

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

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## PROGRAM SOLICITATION

NSF 08-602

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**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):

November 04, 2008

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

January 30, 2009

## SUMMARY OF PROGRAM REQUIREMENTS

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### General Information

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**Program Title:**

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

**Synopsis of Program:**

**Partnering Foreign Agencies**

The Deutsche Forschungsgemeinschaft (DFG; German Research Foundation) of Germany

The Fonds zur Förderung der wissenschaftlichen Forschung (FWF; Austrian Science Fund) of Austria

The Engineering and Physical Sciences Research Council (EPSRC) of the UK

The National natural Science Foundation of China (NSFC)

The Agence Nationale de la Recherche (National Research Agency, ANR) of France

**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 Chemistry Division at NSF has partnered with the Deutsche Forschungsgemeinschaft (DFG; German Research Foundation), the Fonds zur Förderung der wissenschaftlichen Forschung (FWF; Austrian Science Fund) of Austria, the Engineering and Physical Sciences Research Council (EPSRC) of the United Kingdom, the National Natural Science Foundation of China (NSFC) and the Agence Nationale de la Recherche (National Research Agency, ANR) of France. NSF Chemistry will accept collaborative research proposals in chemistry, written in English, that establish new bilateral collaborations between U.S. investigators and investigators from Germany, Austria, United Kingdom, China or France. It is envisioned that the program will be expanded to include additional partnering foreign agencies in the coming years.

The program seeks new and highly innovative 3-year collaborative projects that break new ground and demonstrate high level of synergy between the collaborating investigators. The program will not accept proposals for projects that were funded in the past or are currently funded by other funding sources. The program will also not accept proposals for projects that largely overlap or are closely related to research projects that are currently carried out in the collaborators' laboratories. The proposed 3-year projects must be in areas that are supported by the NSF Division of Chemistry programs in Analytical and Surface Chemistry, Inorganic Chemistry, Organic Chemistry, Physical Chemistry and Theoretical and Computational Chemistry. The program aims to realize the NSF strategic goal of developing a diverse, globally-engaged, U.S. science and engineering workforce. The program therefore requires that US applicants will allocate significant financial resources to ensure meaningful participation of graduate students, postdoctoral research associates and junior investigators, including those from underrepresented groups, in the proposed international research collaborations through extended research visits to 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.

**Cognizant Program Officer(s):**

- Dr. Zeev Rosenzweig, Program Director, telephone: (703) 292-7719, email: [zrosenzw@nsf.gov](mailto:zrosenzw@nsf.gov)

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

- 47.049 --- Mathematical and Physical Sciences

## Award Information

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**Anticipated Type of Award:** Standard Grant or Continuing Grant

**Estimated Number of Awards:** 10 to 30

**Anticipated Funding Amount:** \$10,000,000 There are no set aside funds for this solicitation. However, based on results from prior competitions (e.g., 15 awards out of 60 proposals in FY 2008), we anticipate funding approximately \$10,000,000 in 3-year awards. The exact number of awards and total funding depend on the quality of proposals and availability of funds.

## Eligibility Information

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**Organization Limit:**

Proposals may only be submitted by the following:

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

**PI Limit:**

- a. A U.S. Investigator must establish a partnership with an investigator in either Germany, Austria, United Kingdom, China or France. The collaborating foreign investigator must be eligible for funding from the DFG (Germany), FWF (Austria), EPSRC (UK), NSFC (China) and ANR (France) respectively.
- b. The solicitation calls for new projects in areas that are supported by the Division of Chemistry programs in Analytical and Surface Chemistry, Inorganic chemistry, Organic chemistry, Physical chemistry and Theoretical and Computational chemistry. It is generally not the practice of the Chemistry Division to make multiple awards to the same individual. Therefore, potential applicants are strongly encouraged to choose between submitting a proposal in response to this solicitation and submitting an unsolicited proposal to the Chemistry Division. Potential applicants are also advised to choose between submitting a proposal in response to this solicitation and submitting a proposal to the Materials World Network program of the Division of Material Research (DMR) of NSF ([http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=12820&org=DMR&sel\\_org=DMR&from=fund](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=12820&org=DMR&sel_org=DMR&from=fund)).

