International Collaboration in Chemistry between US Investigators and their Counterparts Abroad (ICC)

PROGRAM SOLICITATION
NSF 12-562

REPLACES DOCUMENT(S):
NSF 11-585

National Science Foundation

Directorate for Mathematical & Physical Sciences
Division of Chemistry

Preliminary Proposal Due Date(s) ***(required)*** (due by 5 p.m. proposer's local time)***:***

August 01, 2012

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

October 16, 2012

IMPORTANT INFORMATION AND REVISION NOTES

Revision Summary

The deadlines for preliminary and full proposal have changed this year to match the ICC deadline for full proposal submission, with the window for submission of unsolicited proposals to the NSF Division of Chemistry (CHE). US PIs may submit an ICC or an unsolicited proposal to the Division of Chemistry but not both. The ICC program will not accept proposals from US investigators who already have individual investigator awards from the division unless their ICC proposal is submitted in lieu of a renewal proposal. Current CHE awardees may submit a supplemental funding request to add an international collaboration component to their existing awards.

The Deutsche Forschungsgemeinschaft (DFG) and The Engineering and Physical Sciences Research Council (EPSRC) of the United Kingdom (UK) are not listed as partnering agencies this year. US investigators who wish to collaborate with German or UK Investigators may still do so by submitting an unsolicited proposal to the Division of Chemistry during the window for proposal submission to the Division. Collaborative proposals with German and UK collaborators will be reviewed in the same manner as ICC proposals. If an award is made, the NSF will fund the US and the DFG or EPSRC will fund the German or UK part of the collaboration. Information about the German or UK collaborator will be provided in a supplementary document to the unsolicited NSF proposal. The foreign collaborator should contact the DFG or EPSRC chemistry websites for detailed information about the required supplementary document.

Spain (MICINN) does not participate in the ICC program this year. Israel (BSF) is added as a new partner.

The ICC program will give higher priority to proposed projects in the area of sustainable chemistry. Examples of sustainable chemistry focus areas include but are not limited to: 1) new chemistry that will replace rare, expensive and/or toxic chemicals and nanomaterials with earth abundant, inexpensive and benign chemicals and nanomaterials; 2) new chemistry to economically recycle chemicals that cannot be replaced, such as phosphorus and the rare earth elements; 3) new chemistry to convert non-petroleum based sources of organics to feedstock chemicals; 4) new environmentally friendly chemical reactions and processes that require less energy, water, and organic solvents than current practice.

Important Reminders

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:

International Collaboration in Chemistry between US Investigators and their Counterparts Abroad (ICC)

Synopsis of Program:

Partnering Foreign Agencies

The Fonds zur Förderung der wissenschaftlichen Forschung (FWF; Austrian Science Fund) of Austria
The Fundacao de Amparo a Pesquisa do Estado de Sao Paulo (Sao Paulo Research Foundation), Brazil (FAPESP)
The Agence Nationale de la Recherche (ANR; National Research Agency) of France
U.S. - Israel Binational Science Foundation (BSF)
Japan Society for the Promotion of Science (JSPS)
The Fonds National de la Recherché (FNR; National Research Fund) of Luxembourg
Russian Foundation for Basic Research (RFBR)
Taiwan National Science Council (NSC)

Program Description

The National Science Foundation (NSF) seeks to enhance opportunities for collaborative activities between U.S. and foreign investigators. To realize this goal, the Division of Chemistry at NSF has partnered with the Fonds zur Förderung der wissenschaftlichen Forschung (FWF; Austrian Science Fund) of Austria, the Fundacao de Amparo a Pesquisa do Estado de Sao Paulo (Sao Paulo Research Foundation) of Brazil (FAPESP), the Agence Nationale de la Recherche (ANR; National Research Agency) of France, the U.S.-Israel Binational Science Foundation (BSF)of Israel, Japan Society for the Promotion of Science (JSPS), the Fonds National de la Recherche (FNR; National Research Fund) of Luxembourg, the Russian Foundation for Basic Research (RFBR), and the National Science Council of Taiwan (NSC). The NSF Division of Chemistry will accept collaborative research proposals in basic research in chemistry, written in English, which establish bilateral collaborations between US investigators and investigators from the countries listed above.

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.

