Materials World Network: Cooperative Activity in Materials Research between US Investigators and their Counterparts Abroad (MWN)

PROGRAM SOLICITATION
NSF 11-568

REPLACES DOCUMENT(S):
NSF 10-588

National Science Foundation

Directorate for Mathematical & Physical Sciences
Division of Materials Research

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

November 10, 2011

IMPORTANT INFORMATION AND REVISION NOTES

A revised version of the *NSF Proposal & Award Policies & Procedures Guide* (PAPPG), NSF 11-1, was issued on October 1, 2010 and is effective for proposals submitted, or due, on or after January 18, 2011. Please be advised that the guidelines contained in NSF 11-1 apply to proposals submitted in response to this funding opportunity.

Cost Sharing: The PAPPG has been revised to implement the National Science Board's recommendations regarding cost sharing. Inclusion of voluntary committed cost sharing is prohibited. In order to assess the scope of the project, all organizational resources necessary for the project must be described in the Facilities, Equipment and Other Resources section of the proposal. The description should be narrative in nature and must not include any quantifiable financial information. Mandatory cost sharing will only be required when explicitly authorized by the NSF Director. See the PAPP Guide Part I: *Grant Proposal Guide (GPG)* Chapter II.C.2.g(xi) for further information about the implementation of these recommendations.

Data Management Plan: The PAPPG contains a clarification of NSF's long standing data policy. All proposals must describe plans for data management and sharing of the products of research, or assert the absence of the need for such plans. FastLane will not permit submission of a proposal that is missing a Data Management Plan. The Data Management Plan will be reviewed as part of the intellectual merit or broader impacts of the proposal, or both, as appropriate. Links to data management requirements and plans relevant to specific Directorates, Offices, Divisions, Programs, or other NSF units are available on the NSF website at: http://www.nsf.gov/bfa/dias/policy/dmp.jsp. See Chapter II.C.2.j of the GPG for further information about the implementation of this requirement.

Postdoctoral Researcher Mentoring Plan: As a reminder, each proposal that requests funding to support postdoctoral researchers must include, as a supplementary document, a description of the mentoring activities that will be provided for such individuals. Please be advised that if required, FastLane will not permit submission of a proposal that is missing a Postdoctoral Researcher Mentoring Plan. See Chapter II.C.2.j of the GPG for further information about the implementation of this requirement.

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

Materials World Network: Cooperative Activity in Materials Research between US Investigators and their Counterparts Abroad (MWN)

Synopsis of Program:

Continued progress in fundamental materials and condensed matter research is increasingly dependent upon collaborative efforts among different disciplines, as well as closer coordination among funding agencies and effective partnerships involving universities, industry, and national laboratories. In addition, because of the growing interdependence of the world's economies, partnerships are important not only at the national level but from an international point of view as well. The National Science Foundation is working jointly with counterpart national, regional and multinational funding organizations worldwide to enhance opportunities for collaborative activities in materials research and education between US investigators and their colleagues abroad. This solicitation describes an activity to foster opportunities for such collaborations. It includes joint activities between the NSF Division of Materials Research (DMR)and funding organizations in Africa, Asia and Europe. Funding organizations in the Americas participate in this

joint activity with DMR every other year on even years, and therefore are not listed as participating organizations in this solicitation for 2011. NSF also partners with the U.S. Agency for International Development (USAID) in this activity and encourages projects for materials research and education collaborations with investigators from developing countries where the work of the developing country participants is supported by USAID, either through the USAID Partnerships for Enhanced Engagement in Research (PEER) program or other appropriate USAID program. A list of developing countries where USAID operates may be found at http://www.usaid.gov/locations/ .

