

## Collaborative Research in Chemistry (CRC)

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### Program Solicitation

NSF 07-581

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*Replaces Document(s):*

NSF 05-606

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**National Science Foundation**

Directorate for Mathematical & Physical Sciences  
Division of Chemistry

#### **Preliminary Proposal Due Date(s) (required):**

November 12, 2007

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

March 31, 2008

(By invitation only)

### REVISION NOTES

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In furtherance of the President's Management Agenda, NSF has identified programs that will offer proposers the option to utilize Grants.gov to prepare and submit proposals, or will require that proposers utilize Grants.gov to prepare and submit proposals. Grants.gov provides a single Government-wide portal for finding and applying for Federal grants online.

In response to this program solicitation, proposers may opt to submit proposals via [Grants.gov](http://Grants.gov) or via the [NSF FastLane](#) system. In determining which method to utilize in the electronic preparation and submission of the proposal, please note the following:

Collaborative Proposals. All collaborative proposals submitted as separate submissions from multiple organizations must be submitted via the [NSF FastLane](#) system. Chapter II, Section D.3 of the Grant Proposal Guide provides additional information on collaborative proposals.

### SUMMARY OF PROGRAM REQUIREMENTS

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#### General Information

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##### **Program Title:**

Collaborative Research in Chemistry (CRC)

##### **Synopsis of Program:**

The CRC Program is designed to promote collaborative research in a coherent, defined project at the forefront of the chemical sciences. CRC proposals will involve three or more investigators with complementary expertise. Co-investigators may include researchers with backgrounds in diverse areas of chemistry and other science and engineering disciplines appropriate to the proposed research. The use of cyber-infrastructure to enable and enhance collaborations is encouraged. Projects should be scientifically focused in areas supported by the NSF Division of Chemistry, limited in duration, and substantial in their scope and impact.

The CRC Program will use preliminary proposals to identify promising projects. Full CRC proposals will be considered by invitation only, based on peer review of preliminary proposals.

**Cognizant Program Officer(s):**

- Kelsey D. Cook, telephone: (703) 292-7490, email: [kcook@nsf.gov](mailto:kcook@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:** 6 , depending on award size and proposal quality

**Anticipated Funding Amount:** \$3,000,000 (approximately) in FY2008, depending on availability of funds

**Eligibility Information**

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**Organization Limit:**

Proposals may only be submitted by the following:

- Academic Institutions located in the U.S.: U.S. universities and colleges located in the U.S.
- 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:**

The PI must be affiliated with a U.S. academic institution or non-profit, non-academic organization. Other investigators may be affiliated with U.S. academic institutions, non-profit, non-academic organizations, industry, government laboratories, or international institutions. No CRC award funds may go directly to industry, government laboratories or international institutions.

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

None Specified

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

An investigator may participate (as a PI, co-PI, or other senior personnel) in only one CRC preliminary proposal or proposal per competition. Any preliminary proposals or proposals that do not comply with this eligibility requirement will be returned without review. There are no limits on the number of proposals an institution or 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 by NSF.
- **Indirect Cost (F&A) Limitations:** Not Applicable
- **Other Budgetary Limitations:** Not Applicable

## C. Due Dates

- **Preliminary Proposal Due Date(s) (required):**

November 12, 2007

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

March 31, 2008

(By invitation only)

## 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

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## I. INTRODUCTION

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The Division of Chemistry (CHE) of the National Science Foundation (NSF) expects to make awards in Fiscal Year 2008 to support activities of collaborative research groups. Proposals for Collaborative Research in Chemistry (CRC) should provide a plan designed to have significant impact in scientifically focused areas of recognized or emerging importance to the chemical sciences.

The chemical sciences thrive on the sharing of ideas among researchers from various disciplines. Indeed, there are research needs that can only be met by teams of investigators drawn from diverse research areas. The advantages of pooled insights, complementary expertise, diverse points of view, and shared tasks can make a successful research collaboration more than the sum of its parts. The Division supports multi-investigator projects to foster research collaborations, promote exploration of multidisciplinary projects, and encourage exploitation of unique opportunities for progress on significant problems centered in the chemical sciences. The CRC Program provides a specific focus and specific mode of support for collaborative research.

The CRC Program will use preliminary proposals to identify promising projects. Full CRC proposals will be considered by invitation only, based on peer review of preliminary proposals.

## II. PROGRAM DESCRIPTION

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The CRC Program enables researchers from diverse scientific and engineering backgrounds to respond to recognized scientific needs, to take advantage of current scientific opportunities, or to prepare the groundwork for anticipated significant scientific developments in chemistry. CRC proposals will involve three or more investigators with complementary expertise. The members of the collaborative team can come from more than one institution and can include non-academic and international scientists. The principal investigator will most likely be a chemist; however, there is no restriction on the scope of disciplines represented by the co-investigators. Investigators may include, in addition to chemists, researchers from other science and engineering disciplines appropriate to the proposed research. Collaborations involving investigators at undergraduate institutions are encouraged. The use of cyber-infrastructure to enable and enhance collaborations is also encouraged (<http://www.nsf.gov/chem/cyber>).

