Chemistry Research Instrumentation and Facilities:Cyberinfrastructure and Research Facilities (CRIF:CRF)

Program Solicitation
NSF 06-512
Replaces Document **NSF 05-555**

National Science Foundation
Directorate for Mathematical and Physical Sciences
  Division of Chemistry

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

March 01, 2006

REVISIONS AND UPDATES

For FY06, CRIF:CRF is soliciting proposals ONLY for the cyberinfrastructure component of this program. Facilities proposals will not be accepted in FY06.

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

Chemistry Research Instrumentation and Facilities:Cyberinfrastructure and Research Facilities (CRIF:CRF)

Synopsis of Program:

The Division of Chemistry of the National Science Foundation (NSF) , under the umbrella of the Chemistry Research Instrumentation and Facilities Program (CRIF), has provided support to research institutions and consortia for the establishment of regional or national instrumentation facilities, the purchase of departmental research instrumentation, and the development of state-of-the-art equipment. With the prior solicitation (05-555), the instrumentation facilities component of the CRIF Program was expanded to address the growing importance of cyber-enabled chemistry in the research endeavor. The Chemistry Research Instrumentation and Facilities: Cyberinfrastructure and Research Facilities (CRIF:CRF) Program provides funding to build a foundation for research facilities with unique capabilities in the chemical sciences. This is structured to enable NSF, through its Division of Chemistry, to respond to a variety of needs for infrastructure to support basic research and education in chemistry. NSF programs that support cyberinfrastructure, instrumentation, and facilities for *other* fields of research are listed in the solicitation. For FY06, CRIF:CRF is soliciting proposals ONLY for the cyberinfrastructure component of this program. Moreover, preference will be given to proposals that are complementary to the projects represented by the FY05 awards (CHE-0535542; CHE-0535640; CHE-0535656; CHE-0535710). Facilities proposals will not be accepted in FY06.

Cognizant Program Officer(s):

- Celeste Rohlfing, Program Director, Directorate for Mathematical & Physical Sciences, Division of Chemistry, 1055 S, telephone: (703) 292-4962, fax: (703) 292-9037, email: crohlfin@nsf.gov
- Robert L. Kuczkowski, Program Officer, Directorate for Mathematical & Physical Sciences, Division of Chemistry, 1055 S, telephone: (703) 292-4953, fax: (703) 292-9037, email: rkuczkow@nsf.gov

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

- 47.049 --- Mathematical and Physical Sciences

Eligibility Information

- **Organization Limit:**

  Only academic institutions or non-profit research organizations in the U.S. and U.S. territories may submit proposals.

- **PI Eligibility Limit:**

  The principal investigator must be affiliated with an academic institution or non-profit research organization in the U.S. and U.S. territories. Other investigators may be affiliated with U.S. academic institutions, non-profit research organizations, industry, government laboratories, or international institutions. No CRIF:CRF award funds may go directly to industry, government laboratories or international institutions.

- **Limit on Number of Proposals:** None Specified.

Award Information

- **Anticipated Type of Award:** Continuing Grant
- **Estimated Number of Awards:** 3 to 6 - depending upon award size and the quality of proposals. Duration of awards is up to five years initially. Awards range from an average of $300,000 per year to $700,000 per year.
- **Anticipated Funding Amount:** $4,000,000 depending upon the availability of funds in FY06.

Proposal Preparation and Submission Instructions

A. Proposal Preparation Instructions

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

B. Budgetary Information

- **Cost Sharing Requirements:** Cost Sharing is not required by NSF.
- **Indirect Cost (F&A) Limitations:** Not Applicable.
- **Other Budgetary Limitations:** Not Applicable.

C. Due Dates

- **Full Proposal Deadline Date(s)** (due by 5 p.m. submitter's local time):
      March 01, 2006

Proposal Review Information

- **Merit Review Criteria:** National Science Board approved criteria. Additional merit review considerations apply. Please see the full text of this solicitation for further information.