Proposals submitted to NSF in response to this solicitation must have clear relevance to research supported by the NSF Division of Materials Research (DMR), as they will be evaluated within the context of programmatic areas within DMR: condensed matter physics, solid state and materials chemistry, polymers, biomaterials, metals and metallic nanostructures, ceramics, electronic and photonic materials, and condensed matter and materials theory. *Investigators are strongly advised to contact NSF staff in advance to ascertain that the research planned fits within the scope of the solicitation. Proposals not appropriate for DMR consideration will be returned without review*. NSF will accept proposals from US academic institutions addressing collaborations between researchers from the US and participating countries or regions. Concurrently, investigators at non-US research institutions should submit to the counterpart funding organization in their country or region a request for support of their side of the collaboration. NSF will consider support of all appropriate research costs for the US side of such collaborations, with the expectation that funding or research organizations from the appropriate countries or regions will consider supporting the costs of the non-US participants. In the case of collaborations with participants from developing countries where the developing country participants currently have or are in the process of seeking USAID support, US investigators are encouraged to contact DMR staff listed in this solicitation for additional up-to-date guidance. Projects proposed to NSF are expected to offer students and junior researchers the opportunity to participate in international research and education experiences, including appropriate resource allocation in the budget request for this purpose, and to clearly demonstrate the value added by the international collaboration. Projects are also expected to broaden the participation of underrepresented groups, including women, minorities and persons with disabilities.

Cognizant Program Officer(s):

Please note that the following information is current at the time of publishing. See program website for any updates to the points of contact.

- Michael J. Scott, 1065 N, telephone: (703) 292-4771, email: mjscott@nsf.gov
- Carmina Londono, 1065 N, telephone: (703) 292-7053, email: clondono@nsf.gov

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

- 47.049 --- Mathematical and Physical Sciences

Award Information

Anticipated Type of Award: Standard Grant or Continuing Grant

Estimated Number of Awards: 20 to 30 depending on quality of proposals and availability of funds

Anticipated Funding Amount: $2,500,000 to $4,000,000 total in FY2012, depending on quality of proposals and availability of funds

Eligibility Information

Organization Limit:

Proposals may only be submitted by the following:

- Universities and Colleges - Universities and two- and four-year colleges (including community colleges) accredited in, and having a campus located in the US, acting on behalf of their faculty members. Such organizations also are referred to as academic institutions.

PI Limit:

The PI and Co-PI(s) must hold a position at an eligible US institution. NSF will not accept proposals from investigators at non-US institutions.

Limit on Number of Proposals per Organization:

None Specified

Limit on Number of Proposals per PI: 1

An investigator may participate as PI or co-PI in only one proposal submitted in response to this solicitation. Also, an investigator may serve as PI or Co-PI in either (a) a proposal submitted in response to this solicitation or, (b) an unsolicited proposal submitted to the Division of Materials Research within the FY2012 DMR submission window (see http://www.nsf.gov/materials for the submission window of unsolicited proposals to DMR), but not both.

Proposal Preparation and Submission Instructions

A. Proposal Preparation Instructions

- Letters of Intent: Not Applicable
- Preliminary Proposal Submission: Not Applicable
- Full Proposals:
  - Full Proposals submitted via FastLane: NSF Proposal and Award Policies and Procedures Guide, Part I: Grant Proposal

Guide (GPG) Guidelines apply. The complete text of the GPG is available electronically on the NSF website at: http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpg.

- Full Proposals submitted via Grants.gov: NSF Grants.gov Application Guide: A Guide for the Preparation and Submission of NSF Applications via Grants.gov Guidelines apply (Note: The NSF Grants.gov Application Guide is available on the Grants.gov website and on the NSF website at: http://www.nsf.gov/publications/pub_summ.jsp?ods_key=grantsgovguide)

B. Budgetary Information

- Cost Sharing Requirements: Inclusion of voluntary committed cost sharing is prohibited.
- 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(s) (due by 5 p.m. proposer's local time):

  November 10, 2011

Proposal Review Information Criteria

Merit Review Criteria: National Science Board approved criteria apply.

Award Administration Information

Award Conditions:; Standard NSF award conditions apply.

Reporting Requirements: Standard NSF reporting requirements apply.

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I. INTRODUCTION

The basic properties of materials frequently define the capabilities, potential, reliability and limitations of technology. Advances in fundamental materials and condensed matter research enable progress to be made across a broad range of scientific and engineering disciplines and technological areas with dramatic impacts on society. Continued progress in materials research is increasingly dependent upon collaborative efforts among multiple disciplines, as well as closer coordination among funding agencies and effective partnerships involving universities, industry, and national laboratories. Furthermore, in view of the rapid change in science and engineering capabilities worldwide as well as industries becoming increasingly global, partnerships are important not only at the national level but also from an international point of view. NSF works to enable US researchers and students to leverage worldwide capabilities and investments, and to facilitate their access to internationally located expertise, facilities and data as needed to address multidisciplinary challenges of national and global significance. Towards the goal of maintaining US global leadership at the frontiers of knowledge, the NSF Division of Materials

Research (DMR) is working jointly with counterpart national, regional and multinational funding organizations worldwide and with the US Agency for International Development (USAID) to enhance opportunities for collaborative activities in materials research and education between US investigators and their colleagues abroad.