Chemistry is the focus of this program. Ancillary benefits to other fields of science, although desirable, are not sufficient to make a project suitable for this program. Awards made under this program are intended to foster synergy among collaborators that cannot be achieved with individual grants. Therefore, this program will support projects requiring the collective effort and close collaboration of several research groups to reach significant scientific goals. Projects should be scientifically focused in areas supported by the Division of Chemistry, limited in duration, and substantial in their scope and impact.

Examples of possible outcomes are:

- Substantial progress toward answering a set of major unresolved questions in chemistry.
- Undergraduates, graduate students and postdoctoral researchers trained in an important interdisciplinary area.
- New and exemplary modes of collaborations.

Initiators of proposals are strongly urged to discuss ideas for a project with a program officer listed at the end of this document. Some brief guidelines are given below.

Principal Investigators should ensure the proposed CRC project does not overlap significantly with ongoing federally funded research. In cases of comparable merit, strong preference will be given to researchers who are not currently funded by NSF Chemistry.

The proposed research must be appropriate for NSF and for the Division of Chemistry. Additional information is available on the Division's website (<http://www.nsf.gov/div/index.jsp?div=CHE>). NSF reserves the right to return without review proposals that are not appropriate for the CRC Program. Principal Investigators should contact a cognizant program officer if there are any questions about the suitability of a proposal for the CRC Program.

The CRC Program encourages collaborations with non-academic and international scientists. Such proposals require an letter of collaboration from the partner organization that confirms the participation of a co-investigator. This letter should be included in the Supplementary Documentation (see Proposal Preparation Instructions). The letter should describe the plan of interaction with the U.S. researchers, the time commitment of the researcher(s), and the nature of the collaborative research activities. Letters of general support or recommendation are inappropriate and may cause a proposal to be returned without review.

Co-investigators associated with entities such as industry, national laboratories, state agencies, and Federally Funded Research and Development Centers (FFRDC) must be supported by their own organization. However, it is appropriate for universities to fund research expenses incurred when scientists from such entities work at university sites. In addition, it is appropriate for students supported through universities to work at a partner industrial laboratory, FFRDC or comparable site. Federal employees may not receive salaries or in other ways augment their agency's appropriation through grants made by this program, and no funds for major equipment at FFRDCs are allowed.

Support for collaborations with international scientists is provided through the NSF grant to the submitting U.S. institution or non-profit, non-educational organization. This means no CRC award funds may go directly to foreign institutions. The proposal may include up to \$100,000 in participant support costs, over the duration of the grant, for international collaborative research activities. Travel and incidental research costs may be included; salaries may not. These international interactions must feature a joint scientific workplan and should be clearly described in the Project Description. If, after review, a proposal is recommended for funding, the CRC Program Officer will work with Program Officers from the NSF Office of International Science and Engineering and the key project personnel to develop a detailed plan consistent with applicable international arrangements.

### III. AWARD INFORMATION

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Under this solicitation, proposals may be submitted for support for up to five years. Although it is anticipated that award size will average \$500,000 per year, there is no pre-determined maximum or minimum award size. NSF expects to fund approximately six CRC awards in FY2008, depending on the quality of submissions and the availability of funds. The anticipated date of awards is August 2008.

### IV. ELIGIBILITY INFORMATION

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#### Organization Limit:

Proposals may only be submitted by the following:

- Academic Institutions located in the U.S.: U.S. universities and colleges located in the U.S.
- 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:

The PI must be affiliated with a U.S. academic institution or non-profit, non-academic organization. Other investigators may be affiliated with U.S. academic institutions, non-profit, non-academic organizations, industry, government laboratories, or international institutions. No CRC award funds may go directly to industry, government laboratories or international institutions.

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

None Specified

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

An investigator may participate (as a PI, co-PI, or other senior personnel) in only one CRC preliminary proposal or proposal per competition. Any preliminary proposals or proposals that do not comply with this eligibility requirement will be returned without review. There are no limits on the number of proposals an institution or 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 proposals are required for the CRC Competition and must be submitted through FastLane. One preliminary proposal per project should be submitted even if the team plans to use the linked collaborative mechanism for the full proposal. Additional directions are given below:

Cover Sheet, including a tentative title for the CRC Project. The requested budget amount and duration are both zero on a preliminary proposal. The PI must select the option indicating that this is a preliminary proposal.

Project Summary, limited to one page, including the names and affiliations of all senior personnel. The project summary must address both the intellectual merit and broader impacts of the proposed CRC project.