Award Administration Information

- **Award Conditions:** Standard NSF award conditions apply.
- **Reporting Requirements:** Standard NSF reporting requirements apply.

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I. INTRODUCTION

For over thirty years, the CRIF Program has provided support to research institutions for the establishment of regional or national instrumentation facilities, the purchase of departmental research instrumentation, and the development of state-of-the-art equipment. Due to the different nature of these requests, the Division of Chemistry has recently separated the components of this infrastructure program into three stand-alone competitions: (a) the CRIF: Department Multiuser Instrumentation Program, or CRIF:MU (http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf05578); (b) the CRIF: Instrument Development Program, or CRIF:ID (http://www.nsf.gov/pubsys/ods/getpub.cfm?nsf04534); and (c) the CRIF: Cyberinfrastructure and Research Facilities Program, or CRIF:CRF (this solicitation). CRIF:CRF will provide funds to research organizations and consortia of research organizations to build a foundation for cyber-enabled chemical research and education; and to establish and support multi-user research facilities with unique capabilities in the chemical sciences. This program is structured to enable NSF, through its Division of Chemistry, to respond to a variety of needs for infrastructure to support basic research and education in chemistry. Under this program, investigators may seek funding to establish and support either centers for the development of cyber-enabled chemical research, or regional or national instrumentation facilities. For FY06, CRIF:CRF solicits proposals ONLY for the cyberinfrastructure component of this program. Moreover, preference will be given to proposals that are complementary to the projects represented by the FY05 awards (CHE-0535542; CHE-0535640; CHE-0535656; CHE-0535710). Facilities proposals will not be accepted in FY06.

(a) Research Facilities

Facilities proposals will not be accepted in FY06.

(b) Cyberinfrastructure

As described in the report, "Revolutionizing Science and Engineering Through Cyberinfrastructure: Report of the NSF Blue-Ribbon Advisory Panel on Cyberinfrastructure," the manner in which scientific and engineering research and education is conducted will be radically transformed by cyberinfrastructure. This report may be accessed at http://www.cise.nsf.gov/sci/reports/atkins.pdf. The NSF Division of Chemistry shares this vision and has held a workshop that has identified research and education frontiers that would be enabled by investments in cyberinfrastructure. The report from this workshop may be accessed at http://bioeng.berkeley.edu/faculty/cyber_workshop/, and general information about cyber-enabled chemistry may be found at www.nsf.gov/chem/cyber. A National Research Council report, "Information and Communications," also identifies opportunities in cyberinfrastructure in the chemical sciences and is available at http://books.nap.edu/catalog/10831.html.

Cyberinfrastructure is enabling new chemical research and education activities through grid computing, community databases, remote access to instrumentation, electronic support for geographically dispersed collaborations, and other web- and grid-accessible services. A team of researchers in a virtual laboratory can now assemble distributed expertise and resources to target chemical research and educational priorities. Advances in cyberinfrastructure in areas such as scientific portals, workflow management, computational modeling, and data and molecular visualization will clearly impact the day-to-day practice of chemistry in the near future. Moreover, the access to expertise and resources that cyberinfrastructure provides holds the potential to broaden participation in the chemical sciences to create a truly inclusive national and international community. To achieve this vision, certain characteristics of the chemistry research community – specifically, the broad range of its computational techniques and data types and its large number of independent data producers – pose unique challenges that will need to be overcome. Close interaction between practicing chemists and information technology developers, iterative approaches to software development and deployment, and mechanisms to share best practices will all be critical in advancing a cyber-enabled chemistry community. It should be noted that specialized software dedicated to an individual investigator's research project would not be supported through the CRIF:CRF program, as it is normally supported as part of an individual investigator award.

For FY06, preference will be given to proposals that are complementary to the cyberinfrastructure projects represented by the FY05 awards (CHE-0535542;

CHE-0535640; CHE-0535656; CHE-0535710). Note also that all proposals submitted in response to this solicitation are subject to program-specific review criteria (see Section VI. A) in addition to the standard NSF criteria on intellectual merit and broader impacts.