Division of Chemistry grantees who wish to add an international collaboration component to their currently funded projects are advised to submit supplemental funding requests to their existing awards rather than to respond to this solicitation.

**Limit on Number of Proposals per Organization:**

None Specified

**Limit on Number of Proposals per PI: 1**

A U.S. Investigator may participate (as a PI, Co-PI or other senior research associate) in only one proposal which is submitted in response to this solicitation. There are no limits on the number of proposals an organization may submit.

## Proposal Preparation and Submission Instructions

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**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](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/bfa/dias/policy/docs/grantsgovguide.pdf>)

**B. Budgetary Information**

- **Cost Sharing Requirements:** Cost Sharing is not required under this solicitation.
- **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):  
November 04, 2008
- **Full Proposal Deadline(s)** (due by 5 p.m. proposer's local time):  
January 30, 2009

## Proposal Review Information Criteria

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**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

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**Award Conditions:** Standard NSF award conditions apply.

**Reporting Requirements:** Standard NSF reporting requirements apply.

## TABLE OF CONTENTS

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### Summary of Program Requirements

- I. **Introduction**
- II. **Program Description**
- III. **Award Information**
- IV. **Eligibility Information**
- V. **Proposal Preparation and Submission Instructions**
  - A. Proposal Preparation Instructions
  - B. Budgetary Information
  - C. Due Dates
  - D. FastLane/Grants.gov Requirements
- VI. **NSF Proposal Processing and Review Procedures**
  - A. NSF Merit Review Criteria
  - B. Review and Selection Process
- VII. **Award Administration Information**
  - A. Notification of the Award
  - B. Award Conditions
  - C. Reporting Requirements
- VIII. **Agency Contacts**
- IX. **Other Information**

## I. INTRODUCTION

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Recognizing the importance of international collaborations in promoting scientific discoveries, the National Science Foundation (NSF) and its counterpart agencies in Germany (DFG), Austria (FWF), UK (EPSRC), China (NSFC) and France (ANR) seek to enhance opportunities for collaborative activities in chemistry between U.S. and foreign investigators. The NSF Chemistry division will accept new **bilateral** collaborative research proposals, which are not currently funded by other sources, with each of the partnering agencies. The proposals should establish new partnerships between US researchers and researchers from either Germany, Austria, UK, China or France. The proposed projects must have clear relevance to areas supported by Division of Chemistry at NSF and by the following divisions in the partnering countries:

For German investigators the relevant DFG organization is the DFG's Division of Chemistry and Process Engineering. For inquiries please contact Dr.-Ing. Georg Bechtold, Deutsche Forschungsgemeinschaft (DFG), Chemie und Verfahrenstechnik Polymerwissenschaft, D-53170 Bonn, Tel. +49 (228) 885-2818, e-mail: [Georg.Bechtold@dfg.de](mailto:Georg.Bechtold@dfg.de)

For Austrian Investigators the relevant FWF organization is the FWF Chemistry and Nano-Sciences program. For inquiries please contact Dr. Bettina M. Löscher, Scientific Administrator for Chemistry and Nano-Sciences, The Fonds zur Förderung der wissenschaftlichen Forschung (FWF; Austrian Science Fund), Sensengasse 1 A-1090 Wien, Phone: +43 1 505 67 39 8405, Fax +43 1 505 67 40, e-mail: [loescher@fwf.ac.at](mailto:loescher@fwf.ac.at)

For UK investigators the relevant EPSRC organization is the Physical Sciences Programme. For inquiries please contact Katie Daniel, EPSRC, Polaris House, North Star Ave, Swindon SN2 1ET, Tel: 01793 442895, e-mail: [katie.daniel@epsrc.ac.uk](mailto:katie.daniel@epsrc.ac.uk)

