciences, Division of Materials Research, 1065 N, telephone: (703) 292-4940, fax: (703) 292-9035, email: mkukla@nsf.gov

For questions related to the use of FastLane, contact:

• Maxine E. Jefferson-Brown, Computer Specialist, Directorate for Mathematical & Physical Sciences, Division of Materials Research, 1065 N, telephone: (703) 292-4918, fax: (703) 292-9035, email: mjeffers@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, 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) to be notified of new funding opportunities that become available.

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 (FASED) 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 II, Section D.2 for instructions regarding preparation of these types of proposals.

The National Science Foundation promotes and advances scientific progress in the United States by competitively awarding grants and cooperative agreements for research and education in the sciences, mathematics, and engineering.

To get the latest information about program deadlines, to download copies of NSF publications, and to access abstracts of awards, visit the NSF Website at http://www.nsf.gov

• Location: 4201 Wilson Blvd. Arlington, VA 22230

• For General Information (703) 292-5111 (NSF Information Center):

• TDD (for the hearing-impaired): (703) 292-5090 or (800) 281-8749

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or telephone: (703) 292-7827

• To Locate NSF Employees: (703) 292-5111

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.

An agency may not conduct or sponsor, and a person is not required to respond to an information collection unless it displays a valid OMB control number. The OMB control number for this collection is 3145-0058. Public reporting burden for this collection of information is estimated to average 120 hours per response, including the time for reviewing instructions. Send comments regarding this burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to: Suzanne Plimpton, Reports Clearance Officer, Division of Administrative Services, National Science Foundation, Arlington, VA 22230.

OMB control number: 3145-0058.

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