II. PROGRAM DESCRIPTION

The CRIF:CRF Program in FY06 accepts proposals for the support of cyberinfrastructure projects that would provide unique state-of-the-art capabilities for research to a broad community of chemical scientists.

Examples of cyberinfrastructure projects might include developing freely distributed computational codes that take advantage of grid technologies; networking of analytical instrumentation to provide remote access for educational/home/commercial use; and establishing digital libraries and repositories for sharing of chemical data. Advances in areas such as scientific portals, workflow management, computational modeling, remote use of instrumentation, and data and molecular visualization provide other examples of the rich opportunities associated with the development of cyberinfrastructure.

PI's are strongly encouraged to consult with cognizant program officers in the Division of Chemistry before submitting a cyberinfrastructure proposal to CRIF: CRF.

CRIF:CRF projects are expected to serve the state-of-the-art software needs for a wide community of users and simultaneously to support core research in the development of cyberinfrastructure. The proposal should document these cyberinfrastructure needs and describe the research community the project would serve. For FY06, preference will be given to proposals that are complementary to the cyberinfrastructure projects represented by the FY05 awards (CHE-0535542; CHE-0535640; CHE-0535656; CHE-0535710).

Successful proposals will initially be supported by the Division of Chemistry of NSF for a period of up to five years, depending upon merit review through the CRIF:CRF program and the availability of funds. Annual progress reports will be required. On-site evaluations will be made during the award period.

III. ELIGIBILITY INFORMATION

Organization Limit: Only academic institutions or non-profit research organizations in the U.S. and U.S. territories may submit proposals.

PI Eligibility Limit: The principal investigator must be affiliated with an academic institution or non-profit research organization in the U.S. and U.S. territories. Other investigators may be affiliated with U.S. academic institutions, non-profit research organizations, industry, government laboratories, or international institutions. No CRIF:CRF award funds may go directly to industry, government laboratories or international institutions.

Limit on Number of Proposals: None specified.

IV. AWARD INFORMATION

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

Anticipated Type of Award: Continuing Grant.

Estimated Number of Awards: 3 to 6 - depending upon award size and the quality of proposals -- Up to five year awards initially. Awards range from an average of $300,000 per year to $700,000 per year.

Anticipated Funding Amount: $4,000,000 depending upon the availability of funds in FY06.

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

Full Proposal Instructions:

Proposals submitted in response to this program announcement/solicitation should be prepared and submitted in accordance with the general guidelines contained in the NSF *Grant Proposal Guide* (GPG). The complete text of the GPG is available electronically on the NSF Website at: http://www.nsf.gov/

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.

This solicitation contains information that supplements the standard Grant Proposal Guide (GPG) proposal preparation guidelines. Proposals for the support of cyberinfrastructure must include a full description of technical capabilities and the impact that these projects will make on chemical research and education. Investigators must identify the nature and size of the user community in the chemical sciences that will make principal use of the project's capabilities.

Cyberinfrastructure projects are intended, in part, to stimulate the development of new software environments; proposals must therefore include a description of the project in sufficient detail for reviewers to evaluate its technical merit and its potential benefit to chemical research and education. Transfer of new knowledge or technology to various academic, industrial and government sectors is an important broader impact of CRIF:CRF projects, and partnerships involving these sectors as appropriate are encouraged. Plans for broad dissemination of the project's results will be considered in evaluation of the proposal.

Detailed Proposal Format

NSF Cover and Certification Page. Proposals should provide a title in the format: "Cyberinfrastructure and Research Facilities:..."

Project Summary (1 page maximum). The project summary should include the rationale for the project, the current and intended user community, the nature of the project, the areas of research and education to be enhanced, and the principal development goals. Both intellectual merit and broader impacts must be addressed in separate statements or the proposal will be returned without review.

