

Research in Disabilities Education (RDE)

Program Solicitation

NSF 05-623

Replaces Document(s):

NSF 04-610



National Science Foundation

Directorate for Education & Human Resources
Division of Human Resource Development

Letter of Intent Due Date(s) (optional):

January 16, 2006

All program tracks (encouraged)

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

February 13, 2006

All program tracks

REVISION NOTES

In furtherance of the President's Management Agenda, in Fiscal Year 2006, 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 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

General Information

Program Title:

Synopsis of Program:

The Research in Disabilities Education (RDE) program supports efforts to increase the participation and achievement of persons with disabilities in science, technology, engineering, and mathematics (STEM) education and careers. Meritorious projects from a diversity of institutions are supported via the RDE Demonstration, Enrichment, and Information Dissemination (RDE-DEI) program track. Promising research efforts are also developed further via awards under the Focused-Research Initiatives (RDE-FRI) program track. In the third program track, broadly applicable methods and products are disseminated for widespread use, commercialization, or inclusion in the activities of program-sponsored Regional Alliances for persons with disabilities in STEM education (RDE-RAD). RDE Alliances serve to inform the public, government, and industry about proven-good practices in the classroom, promote broader awareness of disabilities issues, and define specific areas of accessibility and human learning in need of further attention by educators and the research community.

Cognizant Program Officer(s):

- Ted A. Conway, Program Director, telephone: (703) 292-4655, fax: (703) 292-9018, email: tconway@nsf.gov

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

- 47.076 --- Education and Human Resources

Award Information

Anticipated Type of Award: Standard Grant or Continuing Grant or Cooperative Agreement or Other Grant standard or continuing grants (PPD-DEI and PPD-FRI); Cooperative Agreements (PPD-RAD).

Estimated Number of Awards: 10 to 12 - 6 to 7 standard grants (RDE-DEI); 3 to 4 continuing grants (RDE-FRI); and one Cooperative Agreement (RDE-RAD)

Anticipated Funding Amount: \$4,400,000 Pending availability of funds. Up to \$100,000 and up to one year's duration for RDE-DEI standard grants. Up to \$300,000 and up to three years' duration for RDE-FRI continuing grants. Up to \$3,000,000 and up to five years' duration for RDE-RAD agreements

Eligibility Information

Organization Limit:

Proposals may only be submitted by the following:

- There is no organization limit on proposals submitted under the RDE-DEI and RDE-FRI program tracks. The categories of proposers identified in the *Grant Proposal Guide* (GPG) are eligible to submit proposals under both of those program tracks.

A proposal submitted under the RDE-RAD program track must be submitted by a U.S. college or university in the United States.

Joint or linked proposals are not permitted and may be returned without review. Cooperative or collaborative efforts should instead be presented as subcontracted components on a single proposal that is submitted by the lead organization.

Colleges and universities already participating as a lead or partner institution within a current RAD award are not eligible to be a lead institution on a new RAD proposal until their current project funding has ended.

Proposals from minority-serving institutions, including Historically Black Colleges and Universities

(HBCUs), Hispanic-Serving Institutions, and Tribal Colleges and Universities are especially encouraged.

PI Limit:

Each PI may be included on only 1 proposal to this year's RDE competition, regardless of program track and including possible Co-PI designations on competing proposals.

An individual who is a PI on one RDE proposal may not be included as a PI or a Co-PI on any competing proposal. An individual who is a Co-PI on one RDE proposal may not be included as a PI or a Co-PI on any competing proposal.

Note: RDE funds institutional sponsors to conduct basic and applied research in STEM fields as related to disabilities. The program does not offer individual stipends, scholarships, or living expenses in direct support of individuals with disabilities. However, in some circumstances, individuals may qualify to apply for sub-grants from RDE projects as identified in the proposal and sanctioned by the PI and his or her institutional sponsor. For further details on Facilitation Awards for Scientists and Engineers with Disabilities (FASSED), consult the guidelines presented in [NSF 02-115](#), as applicable to all NSF programs.

Limit on Number of Proposals per Organization:

Only one RDE proposal may be submitted by a RAD lead institution or by a DEI, FRI or RAD principal investigator or co-principal investigator to each year's competition. An institution or organization may be included in only one RDE proposal, either as a lead institution or as a partner organization, but not both.

Limit on Number of Proposals per PI:

Only one RDE proposal may be submitted by a RAD lead institution or by a DEI, FRI or RAD principal investigator or co-principal investigator to each year's competition. An institution or organization may be included in only one RDE proposal, either as a lead institution or as a partner organization, but not both.

Proposal Preparation and Submission Instructions

A. Proposal Preparation Instructions

- **Letters of Intent:** Submission of Letters of Intent is optional. Please see the full text of this solicitation for further information.
- **Full Proposal Instructions:** Standard GPG Guidelines Apply

B. Budgetary Information

- **Cost Sharing Requirements:** Cost Sharing is not required by NSF.
- **Indirect Cost (F&A) Limitations:** Not applicable.
- **Other Budgetary Limitations:** Other budgetary limitations apply. Please see the full text of this solicitation for further information.

C. Due Dates

- **Letter of Intent Due Date(s) (optional):**

January 16, 2006

All program tracks (encouraged)

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

February 13, 2006

All program tracks

Proposal Review Information Criteria

Merit Review Criteria: National Science Board approved criteria apply.