- Dr. Zeev Rosenzweig, Program Director, telephone: (703) 292-7719, email: zrosenzw@nsf.gov
- Dr. James Lisy, Program Director, telephone: (703) 292-2251, email: jlisy@nsf.gov
- Ms. C. Renee Wilkerson, telephone: (703) 292-4948, email: cwilkers@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: 10 to 40

Anticipated Funding Amount: $10,000,000 for all awards. Based on results from prior competitions we anticipate a funding rate of about 20% with an average award size of $420,000 for three years (total cost). The exact number of awards and total funding depend on the 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.
- Non-profit, non-academic organizations: Independent museums, observatories, research labs, professional societies and similar organizations in the U.S. associated with educational or research activities.

PI Limit:

US PIs may submit an ICC or an unsolicited proposal to the Division of Chemistry in 2012 but not both.

The ICC Program will not accept proposals from US investigators who already have an individual investigator award from the Division of Chemistry unless their ICC proposal is submitted as their renewal proposal. Division of Chemistry grantees who wish to add an international collaboration component to their currently funded projects are advised to contact the program directors who manage their award and inquire about supplemental funding to their existing awards to enable the international collaboration.

Limit on Number of Proposals per Organization:

None Specified

Limit on Number of Proposals per PI: 1

A US investigator may participate (as a PI, Co-PI or other senior personnel) in only one proposal submitted in response to this solicitation.

Proposal Preparation and Submission Instructions

A. Proposal Preparation Instructions

- Letters of Intent: Not Applicable
- Preliminary Proposals: Submission of Preliminary Proposals is required. Please see the full text of this solicitation for further information.
- 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: Not Applicable

C. Due Dates

- Preliminary Proposal Due Date(s) ***(required)*** (due by 5 p.m. proposer's local time)***:***

  August 01, 2012

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

  October 16, 2012

Proposal Review Information Criteria

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.

TABLE OF CONTENTS

I. INTRODUCTION

Recognizing the importance of international collaborations in promoting scientific discoveries, the National Science Foundation (NSF) and its counterpart agencies abroad seek to enhance opportunities for collaborative activities in chemistry between US and foreign investigators. The NSF Division of Chemistry will accept new bilateral collaborative research proposals, which are not currently funded by other sources, with each of the partnering agencies listed above. The proposals should establish partnerships between US researchers and researchers from one of the following countries: Austria, Brazil, France, Israel, Japan, Luxembourg, Russia, and Taiwan. The proposed projects must have clear relevance to areas supported by the Division of Chemistry at NSF and by the participating programs in the partnering countries.

In previous years, many preliminary proposals were discouraged since the proposed projects were suitable for other funding agencies rather than for NSF, or for other NSF divisions. Prospective PIs are strongly encouraged to contact appropriate program directors in the division to discuss the suitability of their proposed research to their programs and the chemistry division prior to preliminary proposal submission.

II. PROGRAM DESCRIPTION

The National Science Foundation (NSF) seeks to enhance opportunities for collaborative activities between U.S. and foreign investigators. To realize this goal, the Division of Chemistry at NSF has partnered with the Fonds zur Förderung der wissenschaftlichen Forschung (FWF; Austrian Science Fund) of Austria, the Agence Nationale de la Recherche (ANR; National Research Agency) of France, the Fundacao de Amparo a Pesquisa do Estado de Sao Paulo (Sao Paulo Research Foundation) of Brazil (FAPESP), the U.S. - Israel Binational Science Foundation (BSF) of Israel, Japan Society for the Promotion of Science (JSPS), the Fonds National de la Recherche (FNR; National Research Fund) of Luxembourg, the Russian Foundation for Basic Research (RFBR), and the National Science Council of Taiwan (NSC). The NSF Division of Chemistry will accept collaborative research proposals in basic research in chemistry, written in English, which establish bilateral collaborations between US investigators and investigators from the countries listed above.

The program seeks new and highly innovative 3-year collaborative projects that break new ground, make use of unique resources and capabilities in participating countries and demonstrate a high level of synergy between the collaborating investigators. Formation of new collaborations is strongly encouraged. The ICC program will not accept proposals from US Investigators who already have individual investigator awards from the Division of Chemistry unless their ICC proposal is submitted in lieu of a renewal proposal. Current CHE grantees may submit a supplement funding request to add an international collaboration component to their existing awards.