II. PROGRAM DESCRIPTION

This solicitation describes an activity to foster collaboration in materials and condensed matter research between investigators in the US and their counterparts abroad. It includes joint activities between the NSF Division of Materials Research (DMR) and funding organizations in Africa, Asia and Europe. Funding organizations in the Americas participate in this joint activity with DMR every other year on even years, and therefore are not listed as participating organizations in this solicitation for 2011. NSF also partners with the U.S. Agency for International Development (USAID) in this activity and encourages projects for materials research and education collaborations with researchers from developing countries where the work of the foreign participants is supported by USAID, either through the USAID Partnerships for Enhanced Engagement in Research (PEER) program or other appropriate USAID program. A list of developing countries where USAID operates may be found at http://www.usaid.gov/locations/ .

Proposals submitted to NSF in response to this solicitation must have clear relevance to fundamental materials and condensed matter research supported by the NSF Division of Materials Research (DMR). Projects not having this focus will not be considered for funding. Proposals will be evaluated within the context of programmatic areas supported by DMR: condensed matter physics, solid state and materials chemistry, polymers, biomaterials, metallic materials and nanostructures, ceramics, electronic and photonic materials, and condensed matter and materials theory. For areas supported by DMR see http://www.nsf.gov/materials . It is strongly recommended that proposers contact the cognizant program officer listed in this solicitation to ascertain that the scientific focus of the proposed research is appropriate for the solicitation. Proposals not appropriate for consideration by the Division of Materials Research will be returned without review.

NSF will accept proposals from US academic institutions addressing collaborations between researchers from the US and participating countries or regions. Concurrently, investigators at non-US research institutions should submit to the counterpart funding organization in their country or region a request for support of their side of the collaboration. NSF will consider support for all appropriate research costs of the US side of such collaborations, with the expectation that funding or research organizations from the appropriate countries or regions will consider supporting the costs of the non-US participants. Under this MWN solicitation, NSF will not accept proposals from investigators at non-US institutions and will not support subawards to non-US institutions. Contact information for participating funding organizations abroad is listed in Section VIII.

NSF especially encourages proposals for materials research and education collaborations with foreign participants from developing countries where USAID operates and will consider proposals for collaborations with developing country investigators who currently receive or are in the process of seeking USAID support. US investigators are encouraged to contact DMR staff listed in this solicitation for additional and up-to-date guidance in this case.

Materials research and education proposals to NSF from individual investigators and small groups of investigators (2-4 investigators) are welcome. Research center-type proposals will not be considered. Proposals should be balanced in terms of intellectual effort and participation in the US and abroad.

Projects proposed to NSF in areas supported by DMR are encouraged to develop collaborations that involve sending U.S. students and junior researchers to conduct collaborative research and education at international partner organizations. NSF awards are limited to support of the U.S. portion of the collaboration. Although reciprocal visits by international researchers and students to the U.S. institutions are encouraged, NSF will not usually pay for the expenses of foreign scientists or students undertaking such visits. However, in certain cases where housing and subsistence costs in the foreign country are much less than in the U.S. and for projects involving exchanges of researchers and/or students, reciprocal arrangements for provision of housing and subsistence may be established, with adherence to the overall principle that each side supports equivalent costs (i.e. if room and board expenses of foreign visitors are to be paid for with NSF funds it is expected that a reciprocal arrangement be in place for the foreign country to support the equivalent costs of US participants when visiting that country) . *Proposals that include exchange of students and post-doctoral research associates between the US and abroad, as well as proposals from junior faculty and members of underrepresented groups in science and engineering (women, racial/ethnic minorities, persons with disabilities) are strongly encouraged.*