Project Description, limited to five pages, should present

- the proposed research problem, key preliminary results and outline of the research plan;
- the role of each collaborative investigator and relevant expertise;
- the collaborative approach to be used, including discussion of collaborative education plans, management plans and evaluative methods; and
- an estimate of the requested budget and duration

References Cited may contain up to ten leading references to provide context for the proposed research.

Biographical Sketches for the PI, co-PIs and all Senior Personnel, using the NSF standard format.

Current and Pending Support statements for the PI, co-PIs and all Senior Personnel.

The remaining proposal sections (Budget, Budget Justification, Facilities and Equipment, Supplemental Documents) are not permitted in this preliminary proposal. Letters of support or collaboration are not permitted in this preliminary proposal.

**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=jpg](#). 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).

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

**Collaborative Proposals.** All collaborative proposals submitted as separate submissions from multiple organizations must be submitted via the NSF FastLane system. Chapter II, Section D.3 of the Grant Proposal Guide provides additional information on collaborative proposals.

Proposers are strongly encouraged to consult the proposal submission checklist included in the Grant Proposal Guide as they prepare their proposal. Proposers using Grants.gov should also consult the NSF Grants.gov Application Guide. Proposals not compliant with the proposal preparation guidelines, as supplemented by the following instructions, may be returned without review. The items outlined below pertain to the corresponding sections in the Grant Proposal Guide.

Only projects that have submitted a preliminary proposal and have been invited to submit a full proposal, based on merit review of the preliminary proposals, will be considered. All others will be returned without review.

- **Project Summary.** One-page limit, including the names and affiliations of all senior personnel. The project summary must address both the intellectual merit and broader impacts of the proposed CRC project.
- **Project Description.** A total of twenty (20) pages, including Results from Prior Support, Collaboration and Education, and Management Plan. CRC proposals are likely to be read by non-specialists at some stage of the review process. It is therefore particularly important that they be written to emphasize the impact of the projects on the chemical sciences in a broad context.

i) **Proposed Research.** Narrative, not to exceed eighteen (18) pages, consisting of the following items:

- An explanation of the scientific context, intellectual merit, relevance to chemistry and timeliness of the proposed project.
- A description of the proposed research.
- A justification for why a collaborative effort is necessary to carry out the proposed project.
- A description of the contribution to be made by each senior investigator.
- A discussion of the broader impacts of the proposed work.
- A timeline for the planned work and a justification for the duration.
- Plans for disseminating the results.
- Results from prior NSF support. List all current and prior NSF awards held by any investigator (PI, co-PI or other project partner) in the past five years. The most relevant project must also be described in more detail, following the format described in the Grant Proposal Guide. Results from Prior NSF Support are limited to two pages, in total.

ii) **Education and Outreach Plan.** Narrative, not to exceed one page, describing the team's plans for

- training undergraduate students, graduate students, and postdoctoral researchers, including co-

- mentorship or other collaborative training.
- broadening opportunities for, and enabling the participation of, underrepresented groups in the chemical sciences.
- dissemination including workshops and education/outreach activities.

iii) Collaboration and Management Plan. Narrative, not to exceed one page, describing the framework for

- effective collaboration.
  - how decisions will be made regarding the conduct of the project.
  - how the collaboration will be evaluated.
- **References Cited.** References should include full titles of articles and book chapters cited. This section includes bibliographic citations only and must not be used to provide parenthetical information outside of the Project Description. Please indicate with an asterisk (\*) references co-authored by two or more proposal investigators.
  - **Biographical sketches.** For all senior personnel, provide a brief biographical sketch using the format described in the Grant Proposal Guide. Note that recent collaborators and other affiliates should also be collected into the combined list given in the Supplementary Documentation (see below).
  - **Budget.** Include annual budgets for each year; a cumulative budget will be automatically generated by the FastLane system. A detailed budget justification (up to three pages) should document proposed expenses. Multi-institutional CRC proposals may use either the award-subaward or linked collaborative proposal mechanisms (see GPG guidelines).
  - **Current and Pending Support.** A full description of the total level of current and pending support from all sources for the key personnel. Any overlap between federally funded projects and the proposed research must be clarified.
  - **Facilities and Cyberinfrastructure.** A description of the facilities (including laboratories, computational facilities and cyberinfrastructure) that will be made available to the project. Separate facilities descriptions should be included for multi-institutional projects or those involving non-academic partners. Proposers are not required to use the form provided in FastLane and may instead upload a PDF document with the required information.
  - **Supplementary Documentation.** Required letters of collaboration from national laboratories, international institutions, and industry should be included in this section. Letters of collaboration from investigators not supported on the grant are also appropriate. Letters of recommendation or general support are not permitted. Brief quotations for major equipment requested in the proposal may also be included in the supplementary documentation.
  - **Single Copy Documents.** Provide a combined, alphabetized list of all scientists, with current affiliations, who have collaborated with the PI or co-PIs in the last 48 months or are otherwise affiliated with the PIs or co-PIs. This information will be used to avoid conflicts of interest in the merit review process.
  - **Suggested Reviewers/Reviewers Not to Include (Optional).** Please include potential reviewers who span the range of disciplines represented by the CRC proposal.