The ICC program will only accept basic research proposals that clearly fit to the NSF Division of Chemistry programs in Chemical Synthesis; Chemical Catalysis; Theory, Models and Computational Methods; Chemical Measurement and Imaging; Chemical Structure, Dynamics and Mechanisms; Macromolecular, Supramolecular and Nanochemistry; Environmental Chemical Sciences; or Chemistry of Life Processes. A detailed description of these programs can be found at: http://www.nsf.gov/div/index.jsp?div=CHE . In previous years, many preliminary proposals were discouraged since the proposed projects were suitable for other agencies or other NSF divisions. Prospective PIs are therefore strongly encouraged to contact program directors in the division of chemistry to discuss and confirm the suitability of their proposed research to a specific individual investigator program in the division prior to preliminary proposal submission. The proposed projects must also be in areas that are supported by the participating programs in the partnering agencies.

The ICC program will give higher priority to proposed projects in the area of sustainable chemistry. Examples of sustainable chemistry focus areas include but are not limited to: 1) new chemistry that will replace rare, expensive and/or toxic chemicals and nanomaterials with earth abundant, inexpensive and benign chemicals and nanomaterials; 2) new chemistry to economically recycle chemicals that cannot be replaced, such as phosphorus and the rare earth elements; 3) new chemistry to convert non-petroleum based sources of organics to feedstock chemicals; 4) new environmentally friendly chemical reactions and processes that require less energy, water, and organic solvents than current practice.

Investigators who have been collaborators must demonstrate in the preliminary proposal and full proposal (if encouraged) that the proposed project represents a new research direction for the collaborative team and is not a continuation of long term on-going studies. The program will not accept proposals for projects that largely overlap with currently funded projects by NSF or other funding sources, or for projects that are an incremental extension of current projects.

The ICC program requires that US applicants will allocate significant financial resources in their proposed proposal budget to ensure meaningful participation of students, postdoctoral research associates and junior investigators, including those from underrepresented groups, in the proposed international research collaborations through extended research visits of 3-10 weeks in the collaborator's laboratory abroad. The program also encourages the development and use of cyber infrastructure to increase the level of synergy of the proposed projects.

III. AWARD INFORMATION

Anticipated Type of Award: Continuing Grant or Standard Grant

Estimated Number of Awards: 10 to 40

Anticipated Funding Amount: Based on results from prior competitions we anticipate a funding rate of about 20% with an average award size of $420,000 for three years (total cost).

Estimated program budget, number of awards and average size/duration are subject to the availability of funds.

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.
- Non-profit, non-academic organizations: Independent museums, observatories, research labs, professional societies and similar organizations in the U.S. associated with educational or research activities.

PI Limit:

US PIs may submit an ICC or an unsolicited proposal to the Division of Chemistry in 2012 but not both.

The ICC Program will not accept proposals from US investigators who already have an individual investigator award from the Division of Chemistry unless their ICC proposal is submitted as their renewal proposal. Division of Chemistry grantees who wish to add an international collaboration component to their currently funded projects are advised to contact the program directors who manage their award and inquire about supplemental funding to their existing awards to enable the international collaboration.

Limit on Number of Proposals per Organization:

None Specified

Limit on Number of Proposals per PI: 1

A US investigator may participate (as a PI, Co-PI or other senior personnel) in only one proposal submitted in response to this solicitation.

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

Preliminary Proposals ***(required)***: Preliminary proposals are required and must be submitted via the NSF FastLane system.

Preliminary Proposal Submission Requirements
Preliminary proposals must be submitted to NSF by the US Investigator. The same preliminary proposal must be submitted to the partnering funding agency by the foreign investigator unless noted otherwise in the foreign agency call for this program. Foreign investigators must follow the instructions for preliminary proposal and full proposal preparation and submission that are given in the foreign agencies' separate calls for this collaborative program.

Preliminary Proposal Content and Page Limit
Preliminary proposals must adhere to the general guidelines described in NSF's Grant Proposal Guide (GPG), except as specified below. One preliminary proposal per project should be submitted.

Cover sheet - The title of the proposal to NSF should begin as: "International Collaboration in Chemistry:..." In addition, the US PI should check the box, "International Cooperative Activities" listed under Other Information and identify the appropriate country involved. The cover sheet should identify the Division of Chemistry program to consider the application and list the names and affiliations of the US investigators. The PI must select the option indicating that this is a preliminary proposal. For correct FastLane processing, enter $2 as the requested amount.

Project Description, limited to 3 pages, should include the following sections:

Section 1 - List the name, affiliations and contact information (phone number and e-mail address) of the foreign investigator(s).

Section 2 - List the Division of Chemistry program to which the preliminary proposal is submitted, explain why the proposed project is appropriate to this NSF/CHE program.