In addition to proposals for international materials research and education collaborations from individuals and small groups, proposals to link networks of US investigators with counterpart networks abroad will also be considered. Such proposals should include multiple investigators from several institutions in the US and should link with counterpart networks abroad. Proposed networking activities should focus on a theme to give coherence to the network, such as a broad topic in materials research. Such proposals should spell out the foundations of the network's proposed activities, and should specify activities to be undertaken, new groups of investigators to be brought together, products to be generated by the network activities, and how information about the network and opportunities to participate will be disseminated. The proposal should also outline the expected benefits of the network's activities in moving forward an area of materials research and the implications for the broader community of materials researchers. Innovative ideas for implementing novel networking strategies, collaborative technologies, and development of community standards for data and meta-data are especially encouraged. For such type of proposal, NSF support is to be provided for activities that may include workshops, meetings, brief personnel exchanges, data exchanges, the use of cyber tools, etc., to enable linkages between the US network and counterpart networks in other countries/regions.

Proposals addressing materials and condensed matter research in areas supported by DMR as described above are covered by this solicitation. *Of special interest to this solicitation are proposals including activities that build upon and expand current cyber infrastructure capabilities, such as remote use of instrumentation, database creation and use, visualization and virtual experimentation, virtual networking, etc, to enhance and advance the international collaboration.*

III. AWARD INFORMATION

The estimated number of awards is 20 to 30, depending on quality of proposals and availability of funds. The total anticipated funding amount is $2,500,000 to $4,000,000 in FY2012. Estimated total funding, number of awards and average award size/duration are subject to quality of proposals and availability of funds. Awards may be standard or continuing grants.

IV. ELIGIBILITY INFORMATION

Organization Limit:

Proposals may only be submitted by the following:

- Universities and Colleges - Universities and two- and four-year colleges (including community colleges) accredited in, and having a campus located in the US, acting on behalf of their faculty members. Such organizations also are referred to as academic institutions.

PI Limit:

The PI and Co-PI(s) must hold a position at an eligible US institution. NSF will not accept proposals from investigators at non-US institutions.

Limit on Number of Proposals per Organization:

None Specified

Limit on Number of Proposals per PI: 1

An investigator may participate as PI or co-PI in only one proposal submitted in response to this solicitation. Also, an investigator may serve as PI or Co-PI in either (a) a proposal submitted in response to this solicitation or, (b) an unsolicited proposal submitted to the Division of Materials Research within the FY2012 DMR submission window (see http://www.nsf.gov/materials for the submission window of unsolicited proposals to DMR), but not both.

Additional Eligibility Info:

This solicitation calls for research and education international collaborative projects in program areas that are supported by the Division of Materials Research (DMR): condensed matter physics, solid state and materials chemistry, polymers, biomaterials, metals and metallic nanostructures, ceramics, electronic and photonic materials, and condensed matter and materials theory. Proposals submitted in response to the solicitation are evaluated within the context of the appropriate aforementioned programs in DMR. Investigators are strongly advised to contact NSF staff listed in this solicitation to ascertain that the planned research fits the scope of the solicitation. Proposals not appropriate for consideration by DMR will be returned without review.

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

Full Proposal Preparation Instructions: Proposers may opt to submit proposals in response to this Program Solicitation via Grants.gov or via the NSF FastLane system.

- Full proposals submitted via FastLane: Proposals submitted in response to this program 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/publications/pub_summ.jsp?ods_key=gpg. Paper copies of the GPG may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from nsfpubs@nsf.gov. Proposers are reminded to identify this program solicitation number in the program solicitation block on the NSF 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.

- Full proposals submitted via Grants.gov: Proposals submitted in response to this program solicitation via Grants.gov should be prepared and submitted in accordance with the NSF Grants.gov Application Guide: A Guide for the Preparation and Submission of NSF Applications via Grants.gov. The complete text of the NSF Grants.gov Application Guide is available on the Grants.gov website and on the NSF website at: (http://www.nsf.gov/publications/pub_summ.jsp?ods_key=grantsgovguide). To obtain copies of the Application Guide and Application Forms Package, click on the Apply tab on the Grants.gov site, then click on the Apply Step 1: Download a Grant Application Package and Application Instructions link and enter the funding opportunity number, (the program solicitation number without the NSF prefix) and press the Download Package button. Paper copies of the Grants.gov Application Guide also may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from nsfpubs@nsf.gov.

In determining which method to utilize in the electronic preparation and submission of the proposal, please note the following:

Collaborative Proposals. All collaborative proposals submitted as separate submissions from multiple organizations must be submitted via the NSF FastLane system. Chapter II, Section D.4 of the Grant Proposal Guide provides additional information on collaborative proposals.