Project Description. This will be limited to 25 single-spaced pages. Within that overall page limitation, the proposal must address the following issues (a-g):

a. Rationale for and Impact of the Project. This introductory section should describe (1) the need for the proposed cyberinfrastructure; (2) the unique capabilities and services it will bring to research and education in the chemical sciences; and (3) the community to be served, including the extent to which the project broadens participation in the chemical sciences.

b. Detailed Description. This section should provide a full description of the proposed project including software to be developed, services to be provided, and core research areas to be investigated. The plan should detail the software improvement and development component, and explain how resources will be targeted at developing the next generation of research tools and techniques. Strategies to keep the proposed project at the forefront of research in the identified field must be described and necessary equipment upgrades planned and budgeted. Investigators should identify connections with other partners where appropriate, and the roles each will play in development. The proposal must contain a plan for dissemination of software tools.

c. Research Activities. This section should identify the senior personnel supervising the project's research, development, and training; summarize their current research activities; and describe the research projects to be enhanced by the project. Numbers of additional personnel whose research and education would depend on the proposed project (e.g., postdoctoral fellows, other professionals [such as programmers], graduate students, undergraduate students, K-12 teachers and students, informal science education organizations, international partners) should be estimated as closely as possible.

d. Service to the External Community. Because of the limited number of these projects, the PIs must demonstrate broad impact for a well-defined user community, and provide a plan for assessing performance and results of all activities supported by the project.

e. Management Plan. This section should describe the management plan for the proposed project, including plans for maintenance, such as software updates and archiving.

f. Education and Outreach. A CRIF:CRF project is a unique resource for education and training, for transfer of knowledge and technology, for exchanges of staff with other research organizations, and for outreach to communities currently underrepresented in science and engineering. Investigators should outline their plans to use the unique capabilities of the project to contribute to a stronger infrastructure in the chemical sciences through education and outreach activities.

g. Results from Prior Support. All senior personnel must report on results from prior NSF support up to a maximum of five pages in total. Also, an alphabetized list of all collaborators, with their affiliation, is required to appear in the Supplementary Documentation section (see below).

Budget. This section should provide a detailed estimate and explanation of the total budget projected for establishment and operation of the cyberinfrastructure project. Explain the basis for any cost estimates. Commitments of faculty, staff positions, or equipment should be detailed here, with estimated dollar values.

Biographical Sketches. Biographical sketches must be provided in the standard NSF format for all senior personnel whose core research activities would make major use of the cyberinfrastructure project, and for any other senior personnel who would draw major salary support from the cyberinfrastructure project.

Current and Pending Support. Current and pending support (agency, award number, total award amount, expected duration, and topic) for all research projects of each senior investigator must be summarized.

Supplementary Documentation. An alphabetized list of all collaborators, with their affiliations, is required.

Proposers are reminded to identify the program announcement/solicitation number (06-512) in the program announcement/solicitation block on the proposal Cover Sheet. Compliance with this requirement is critical to determining the relevant proposal processing guidelines. Failure to submit this information may delay processing.

B. Budgetary Information

Cost Sharing:

Cost sharing is not required by NSF in proposals submitted under this Program Solicitation.

C. Due Dates

Proposals must be submitted by the following date(s):

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

March 01, 2006

D. FastLane Requirements

Proposers are required to prepare and submit all proposals for this announcement/solicitation through the FastLane system. Detailed instructions for proposal preparation and submission via FastLane are available at: https://www.fastlane.nsf.gov/a1/newstan.htm. For FastLane user support, call the FastLane Help Desk at 1-800-673-6188 or e-mail fastlane@nsf.gov. The FastLane Help Desk answers general technical questions related to the use of the FastLane system. Specific questions related to this program announcement/solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this announcement/solicitation.