Section 3 - Describe the proposed research problem, key preliminary results and an outline of the research plan (at least one page).

Section 4 - Describe the role and expertise of each collaborative investigator, the collaborative approach to be used and the expected synergy.

Section 5 - Describe a plan to facilitate meaningful involvement of students, postdoctoral researchers and junior investigators in the proposed project including international training experience.

References Cited may contain up to 10 leading references to provide context for the proposed research. The reference section will not count against the 3-page limit of the preliminary proposal project description.

For the US investigator, a Biographical Sketch should be submitted using the NSF standard format specified in the GPG. For the foreign investigator, the biographical sketch should be limited to 2 pages and be a part of a FastLane supplementary document.

For the US investigator, a Current and Pending Support statement should be submitted using the NSF standard format specified in the GPG. For the foreign investigator the information about current and pending support should be a part of a FastLane supplementary document.

The remaining standard proposal sections (Project Summary, Budget, Budget Justification, Facilities and Equipment) are not required in this preliminary proposal. Other supporting documentation including preprints or reprints and letters of support or collaboration are not permitted in this preliminary proposal.

Preliminary Proposal Review Procedure
The preliminary proposals will be reviewed by NSF and the partnering foreign agencies. At NSF, the preliminary proposals will be reviewed programmatically for their fit to NSF and specifically to the NSF Division of Chemistry in terms of scientific content. The Division of Chemistry at NSF will only accept preliminary proposals in areas that are supported by its programs in Chemical Synthesis, Chemical Catalysis, Chemical Theory, Models and Computational Methods, Chemical Imaging and Measurement, Chemical Structure, Dynamics and Mechanisms Macromolecular Supramolecular and Nanochemistry, Environmental Chemical Sciences or Chemistry of Life Processes. A detailed description of these programs can be found at:
http://www.nsf.gov/div/index.jsp?div=CHE

The preliminary proposals will also be reviewed to ensure that the proposed projects do not significantly overlap with projects that are already funded by NSF or other US funding agencies. The programs will discourage submission of full proposals if the proposed research is considered an incremental advance over currently funded research in the US PI's lab. US PIs of previously declined ICC proposals should confirm with their foreign collaborators that the foreign agency is willing to accept a revised submission of the proposal. If allowed by the foreign agency, preliminary proposals of previously declined projects should provide a summary of changes made to the proposal in response to reviewer comments. A declined project must be significantly modified to be considered for full proposal submission. Preliminary proposals of renewal ICC projects should provide a summary of previous accomplishments including a list of collaborative publications and provide a rationale for the renewal of the collaborative project. Upon completion of the review of the preliminary proposals, NSF and the appropriate partnering agency will make a joint decision whether to encourage or discourage submission of full proposals to the program. Investigators will be notified of the decision 60 days prior to the full proposal submission deadline whenever possible.

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.

Full proposals will be submitted by the US organizations through Fastlane or Grants.gov. The following guidelines, in addition to those in the GPG or NSF Grants.gov Application Guide, should be followed when preparing the proposal to NSF:

- In the proposal cover sheet, the title of the proposal to NSF should begin as: "International Collaboration in Chemistry:..." In addition, the US PI should check box, International Cooperative Activities listed under Other Information and identify the appropriate country involved.
- The duration of the project would typically be 3 years for the US and foreign side of the collaboration.
- The Project Summary, which is limited to 1 page, must address in separate statements the intellectual merit and the broader impacts of the proposed activity and the value added of the proposed international collaboration.
- The Project Description may not exceed 15 pages. A separate section that lists the names, affiliations and contact information (phone number and e-mail address) of the foreign investigator(s) should be included in the first page of the project description.
- As indicated in the NSF Grant Proposal Guide (GPG) and NSF Grants.gov Application Guide, the Project Description must include a section on Results from Current/Prior NSF Support, which is limited to a maximum of 5 pages. Potential applicants are advised that proposals without a section describing results from current/previous NSF support will be returned without review.
- The project description should clearly state the need and anticipated scientific benefits of the proposed international

collaboration and clearly describe the intellectual contribution of each collaborator to the proposed project along with a timeline of their proposed research work. In addition, the Project Description must address the ICC solicitation requirement to meaningfully involve students, postdoctoral research associates and junior investigators, including those from under represented groups, in the proposed research collaborations through extended research visits in the collaborator's laboratory abroad.