Requests for additional funding (supplement) by a US Principal Investigator to an existing NSF award may not be submitted in response to this solicitation; such requests should be made directly through the program where the existing award is managed.

Proposals from foreign investigators should be submitted to the appropriate counterpart funding organization in accordance with the guidelines of that organization. Similarly, proposals seeking USAID support for the work of participants in developing countries where USAID operates should be submitted to the third party organization that manages the USAID program which will support the developing country participants. Because application guidelines may differ among the participating organizations, it may or may not be possible to submit identical proposals to NSF and the counterpart organization(s). However, the proposal to NSF should clearly describe the contribution of the foreign participants in the Project Description as noted below.

Proposals submitted in response to this solicitation must comply with proposal preparation guidelines in the NSF Grant Proposal Guide

(GPG). A deviation from the page limitation for the Project Description is hereby authorized as described below. The following guidelines, in addition to those in the GPG, should be followed in preparing the proposal to NSF:

1. The title of the proposal to NSF should begin as: "Materials World Network: ... "
2. The participating foreign countries should be listed in the cover sheet under "International Cooperative Activities".
3. The duration of the project proposed to NSF should match the duration of the counterpart project proposed to the other funding organization(s).
4. The Project Summary must address in separate statements the intellectual merit and the broader impacts of the proposed activity and, within the context of these two statements, the value added by the proposed international collaboration.
5. The Project Description may not exceed 17 pages. As indicated in the GPG, the Project Description must include a section on Results from Prior NSF Support, which is limited to a maximum of 5 pages. The Project Description must clearly describe the work to be undertaken by US and foreign participants in an integrated fashion. The Project Description must also include a specific summary of the proposed interaction, stating the anticipated scientific benefits of the interaction and not to exceed 2 pages. Within these 2 pages the plans for involving students, postdoctoral associates, and junior researchers in general in the international research activities must be clearly described and appropriate resources must be allocated in the budget request for this purpose.
6. The Biographical Sketches section must include biographical sketches or curriculum vitae of the foreign senior investigators, including significant publications related to the proposed project. *As for US participants, these must include the investigators' thesis and postdoctoral advisors, thesis recipients and postgraduate scholars sponsored, as well as a list of collaborators* (Limit: 2 pages per individual).
7. The proposal to NSF must include information clearly identifying the corresponding counterpart proposal. This information must be entered into the "Supplementary Docs" section of the proposal to NSF. *For each counterpart proposal* include: name of the counterpart agency or agencies, names and affiliations of principal participants, the counterpart project title and identification code (if any), date of proposal submission, requested funds, and requested start and termination dates. Equivalent information must be provided for proposals for collaboration with researchers in developing countries where the developing country participants are currently receiving or in the process of seeking support from USAID. The counterpart organization in this case would be the third party that manages the USAID program which supports the developing country participants.
8. No letters of support or recommendation may be included.

Proposals not complying with the above preparation guidelines will be returned without review.

B. Budgetary Information

Cost Sharing: Inclusion of voluntary committed cost sharing is prohibited

Other Budgetary Limitations: Budgets cannot include funds for subawards to non-US institutions.

C. Due Dates

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

  November 10, 2011

D. FastLane / Grants.gov Requirements

- For Proposals Submitted Via FastLane:

  Detailed technical instructions regarding the technical aspects of preparation and submission via FastLane are available at: https://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 solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this funding opportunity.

  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. Further instructions regarding this process are available on the FastLane Website at: https://www.fastlane.nsf.gov/fastlane.jsp.

- For Proposals Submitted Via Grants.gov:

  Before using Grants.gov for the first time, each organization must register to create an institutional profile. Once registered, the applicant's organization can then apply for any federal grant on the Grants.gov website. Comprehensive information about using Grants.gov is available on the Grants.gov Applicant Resources webpage: http://www07.grants.gov/applicants/app_help_reso.jsp. In addition, the NSF Grants.gov Application Guide provides additional technical guidance regarding preparation of proposals via Grants.gov. For Grants.gov user support, contact the Grants.gov Contact Center at 1-800-518-4726 or by email: support@grants.gov. The Grants.gov Contact Center answers general technical questions related to the use of Grants.gov. Specific questions related to this program solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this solicitation.