Submission of Electronically Signed Cover Sheets. The Authorized Organizational Representative (AOR) must electronically sign the proposal Cover Sheet to submit the required proposal certifications (see Chapter II, Section C of the Grant Proposal Guide for a listing of the certifications). The AOR must provide the required electronic certifications within five working days following the electronic submission of the proposal. Proposers are no longer required to provide a paper copy of the signed Proposal Cover Sheet to NSF. Further instructions regarding this process are available on the FastLane Website at: http://www.fastlane.nsf.gov

VI. PROPOSAL REVIEW INFORMATION

A. NSF Proposal Review Process

Reviews of proposals submitted to NSF are solicited from peers with expertise in the substantive area of the proposed research or education project. These reviewers are selected by Program Officers charged with the oversight of the review process. NSF invites the proposer to suggest, at the time of submission, the names of appropriate or inappropriate reviewers. Care is taken to ensure that reviewers have no conflicts with the proposer. Special efforts are made to recruit reviewers from non-academic institutions, minority-serving institutions, or adjacent disciplines to that principally addressed in the proposal.

The National Science Board approved revised criteria for evaluating proposals at its meeting on March 28, 1997 (NSB 97-72). All NSF proposals are evaluated through use of the two merit review criteria. In some instances, however, NSF will employ additional criteria as required to highlight the specific objectives of certain programs and activities.

On July 8, 2002, the NSF Director issued Important Notice 127, Implementation of new Grant Proposal Guide Requirements Related to the Broader Impacts Criterion. This Important Notice reinforces the importance of addressing both criteria in the preparation and review of all proposals submitted to NSF. NSF continues to strengthen its internal processes to ensure that both of the merit review criteria are addressed when making funding decisions.

In an effort to increase compliance with these requirements, the January 2002 issuance of the GPG incorporated revised proposal preparation guidelines relating to the development of the Project Summary and Project Description. Chapter II of the GPG specifies that Principal Investigators (PIs) must address both merit review criteria in separate statements within the one-page Project Summary. This chapter also reiterates that broader impacts resulting from the proposed project must be addressed in the Project Description and described as an integral part of the narrative.

Effective October 1, 2002, NSF will return without review proposals that do not separately address both merit review criteria within the Project Summary. It is believed that these changes to NSF proposal preparation and processing guidelines will more clearly articulate the importance of broader impacts to NSF-funded projects.

The two National Science Board approved merit review criteria are listed below (see the Grant Proposal Guide Chapter III.A for further information). The criteria include considerations that help define them. These considerations are suggestions and not all will apply to any given proposal. While proposers must address both merit review criteria, reviewers will be asked to address only those considerations that are relevant to the proposal being considered and for which he/she is qualified to make judgments.

What is the intellectual merit of the proposed activity?
How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields? How well qualified is the proposer (individual or team) to conduct the project? (If appropriate, the reviewer will comment on the quality of the prior work.) To what extent does the proposed activity suggest and explore creative and original concepts? How well conceived and organized is the proposed activity? Is there sufficient access to resources?

What are the broader impacts of the proposed activity?
How well does the activity advance discovery and understanding while promoting teaching, training, and learning? How well does the proposed activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.)? To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks, and partnerships? Will the results be disseminated broadly to enhance scientific and technological understanding? What may be the benefits of the proposed activity to society?

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

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

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

Additional Review Criteria:

- Qualifications of the project management to meet multiple purposes of research, education, and service simultaneously;

- Capability of the project to provide a needed state-of-the-art resource for chemical research and education;

- Breadth of the chemical sciences community that is impacted;

- Anticipated effect on the development of software;

- Complementarity of proposed project to existing FY05 CRIF:CRF grants (0535542; 0535640; 0535656; 0535710);

- Effectiveness of partnerships for transferring of new knowledge and technology to appropriate academic, industrial, and government sectors; and

- Use of unique project resources to enhance education and training of students

B. Review Protocol and Associated Customer Service Standard

All proposals are carefully reviewed by at least three other persons outside NSF who are experts in the particular field represented by the proposal. Proposals submitted in response to this announcement/solicitation will be reviewed by ad hoc and/or panel review. A site visit or reverse site visit may be part of the review process .

Reviewers will be asked to formulate a recommendation to either support or decline each proposal. The Program Officer assigned to manage the proposal's review will consider the advice of reviewers and will formulate a recommendation.