## B. Budgetary Information

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**Cost Sharing:** Cost sharing is not required by NSF.

### Budget Preparation Instructions:

Multi-institutional proposals may use either the award-subaward mechanism or the linked collaborative proposal mechanism. All collaborative proposals submitted as separate submissions from multiple organizations must be submitted via FastLane. Detailed instructions for both mechanisms are provided in Chapter II.D.3. of the Grant Proposal Guide

Funds should be included in the travel budget for the team of researchers to make two trips to NSF headquarters (Arlington, Virginia) during the course of the award.

## C. Due Dates

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- **Preliminary Proposal Due Date(s) (required):**

November 12, 2007



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

March 31, 2008

(By invitation only)

#### 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/CustomerSupport>. 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 and, if they meet NSF proposal preparation requirements, for review. 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 with the proposer.

##### 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?

NSF staff will give careful consideration to the following in making funding decisions:

***Integration of Research and Education***

One of the principal strategies in support of NSF's goals is to foster integration of research and education through the programs, projects, and activities it supports at academic and research institutions. These institutions provide abundant opportunities where individuals may concurrently assume responsibilities as researchers, educators, and students and where all can engage in joint efforts that infuse education with the excitement of discovery and enrich research through the diversity of learning perspectives.

***Integrating Diversity into NSF Programs, Projects, and Activities***

Broadening opportunities and enabling the participation of all citizens -- women and men, underrepresented minorities, and persons with disabilities -- is essential to the health and vitality of science and engineering. NSF is committed to this principle of diversity and deems it central to the programs, projects, and activities it considers and supports.

**Additional Review Criteria:**

In addition to the National Science Board merit review criteria, reviewers will be asked to apply the following criteria when reviewing CRC preliminary proposals and full proposals:

- Importance of proposed project to areas supported by the Division of Chemistry.
- Long-term scientific impact of the proposed activity. Projects that have a high degree of risk will receive favorable consideration providing that the potential benefit is correspondingly high.
- Timeliness of the planned work. Projects in emerging research areas are especially encouraged.
- Appropriateness of the group members and group structure for the task.
- Extent to which the group effort is focused on a cohesive well-delineated goal.
- Justification of the value of the collaborative effort.
- Effectiveness of the educational and outreach plan, including the extent to which the project broadens participation in the chemical sciences.
- Effectiveness of the management plan.
- Appropriateness of the proposed timeline and budget.

Any project requesting \$750,000 or more in total costs per year may be subject to a site visit as part of the review process.

In cases of comparable merit, strong preference will be given to researchers who are not currently supported by the NSF Division of Chemistry.

**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. 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, the NSF Program Officer recommends to the cognizant Division Director whether the proposal should be declined or recommended for award. NSF is striving to be able to tell applicants whether their proposals have been declined or recommended for funding within six months. The time interval begins on the date of receipt. The interval ends when the Division Director accepts the Program Officer's recommendation.

A summary rating and accompanying narrative will be completed and submitted by each reviewer. In all cases, reviews are treated as confidential documents. Verbatim copies of reviews, excluding the names of the reviewers, are sent to the Principal Investigator/Project Director by the Program Officer. In addition, the proposer will receive an explanation of the decision to award or decline funding.

In all cases, after programmatic approval has been obtained, the proposals recommended for funding will be forwarded to the Division of Grants and Agreements for review of business, financial, and policy implications and the processing and issuance of a grant or other agreement. Proposers are cautioned that only a Grants and Agreements Officer may make commitments, obligations or awards on behalf of NSF or authorize the expenditure of funds. No commitment on the part of NSF should be inferred from technical or budgetary discussions with a NSF Program Officer. A Principal Investigator or organization that makes financial or personnel commitments in the absence of a grant or cooperative agreement signed by the NSF Grants and Agreements Officer does so at their own risk.

## VII. AWARD ADMINISTRATION INFORMATION

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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 Federal Demonstration Partnership (FDP) Terms and Conditions \* and (5) any announcement or other NSF issuance that may be incorporated by reference in the award letter. Cooperative 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/general\\_conditions.jsp?org=NSF](http://www.nsf.gov/awards/managing/general_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.

## VIII. AGENCY CONTACTS

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General inquiries regarding this program should be made to:

- Kelsey D. Cook, telephone: (703) 292-7490, email: [kcook@nsf.gov](mailto:kcook@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 G. 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).

## 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>.

### Related Programs:

## 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

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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  
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