  Submitting the Proposal: Once all documents have been completed, the Authorized Organizational Representative (AOR) must submit the application to Grants.gov and verify the desired funding opportunity and agency to which the application is submitted. The AOR must then sign and submit the application to Grants.gov. The completed application will be transferred to the NSF FastLane system for further processing.

VI. NSF PROPOSAL PROCESSING AND REVIEW PROCEDURES

Proposals received by NSF are assigned to the appropriate NSF program where they will be reviewed if they meet NSF proposal preparation requirements. All proposals are carefully reviewed by a scientist, engineer, or educator serving as an NSF Program Officer, and usually by three to ten other persons outside NSF who are experts in the particular fields represented by the proposal. These reviewers are selected by Program Officers charged with the oversight of the review process. Proposers are invited to suggest names of persons they believe are especially well qualified to review the proposal and/or persons they would prefer not review the proposal. These suggestions may serve as one source in the reviewer selection process at the Program Officer's discretion. Submission of such names, however, is optional. Care is taken to ensure that reviewers have no conflicts of interest with the proposal.

A. NSF Merit Review Criteria

All NSF proposals are evaluated through use of the two National Science Board (NSB)-approved merit review criteria: intellectual merit and the broader impacts of the proposed effort. In some instances, however, NSF will employ additional criteria as required to highlight the specific objectives of certain programs and activities.

The two NSB-approved merit review criteria are listed below. 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 the reviewer 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, original, or potentially transformative 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?

Examples illustrating activities likely to demonstrate broader impacts are available electronically on the NSF website at: http://www.nsf.gov/pubs/gpg/broaderimpacts.pdf.

Mentoring activities provided to postdoctoral researchers supported on the project, as described in a one-page supplementary document, will be evaluated under the Broader Impacts criterion.

Additional Solicitation Specific Review Criteria

Reviewers will also take into consideration the value added by the proposed international collaboration in materials and condensed matter research, and the extent to which the collaboration integrates research and education, broadens the participation of underrepresented groups, and creatively addresses the broader impacts review criterion. *Preference will be given to proposals where the intellectual efforts in the US and abroad are balanced and where students and junior researchers participate in international research experiences.*

NSF staff also 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.

B. Review and Selection Process

Proposals submitted in response to this program solicitation will be reviewed by Ad hoc Review 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.

Representatives from NSF's Division of Materials Research will manage the review of proposals on the US side, either in parallel or jointly with participating funding organizations abroad. Information about proposals will be shared between participating organizations as appropriate. In the case of a joint, single review process as with the EPSRC in the United Kingdom and the DFG in Germany, the proposals and their reviews will be shared with the foreign funding organization. The participating funding organizations understand NSF confidentiality policy regarding proposals and reviews. Coordinated support will be arranged for successful proposals by the participating organizations. While each side reserves the option to fund proposals independently, strong preference will be given to proposals with support from both NSF and the counterpart organization.

After scientific, technical and programmatic review and consideration of appropriate factors, the NSF Program Officer recommends to the cognizant Division Director whether the proposal should be declined or recommended for 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 deadline or target date, or receipt date, whichever is later. The interval ends when the Division Director accepts the Program Officer's

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 Officer. In addition, the proposer will receive an explanation of the decision to award or decline funding.

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 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.B. 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 (GC-1); * or Research Terms and Conditions * and (5) any announcement or other NSF issuance that may be incorporated by reference in the award letter. Cooperative agreements also are administered in accordance with NSF Cooperative Agreement Financial and Administrative Terms and Conditions (CA-FATC) and the applicable Programmatic Terms and Conditions. NSF awards are electronically signed by an NSF Grants and Agreements Officer and transmitted electronically to the organization via e-mail.

*These documents may be accessed electronically on NSF's Website at http://www.nsf.gov/awards/managing/award_conditions.jsp?org=NSF. Paper copies may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from nsfpubs@nsf.gov.

More comprehensive information on NSF Award Conditions and other important information on the administration of NSF awards is contained in the NSF *Award & Administration Guide* (AAG) Chapter II, available electronically on the NSF Website at http://www.nsf.gov/publications/pub_summ.jsp?ods_key=aag.