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

NSF is striving to be able to tell proposers whether their proposals have been declined or recommended for funding within six months. The time interval begins on the closing date of an announcement/solicitation, or the date of proposal receipt, whichever is later. The interval ends when the Division Director accepts the Program Officer's recommendation.

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

VII. AWARD ADMINISTRATION INFORMATION

A. Notification of the Award

Notification of the award is made to *the submitting organization* by a Grants Officer in the Division of Grants and Agreements. Organizations whose proposals are declined will be advised as promptly as possible by the cognizant NSF Program Division administering the program. Verbatim copies of reviews, not including the identity of the reviewer, will be provided automatically to the Principal Investigator. (See section VI.A. for additional information on the review process.)

B. Award Conditions

An NSF award consists of: (1) the award letter, which includes any special provisions applicable to the award and any numbered amendments thereto; (2) the budget, which indicates the amounts, by categories of expense, on which NSF has based its support (or otherwise communicates any specific approvals or disapprovals of proposed expenditures); (3) the proposal referenced in the award letter; (4) the applicable award conditions, such as Grant General Conditions (NSF-GC-1); * or Federal Demonstration Partnership (FDP) Terms and Conditions * and (5) any announcement or other NSF issuance that may be incorporated by reference in the award letter. Cooperative agreement awards are administered in accordance with NSF Cooperative Agreement Financial and Administrative Terms and Conditions (CA-FATC). Electronic mail notification is the preferred way to transmit NSF awards to organizations that have electronic mail capabilities and have requested such notification from the Division of Grants and Agreements.

Consistent with the requirements of OMB Circular A-16, *Coordination of Geographic Information and Related Spatial Data Activities*, and the Federal Geographic Data Committee, all NSF awards that result in relevant geospatial data must be submitted to Geospatial One-Stop in accordance with the guidelines provided at: www.geodata.gov.

More comprehensive information on NSF Award Conditions is contained in the NSF *Grant Policy Manual* (GPM) Chapter II, available electronically on the NSF Website at http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpm. The GPM is also for sale through the Superintendent of Documents, Government Printing Office (GPO), Washington, DC 20402. The telephone number at GPO for subscription information is (202) 512-1800. The GPM may be ordered through the GPO Website at http://www.gpo.gov/.

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

C. Reporting Requirements

For all multi-year grants (including both standard and continuing grants), the PI must submit an annual project report to the cognizant Program Officer at least 90 days before the end of the current budget period.

Within 90 days after the expiration of an award, the PI also is required to submit a final project report. Failure to provide final technical reports delays NSF review and processing of pending proposals for the PI and all Co-PIs. PIs should examine the formats of the required reports in advance to assure availability of required data.

PIs are required to use NSF's electronic project reporting system, available through FastLane, for preparation and submission of annual and final project reports. This system permits electronic submission and updating of project reports, including information on project participants (individual and organizational), activities and findings, publications, and other specific products and contributions. PIs will not be required to re-enter information previously provided, either with a proposal or in earlier updates using the electronic system.

VIII. CONTACTS FOR ADDITIONAL INFORMATION

General inquiries regarding this program should be made to:

- Celeste Rohlfing, Program Director, Directorate for Mathematical & Physical Sciences, Division of Chemistry, 1055 S, telephone: (703) 292-4962, fax: (703) 292-9037, email: crohlfin@nsf.gov

- Robert L. Kuczkowski, Program Officer, Directorate for Mathematical & Physical Sciences, Division of Chemistry, 1055 S, telephone: (703) 292-4953, fax: (703) 292-9037, email: rkuczkow@nsf.gov

For questions related to the use of FastLane, contact:

- Paul G. Spyropoulos, Computer Specialist, Directorate for Mathematical & Physical Sciences, Division of Chemistry, 1055 S, telephone: (703) 292-4968, fax: (703) 292-9037, email: pspyropo@nsf.gov

IX. OTHER PROGRAMS OF INTEREST

The NSF *Guide to Programs* is a compilation of funding for research and education in science, mathematics, and engineering. The NSF *Guide to Programs* is available electronically at http://www.nsf.gov/cgi-bin/getpub?gp. General descriptions of NSF programs, research areas, and eligibility information for proposal submission are provided in each chapter.