For Chinese investigators the relevant NSFC organization is the Department of Chemical Sciences. For inquiries please contact Dr. Qiankun Zhuang, NSFC, 83 Shuangqing Road, Haidian District, Beijing 100085, Tel: 0086-10-62327075, e-mail: [zhuangqk@mail.nsf.gov.cn](mailto:zhuangqk@mail.nsf.gov.cn)

For French investigators the relevant ANR organization is the Department of Chemistry and Processes for Sustainable Development. For inquiries please contact Dr. Marie-Louise Saboungi, 212, rue de Bercy F-75012 Paris, Tel: +33-1 78 09 80 58 e-mail: [Marie-Louise.Saboungi@agencerecherche.fr](mailto:Marie-Louise.Saboungi@agencerecherche.fr)

## II. PROGRAM DESCRIPTION

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The National Science Foundation (NSF) seeks to enhance opportunities for collaborative activities between U.S. and foreign investigators. To realize this goal the Chemistry Division at NSF has partnered with the Deutsche Forschungsgemeinschaft (DFG; German Research Foundation), the Förderung der wissenschaftlichen Forschung (FWF, Austrian Science Fund) of Austria, the Engineering and Physical Sciences Research Council (EPSRC) of the United Kingdom, the National Natural Science Foundation of China (NSFC) and the Agence Nationale de la Recherche (National Research Agency, ANR) of France. NSF Chemistry will accept collaborative research proposals in chemistry that establish new bilateral collaborations between U.S. investigators and investigators from Germany, Austria, United Kingdom, China and France. The proposals will be written in English.

The program seeks new and highly innovative 3-year collaborative projects that break new ground and demonstrate high level of synergy between the collaborating investigators. The program will not accept proposals for projects that were funded in the past or are currently funded by other funding sources. The program will also not accept proposals for projects that largely overlap or are closely related to research projects that are currently carried out in the collaborators' laboratories. The proposed 3-year projects must be in areas that are supported by the NSF Division of Chemistry programs in Analytical and Surface Chemistry, Inorganic Chemistry, Organic Chemistry, Physical Chemistry and Theoretical and Computational Chemistry. The program seeks to realize the NSF strategic goal of developing a diverse, globally-engaged, U.S. science and engineering workforce. The program therefore requires that U.S. investigators will allocate significant financial resources to ensure meaningful participation of graduate students, postdoctoral research associates and beginning investigators, including those from under represented groups, in the proposed international research collaborations through extended research visits in their 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.

U.S. investigators will submit their proposals to NSF through Fastlane or Grants.gov. Foreign investigators will submit an identical proposal to the partnering international agency if required. NSF and the partnering international funding agencies will co-review and make joint funding decisions on these proposals. NSF awards will support the research of U.S. Investigators while the partnering international funding agencies will support the research of the collaborating foreign investigators.

## III. AWARD INFORMATION

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Anticipated Type of Award: Continuing Grant or Standard Grant

Estimated Number of Awards: 10 to 30

Anticipated Funding Amount: There are no set aside funds for this solicitation. However, based on results from prior competitions (e.g., 15 awards out of 60 proposals in FY 2008), we anticipate funding approximately \$10,000,000 in 3-year awards.

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

## IV. ELIGIBILITY INFORMATION

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### Organization Limit:

Proposals may only be submitted by the following:

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

### PI Limit:

- a. A U.S. Investigator must establish a partnership with an investigator in either Germany, Austria, United Kingdom, China or France. The collaborating foreign investigator must be eligible for funding from the DFG (Germany), FWF (Austria), EPSRC (UK), NSFC (China) and ANR (France) respectively.
- b. The solicitation calls for new projects in areas that are supported by the Division of Chemistry programs in Analytical and Surface Chemistry, Inorganic chemistry, Organic chemistry, Physical chemistry and Theoretical and Computational chemistry. It is generally not the practice of the Chemistry Division to make multiple awards to the same individual. Therefore, potential applicants are strongly encouraged to choose between submitting a proposal in response to this solicitation and submitting an unsolicited proposal to the Chemistry Division. Potential applicants are also advised to choose between submitting a proposal in response to this solicitation and submitting a proposal to the Materials World Network program of the Division of Material Research (DMR) of NSF ([http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=12820&org=DMR&sel\\_org=DMR&from=fund](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=12820&org=DMR&sel_org=DMR&from=fund)). Division of Chemistry grantees who wish to add an international collaboration component to their currently funded projects are advised to submit supplemental funding requests to their existing awards rather than to respond to this solicitation.

**Limit on Number of Proposals per Organization:**

None Specified

**Limit on Number of Proposals per PI: 1**

A U.S. Investigator may participate (as a PI, Co-PI or other senior research associate) in only one proposal which is submitted in response to this solicitation. There are no limits on the number of proposals an organization may submit.

**Additional Eligibility Info:**

## V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

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### A. Proposal Preparation Instructions

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**Preliminary Proposals (required):** Preliminary proposals are required and must be submitted via the NSF FastLane system, even if full proposals will be submitted via Grants.gov.

**Preliminary Proposal Submission Requirements**

Preliminary proposals must be submitted to NSF through FastLane. The same preliminary proposals must be submitted to the foreign funding agency by the foreign investigator unless noted otherwise in the foreign agency call for this program. Foreign investigators are advised to 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 Page:** List the names and affiliations of US Investigators, a tentative title for the proposed collaborative project, and the Division of Chemistry program that should consider the application. 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 2 pages, should include

- Names, affiliations and contact information (phone number and e-mail address) of the foreign investigator.
- The proposed research problem, key preliminary results and an outline of the research plan.
- The role of each collaborative investigator and relevant expertise.
- The collaborative approach to be used and the expected synergy.
- A plan to facilitate meaningful involvement of students 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 2-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 (Budget, Budget Justification, Facilities and Equipment) are not permitted 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 for their programmatic fit to the Division of Chemistry, the anticipated benefits of the international collaboration and for the involvement of students and beginning researchers in the proposed projects. NSF will review the preliminary proposals internally. The partnering agencies will review the preliminary proposal using their standard review procedures or rely on the NSF review when possible. 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](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 [pubs@nsf.gov](mailto:pubs@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/bfa/dias/policy/docs/grantsgovguide.pdf>). 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 [pubs@nsf.gov](mailto:pubs@nsf.gov).

Full proposals will be submitted by the U.S. 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:

- The title of the proposal to NSF should begin as: "International Collaboration in Chemistry:..."
- The duration of the project would typically be 3 years for the U.S. 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 by the proposed international collaboration.
- The project description may not exceed 15 pages.
- As indicated in the NSF Grant Proposal Guidelines (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 that will not have 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.
- Information pertinent to the foreign investigator should be organized in an electronic file that will be submitted as a single supplementary document through NSF FastLane or Grants.gov. For proposals with FWF, EPSRC, NSFC and ANR, the supplementary document should contain the foreign investigator budget request from the partnering agency, a current and pending support list, and a 2-page biographical sketch, which includes a list of collaborators, doctoral and postdoctoral advisors, and current and former students and postdoctoral fellows.
- For proposals with the DFG, the German applicants should prepare the supplementary document following the DFG guidelines as published in the DFG call. The supplementary document should contain the following information about the German collaborator: General Information (whole section), State of the art preliminary work (only description of preliminary work of the German applicant is required, i.e. section 2.2), Funds requested (whole section), Preconditions for carrying out the project (whole section), Declarations (whole section) and a List of appendages. Investigators from the China and France should submit an identical proposal to the NSFC and ANR respectively with forms required by these agencies.
- UK investigators are required to make a submission to EPSRC and should consult the EPSRC call document for further information.
- German and Austrian investigators do not need to submit the proposal to the DFG and FWF respectively.
- Foreign investigators should contact their corresponding agencies to make sure that their submission meets their agency guidelines for this solicitation. This will prevent lengthy delays in proposal processing or even the return of the proposal without review. The foreign agency call can be found at:

DFG - [http://www.dfg.de/aktuelles\\_presse/information\\_fuer\\_die\\_wissenschaft/ausschreibungen\\_mit\\_internationalem\\_bezug/index.html](http://www.dfg.de/aktuelles_presse/information_fuer_die_wissenschaft/ausschreibungen_mit_internationalem_bezug/index.html)

EPSRC - <http://www.epsrc.ac.uk/CallsForProposals/default.htm>

NSFC - <http://www.nsfc.gov.cn>

FWF - [http://www.fwf.ac.at/de/internationales/foerderkategorien\\_bilaterale\\_abkommen.html](http://www.fwf.ac.at/de/internationales/foerderkategorien_bilaterale_abkommen.html)

ANR - <http://www.agence-nationale-recherche.fr/?NodId=17&IngAAPIId=148>

## B. Budgetary Information

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**Cost Sharing:** Cost sharing is not required under this solicitation.

## C. Due Dates

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- **Preliminary Proposal Due Date(s) (required)** (due by 5 p.m. proposer's local time):  
November 04, 2008
- **Full Proposal Deadline(s)** (due by 5 p.m. proposer's local time):  
January 30, 2009

## D. FastLane/Grants.gov Requirements

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- **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](mailto: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. The Grants.gov's Grant Community User Guide is a comprehensive reference document that provides technical information about Grants.gov. Proposers can download the User Guide as a Microsoft Word document or as a PDF document. The Grants.gov User Guide is available at: <http://www.grants.gov/CustomSupport>. 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](mailto: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

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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

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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>.

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.

**Additional 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.

### B. Review and Selection Process

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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. NSF Program Officers will utilize the ad-hoc review to evaluate the proposals. The partnering agency may also utilize a panel to review the proposals. The program officers in charge from NSF and the partnering agency will consider the advice of reviewers and panel to formulate a joint 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.

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## VII. AWARD ADMINISTRATION INFORMATION

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### A. Notification of the Award

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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

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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](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 [pubs@nsf.gov](mailto:pubs@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](http://www.nsf.gov/publications/pub_summ.jsp?ods_key=aag).

### C. Reporting Requirements

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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.

Failure to provide the required annual or final project reports 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.

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## VIII. AGENCY CONTACTS

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General inquiries regarding this program should be made to:

- Dr. Zeev Rosenzweig, Program Director, telephone: (703) 292-7719, email: [zrosenzw@nsf.gov](mailto:zrosenzw@nsf.gov)

For questions related to the use of FastLane, contact:

- FastLane Help Desk, telephone: 1-800-673-6188; e-mail: [fastlane@nsf.gov](mailto:fastlane@nsf.gov).
- Paul Spyropoulos, Computer Specialist, 1055 S, telephone: (703) 292-4968, fax: (703) 292-9037, email: [pspyropo@nsf.gov](mailto: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](mailto:support@grants.gov).

## CONTACTS AT INTERNATIONAL PARTNERING AGENCIES

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### Germany (DFG)

Dr.-Ing. Georg Bechtold  
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### France (ANR)

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**e-mail: [Marie-Louise.Saboungi@agencerecherche.fr](mailto:Marie-Louise.Saboungi@agencerecherche.fr)**

## IX. OTHER INFORMATION

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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, MyNSF (formerly the Custom News Service) is an information-delivery system 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 or the user's Web browser each time new publications are issued that match their identified interests. MyNSF also is available on NSF's Website at <http://www.nsf.gov/mynsf/>.

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

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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 40,000 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 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: [pubs@nsf.gov](mailto:pubs@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

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