- Information pertinent to the foreign investigator will be submitted as a single supplementary document through NSF FastLane or Grants.gov. This supplementary document must contain the foreign investigator's budget request from the partnering agency, a current and pending support list, a list of resources (equipment and facilities) available for this collaborative project, and a 2-page biographical sketch, which includes a list of collaborators, doctoral and postdoctoral advisors, and current and former students and postdoctoral fellows. Some partnering agencies require that the supplementary document will contain additional information. For example, the NSF supplementary document of NSF-JSPS proposals will be the entire JSPS proposal submission. US applicants are therefore advised that their foreign collaborators must follow the guidelines of their agencies, as listed in their ICC solicitation, when preparing their supplementary document.
- US PIs must provide a postdoctoral mentoring plan as a supplementary document if funds for postdoctoral researchers are requested in the proposal budget and a data management plan in accordance with the NSF Grant Proposal Guidelines (GPG).
- US PIs are advised to make sure that their foreign collaborators consult their agencies' corresponding solicitations to find out whether they are eligible to submit a proposal to the ICC program, whether a separate submission of the proposal to their agency is required and what the submission requirements are. The proposal will be returned without review if the foreign collaborator is not eligible to participate in the ICC program or if s/he fails to follow the guidelines of his/her funding agency.

B. Budgetary Information

Cost Sharing: Inclusion of voluntary committed cost sharing is prohibited

C. Due Dates

- Preliminary Proposal Due Date(s) ***(required)*** (due by 5 p.m. proposer's local time)***:***

  August 01, 2012

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

  October 16, 2012

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 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, 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

In addition to the two NSB-approved merit review criteria, the reviewers will be asked to specifically comment on whether the researchers demonstrated a clear need for international collaboration, the synergy between the collaborating groups, the collaboration plan between the investigators, and whether the proposed project provides meaningful international training experience to students and junior researchers. Foreign investigators will need to address the review criteria of their partnering agency.

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.

After scientific, technical and programmatic review and consideration of appropriate factors, Program Officers in charge from NSF and the partnering agency recommend to the cognizant NSF Division Director and the decision making bodies of the partnering agency 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 date of receipt. The interval ends when the NSF Division Director and the decision making bodies of the partnering agency accept the Program Officers' recommendation. A proposal can only be funded if both NSF and the foreign partnering agency agree to fund it.

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 US Principal Investigator/Project Director by the NSF Program Officer. In addition, the investigators 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:

- Dr. Zeev Rosenzweig, Program Director, telephone: (703) 292-7719, email: zrosenzw@nsf.gov
- Dr. James Lisy, Program Director, telephone: (703) 292-2251, email: jlisy@nsf.gov
- Ms. C. Renee Wilkerson, telephone: (703) 292-4948, email: cwilkers@nsf.gov

For questions related to the use of FastLane, contact:

- FastLane Help Desk, telephone: 1-800-673-6188; e-mail: fastlane@nsf.gov.
- Paul Spyropoulos, Computer Specialist, telephone: 703-292-4968, email: pspyropo@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 and Web links to the ICC Program Announcement at International Partnering Agencies

Austria (FWF)
Dr. Bettina M. Löscher
Scientific Administrator for Chemistry and Nano-Sciences
Fonds zur Förderung der wissenschaftlichen Forschung (FWF, Austrian Science Fund)
Sensengasse 1 A-1090 Wien
Phone: +43 1 505 67 39 8405
e-mail: loescher@fwf.ac.at

FWF ICC Program Announcement
http://www.fwf.ac.at/de/internationales/pdf/ICC-FWF_Information_for_Applicants_2012.pdf

Brazil (FAPESP)
Alexandre Roccatto
Special assistant - Research Collaborations
FAPESP - State of São Paulo Research Foundation
R. Pio XI, 1500 - Alto da Lapa - CEP 05468-901 São Paulo/SP
Tel: (+55) 11 3838-4347
e-mail: aroccatto@fapesp.br

FAPESP ICC Program Announcement
http://www.fapesp.br/en/7035

France (ANR)
Ms. Isabelle Morelon
212, rue de Bercy F-75012 Paris, France
Department of Chemistry and Processes for Sustainable Development
L'Agence Nationale de la Recherche (ANR)
Tel: +33-1 78 09 80 58
e-mail: Isabelle.Morelon@agencerecherche.fr