Many NSF programs offer announcements or solicitations concerning specific proposal requirements. To obtain additional information about these requirements, contact the appropriate NSF program offices. Any changes in NSF's fiscal year programs occurring after press time for the *Guide to Programs* will be announced in the NSF E-Bulletin, which is updated daily on the NSF Website at http://www.nsf.gov/home/ebulletin, and in individual program announcements/solicitations. Subscribers can also sign up for NSF's MyNSF News Service (http://www.nsf.gov/mynsf/) to be notified of new funding opportunities that become available.

Related NSF programs are listed below.

Program Title

Major Research Instrumentation: NSF 05-515

Instrumentation for Materials Research: NSF 05-522

Instrumentation for Materials Research-Major Instrumentation Projects: NSF 05-513

Earth Sciences Instrumentation and Facilities: NSF 04-507

Instrument Development for Biological Research: NSF 05-536

Multi-user Equipment and Instrumentation Resources for Biological Sciences: NSF 05-534

Cyberinfrastructure TEAM (CI-TEAM): Demonstration Projects: NSF 05-560

DDDAS: Dynamically Driven Data Application Systems: NSF 05-570

CISE Computing Research Infrastructure: NSF 04-588

Small Business Innovation Research and Small Business Technology Transfer: NSF 04-604

Course, Curriculum and Laboratory Improvement: NSF 04-565

Chemistry Research Instrumentation and Facilities: Instrument Development: NSF 04-534

Chemistry Research Instrumentation and Facilities: Departmental Multi-user Instrumentation: NSF 03-563

Scientific Computing Research Environments for the Mathematical Sciences: NSF 05-538

ABOUT THE NATIONAL SCIENCE FOUNDATION

The National Science Foundation (NSF) funds research and education in most fields of science and engineering. Awardees are wholly responsible for conducting their project activities and preparing the results for publication. Thus, the Foundation does not assume responsibility for such findings or their interpretation.

NSF welcomes proposals from all qualified scientists, engineers and educators. The Foundation strongly encourages women, minorities and persons with disabilities to compete fully in its programs. In accordance with Federal statutes, regulations and NSF policies, no person on grounds of race, color, age, sex, national origin or disability shall be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving financial assistance from NSF, although some programs may have special requirements that limit eligibility.

Facilitation Awards for Scientists and Engineers with Disabilities (FASED) provide funding for special assistance or equipment to enable persons with disabilities (investigators and other staff, including student research assistants) to work on NSF-supported projects. See the GPG Chapter II, Section D.2 for instructions regarding preparation of these types of proposals.

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

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

- **Location:**   4201 Wilson Blvd. Arlington, VA 22230

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

- **TDD (for the hearing-impaired):**   (703) 292-5090

- **To Order Publications or Forms:**

       Send an e-mail to: 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; project reports submitted by awardees will be used for program evaluation and reporting within the Executive Branch and to Congress. The information requested may be disclosed to qualified reviewers and staff assistants as part of the proposal review process; to applicant institutions/grantees to provide or obtain data regarding the proposal review process, award decisions, or the administration of awards; to government contractors, experts, volunteers and researchers and educators as necessary to complete assigned work; to other government agencies needing information as part of the review process or in order to coordinate programs; and to another Federal agency, court or party in a court or Federal administrative proceeding if the government is a party. Information about Principal Investigators may be added to the Reviewer file and used to select potential candidates to serve as peer reviewers or advisory committee members. See Systems of Records, NSF-50, "Principal Investigator/Proposal File and Associated Records," 63 Federal Register 267 (January 5, 1998), and NSF-51, "Reviewer/Proposal File and Associated Records," 63 Federal Register 268 (January 5, 1998). Submission of the information is voluntary. Failure to provide full and complete information, however, may reduce the possibility of receiving an award.

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06/09/05
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