C. Reporting Requirements

For all multi-year grants (including both standard and continuing grants), the Principal Investigator must submit an annual project report to the cognizant Program Officer at least 90 days before the end of the current budget period. (Some programs or awards require more frequent project reports). Within 90 days after expiration of a grant, the PI also is required to submit a final project report, and a project outcomes report for the general public.

Failure to provide the required annual or final project reports, or the project outcomes report will delay NSF review and processing of any future funding increments as well as any 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. Such reports provide information on activities and findings, project participants (individual and organizational), 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. Submission of the report via FastLane constitutes certification by the PI that the contents of the report are accurate and complete. The project outcomes report must be prepared and submitted using Research.gov. This report serves as a brief summary, prepared specifically for the public, of the nature and outcomes of the project. This report will be posted on the NSF website exactly as it is submitted by the PI.

VIII. AGENCY CONTACTS

Please note that the program contact information is current at the time of publishing. See program website for any updates to the points of contact.

General inquiries regarding this program should be made to:

- Michael J. Scott, 1065 N, telephone: (703) 292-4771, email: mjscott@nsf.gov
- Carmina Londono, 1065 N, telephone: (703) 292-7053, email: clondono@nsf.gov

For questions related to the use of FastLane, contact:

- FastLane Help Desk, telephone: 1-800-673-6188; e-mail: fastlane@nsf.gov.
- William P. Daniels, 1065 N, telephone: (703) 292-4755, email: wdaniels@nsf.gov

For questions relating to Grants.gov contact:

- Grants.gov Contact Center: If the Authorized Organizational Representatives (AOR) has not received a confirmation message from Grants.gov within 48 hours of submission of application, please contact via telephone: 1-800-518-4726; e-mail: support@grants.gov.

Contacts at other organizations:

Contact information in participating countries or regions is provided for the convenience of researchers in those countries or regions. Questions from US investigators should be directed to NSF.

Contacts in Africa:

KENYA	Kenya National Academy of Sciences http://www.knascience.org/ P.O. Box 39450-00623, Nairobi, Kenya Tel: 254-020-3111714; Fax: 254-020-311715 Professor Joseph Otieno Malo; Professor Felix M. Luti P.O. Box 30197-00100 GPO Nairobi boaduda@uonbi.ac.ke
TANZANIA	Tanzania Commission for Science and Technology http://www.costech.or.tz/ Ali Hassan Mwinyi Road; Kijitonyama P.O. Box 4302 Dar es Salaam, Tanzania Dr. Hassan Mshinda, Director General Tel: 255-22-2700750; 255-784-782210 (mobile); Fax: 255-22-2775313/3 hmshinda@costech.or.tz; dg@costech.or.tz
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UGANDA	National Council for Science and Technology http://www.uncst.go.ug/ Plot 6, KimeraRoad P.O. Box 6884, Kampala, Uganda Dr. Peter Ndemerere, Executive Secretary Tel: 256-414-705500; Fax: 256-414-234579; info@uncst.ug
ZIMBABWE	Ministry of Science and Technology Development Livingstone House, 48 Samora Machel Ave., P.O. Box 2265, Harare, Zimbabwe Dr. Francis P. Gudyanga, Permanent Secretary Tel: 263 4 792490; Cell: +263-712-871163, +262-916-222165 fpgudyanga@zarnet.ac.zw; francis.gudyanga@gmail.com

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AUSTRIA	Austrian Science Fund (FWF) http://www.fwf.ac.at/en/index.asp Sensengasse 1; A - 1090 Vienna Dr. Doris Rakoczy, Scientific Administrator Tel.: +43 1 505 67 40 8403, doris.rakoczy@fwf.ac.at
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FRANCE	Agence Nationale de la Recherche (ANR) http://www.agence-nationale-recherche.fr/