ANR ICC Program Announcement
http://www.agence-nationale-recherche.fr/magazine/actualites/detail/appels-a-projets-franco-americains-anr-nsf-dans-le-domaine-de-la-chimie-et-des-materiaux/

Israel (BSF)
Dr. Yair Rotstein
Executive Director
U.S. - Israel Binational Science Foundation
8 Hamarpeh Street
P.O.B. 45086
Jerusalem, 91450
Israel
Tel: 972-2-5828239 ext. 105
Fax: 972-2-5828306
e-mail: yair@bsf.org.il

BSF ICC Program Announcement
http://www.bsf.org.il/BSFPublic/DefaultPage1.aspx?PageId=28&innerTextID=28

Japan (JSPS)
Mr. Kiyoshi Saito
Research Cooperation Division I
International Program Department
Japan Society for the Promotion of Science (JSPS)
Tel: +81 (0)3 3263 1810
Fax: +81 (0)3 3263 1673
e-mail: bottom-up@jsps.go.jp

JSPS ICC Program Announcement
http://www.jsps.go.jp/english/e-bottom/01_a_outline.html

Luxembourg (FNR)
Ms. Christiane Kaell
Senior Programme Manager
Fonds National de la Recherche
6, rue Antoine de Saint-Exupéry
P.O. Box 1777 L-1017 Luxembourg
Tel: +352 261925-34 / Fax: +352 261925-35
e-mail: christiane.kaell@fnr.lu

FNR ICC Program Announcement
http://www.fnr.lu/inter

Russia (RFBR)
Ms. Maria Baktysheva
International Relations Department
Russian Foundation for Basic Research
Tel.+7 495 938 56 24
Fax +7 495 938 54 56
e-mail: Prokhor@rfbr.ru

RFBR ICC Program Announcement

http://www.rfbr.ru/rffi/ru/contest/n_520/o_38726

Taiwan (NSC)
Prof. Willis T. Lin
Director General
Department of International Cooperation
National Science Council
tel 886-2-2737-7558
Email: linwt@nsc.gov.tw

and/or

Ms. Jennifer Hu
Program Director
tel: 886-2-2737-7560
Email: jenhu@nsc.gov.tw

NSC ICC Program Announcement
http://www.nsc.gov.tw/int/ct.asp?xItem=20086&ctNode=1212

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.

ABOUT THE NATIONAL SCIENCE FOUNDATION

The National Science Foundation (NSF) is an independent Federal agency created by the National Science Foundation Act of 1950, as amended (42 USC 1861-75). The Act states the purpose of the NSF is "to promote the progress of science; [and] to advance the national health, prosperity, and welfare by supporting research and education in all fields of science and engineering."

NSF funds research and education in most fields of science and engineering. It does this through grants and cooperative agreements to more than 2,000 colleges, universities, K-12 school systems, businesses, informal science organizations and other research organizations throughout the US. The Foundation accounts for about one-fourth of Federal support to academic institutions for basic research.

NSF receives approximately 55,000 proposals each year for research, education and training projects, of which approximately 11,000 are funded. In addition, the Foundation receives several thousand applications for graduate and postdoctoral fellowships. The agency operates no laboratories itself but does support National Research Centers, user facilities, certain oceanographic vessels and Arctic and Antarctic research stations. The Foundation also supports cooperative research between universities and industry, US participation in international scientific and engineering efforts, and educational activities at every academic level.

Facilitation Awards for Scientists and Engineers with Disabilities provide funding for special assistance or equipment to enable persons with disabilities to work on NSF-supported projects. See Grant Proposal Guide Chapter II, Section D.2 for instructions regarding preparation of these types of proposals.

The National Science Foundation has Telephonic Device for the Deaf (TDD) and Federal Information Relay Service (FIRS) capabilities that enable individuals with hearing impairments to communicate with the Foundation about NSF programs, employment or general information. TDD may be accessed at (703) 292-5090 and (800) 281-8749, FIRS at (800) 877-8339.

The National Science Foundation Information Center may be reached at (703) 292-5111.

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 (NSF Information Center): (703) 292-5111
- TDD (for the hearing-impaired): (703) 292-5090
- To Order Publications or Forms:

  Send an e-mail to: nsfpubs@nsf.gov

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; and 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 proposer 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 or other entities needing information regarding applicants or nominees as part of a joint application review process, or in order to coordinate programs or policy; 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," 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:

Suzanne H. Plimpton
Reports Clearance Officer
Division of Administrative Services
National Science Foundation
Arlington, VA 22230