	212, rue de Bercy F-75012 Paris, France Dr. Isabelle Morelon; Tel: +33 1 78 09 80 54; Nakita.vodjdani@agencerecherche.fr Dr. Jean-Pierre Chevalier; Tel: +33 1 78 09 81 14; jean-pierre.chevalier@agencerecherche.fr
GERMANY	Deutsche Forschungsgemeinschaft http://www.dfg.de/en/index.html Kennedyallee 40, D-53175 Bonn, Germany Dr. Michael Moessle, Program Director for Condensed Matter Physics Tel +49 28/8 85-2351; michael.moessle@dfg.de Other German Organizations Will be coordinated through Dr. Michael Moessle
GREECE	General Secretariat for Research and Technology http://www.gsrt.gr/ 14-18 Messogeion Avenue, 115 10 Athens, Greece Kelly Vavasi, Senior Project Officer International Science and Technology Cooperation Directorate Tel: +30 210 7702822, +30 210 7458113; fax: +30 210 7714153; kvavasi@gsrt.gr
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POLAND	Narodowe Centrum Nauki (Natinoal Science Centre of Poland) Ul. Królewska 57 30-081 Kraków, Poland Anna Plater-Zyberk, International Relations Officer Tel: 00 48 12 341 90 28, anna.plater@ncn.gov.pl
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RUSSIAN FEDERATION	Russian Foundation for Basic Research (RFBR) http://www.rfbr.ru/ 32a, Leninsky prospect, 11991, Moscow, Russia Maria Baktysheva, Head Expert, International Relations Department Tel: 7 (495) 938-56-24; Fax: 7 (495) 938-54-56; prokhor@rfbr.ru
SLOVENIA	Slovenian Researh Agency (ARRS) http://www.arrs.gov.si/en/dobrodoslica.asp Bleiweisova cesta 30, 100 Ljubljana, Slovenia Dr. Primož Pristovše Head of Department for International Cooperation Tel./Fax: +386-(0)1-400 5971/5; primoz.pristovsek@arrs.si
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THE NETHERLANDS	Foundation for Fundamental Research on Matter (FOM) http://www.fom.nl/ Postbus 3021, 3502 GA Utrecht, The Netherlands Dr. Floor van de Pavert, Program Officer Tel: +31-30-6001222, Fax: +31-30-6014406 floor.van.de.pavert@fom.nl
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Contacts in Asia:

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Dr. Chen Kexin, Division of Inorganic Non-Metallic Materials
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chenkx@mail.nsfc.gov.cn
Chinese researchers must check with NSFC regarding eligible topical areas at NSFC.

JAPAN

Japan Society for the Promotion of Science (JSPS)
http://www.jsps.go.jp/english/index.html
Ms. Helga Tabuchi, Head, Research Cooperation Division I
International Program Department
8 Ichibancho, Chiyoda-ku, Tokyo 102-8471, Japan
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New Energy and Industrial Technology Development Organization (NEDO)
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Japan Science and Technology Agency (JST)
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TAIWAN

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IX. OTHER INFORMATION

The NSF Website provides the most comprehensive source of information on NSF Directorates (including contact information), programs and funding opportunities. Use of this Website by potential proposers is strongly encouraged. In addition, National Science Foundation Update is a free e-mail subscription service designed to keep potential proposers and other interested parties apprised of new NSF funding opportunities and publications, important changes in proposal and award policies and procedures, and upcoming NSF Regional Grants Conferences. Subscribers are informed through e-mail when new publications are issued that match their identified interests. Users can subscribe to this service by clicking the "Get NSF Updates by Email" link on the NSF web site.

Grants.gov provides an additional electronic capability to search for Federal government-wide grant opportunities. NSF funding opportunities may be accessed via this new mechanism. Further information on Grants.gov may be obtained at http://www.grants.gov.

Related Programs:

International Collaboration in Chemistry between U.S. Investigators and Investigators and their Counterparts Abroad (ICC), http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13627&org=CHE&from=home

Catalyzing New International Collaborations, http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=12815&org=OISE&from=home

Research Experiences for Undergraduates (REU), http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5517&from=fund

Pan-American Advanced Studies Institutes Program, http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5327&org=NSF&sel_org=NSF&from=fund

East Asia and Pacific Summer Institutes for U.S. Graduate Students, http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5284&org=NSF&sel_org=NSF&from=fund

International Research Fellowship Program, http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5179&org=NSF&sel_org=NSF&from=fund

Partnerships for International Research and Education (PIRE), http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=12819

Research Coordination Networks (RCN), http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=11691

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- For General Information (NSF Information Center): (703) 292-5111
- TDD (for the hearing-impaired): (703) 292-5090
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Associated Records," 69 Federal Register 26410 (May 12, 2004), and NSF-51, "Reviewer/Proposal File and Associated Records," 69 Federal Register 26410 (May 12, 2004). 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 Office of Management and Budget (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 the burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to:

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