Award Administration Information

Award Conditions: Standard NSF award conditions apply

Reporting Requirements: Additional reporting requirements apply. Please see the full text of this solicitation for further information.

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I. INTRODUCTION

The National Science Foundation (NSF) strives to ensure the vitality of the United States in all areas of the scientific and technical enterprise. Such efforts include the utilization of the full diversity and ability of the nation's diverse human capital. The programs of the Division of Human Resource Development (HRD), located in the Directorate for Education and Human Resources (EHR), contribute to this goal by supporting activities that increase the participation of communities traditionally underrepresented in science, technology, engineering, and mathematics (STEM). Such communities particularly include underrepresented minorities, women and girls, and persons with disabilities.

Within HRD, the Research in Disabilities Education (RDE) program is committed to increasing the number of persons with disabilities engaged in STEM careers by:

- Encouraging needed changes in academic and professional climates;
- Developing the awareness and recognition of the needs and capabilities of students with disabilities;
- Promoting the accessibility and appropriateness of instructional materials, media, and educational technologies; and
- Increasing the availability of student-enrichment resources, including mentoring activities.

In short, RDE efforts are dedicated to changing the factors that historically have restricted the approaches to STEM disciplines that are available to persons with disabilities. Reducing such barriers is prerequisite to the advancement of such individuals as they prepare for engaging education and fulfilling careers in STEM fields. The RDE program is dedicated to providing an enriching, supportive, and relevant experience in STEM education for persons with disabilities at all academic levels. Outcomes of the program's diverse areas of support seek the proportionate and fully inclusive participation of persons with disabilities in the nation's STEM workforce.

For Fiscal Year 2006, RDE will support awards in: Demonstration, Enrichment, and Information Dissemination (RDE-DEI); Focused Research Initiatives (RDE-FRI); and Regional Alliances for Persons with Disabilities in STEM education (RDE-RAD). See Section II. Program Description for details about each of these program tracks.

II. PROGRAM DESCRIPTION

Previous projects designed to recruit, train, and retain students with disabilities in STEM activities have consistently identified common elements that succeed in increasing the number of such students in STEM education and preparing them for STEM careers. Key among these activities are:

- Hands-on science experiences in pre-college science education environments;
- Early identification and nurturing of an interest in STEM in K-12;
- Formal research experiences as undergraduates;
- Educating and guiding faculty and caregiver attitudes toward full inclusion of students with disabilities;
- Inclusive curricula;
- Accessible laboratories;
- Fostering student self advocacy and encouraging peer interaction;
- Coordinated bridge programs between academic levels; and
- Mentoring by successful STEM professionals and students who have disabilities.

Comprehensive projects that are able to implement most or all of these elements have demonstrated success in recruiting, preparing, and retaining students with disabilities in STEM education. Such projects have demonstrated particular success in graduating students with disabilities with baccalaureate degrees leading directly to graduate training or to employment in STEM fields.

In addition to these proven methods, the RDE program supports efforts to search for new and innovative technologies that facilitate the students' ability to succeed in STEM activities. It is expected that appropriate Assistive Technology (AT) will be integrated into the learning activities of students' involved in the projects. An evaluation of the effectiveness of the AT, with recommendations for further improvement and universality of design, should also be conducted. As need requires, innovative AT development should also be a part of the proposed activities with universality of application being a main design component.

Project Evaluation

All proposals submitted to the Research in Disabilities Education program under any track must identify the specific project outcomes to be targeted for each year of the proposed award. Techniques and/or instruments to be used for measuring these outcomes must be described in the Project Description as a part of the evaluation plan.

Program Evaluation

Periodically, NSF evaluates the impact of the entire RDE program. Awardees will be required to participate in a program-level evaluation by which NSF can assess quantitative gains in relevant measures for students with disabilities and make qualitative assessments of the process of change. Individual projects are expected to cooperate with third-party program evaluation and respond to inquiries, interviews and other approaches for collecting evaluation data across individual grants.

Outcome Measures

For all RDE proposals, the effort required for developing a research and evaluation plan and collecting, measuring, and reporting appropriate outcome data should be supported in the proposed budget. The following are illustrative of outcome measures to be reported: number of total participants, including demographics; number of students with disabilities enrolled in STEM courses (majors and non-majors); accommodations or assistive-technology used and their level of success; number of these students obtaining degrees in a STEM discipline; the number of participants entering graduate school or careers in STEM fields; and comparable data for activities not directly supported by the project (i.e., 'control' cohorts).

Similar outcome measures must be reported for participants in faculty-enhancement activities. Complete bibliographic citations for journal publications, conference presentations (date, location, number of attendees), media coverage, workshops, software developed, survey results, uniform resource locators (URLs) and other products derived from RDE support are expected in the project's annual progress reports. Addressing relevant educational research questions and the publication of such results in peer-reviewed journals (in mainstream as well as disabilities-related areas) are especially encouraged.

Use of Human Subjects

NSF adheres to Subpart A (The Common Rule for the Protection of Human Subjects) of 45 CFR Part 690: Federal Policy for the Protection of Human Subjects. This document defines a human subject as: "A living individual about whom an investigator (whether professional or student) conducting research obtains 1) data through intervention or interaction with the individual, or 2) identifiable private information. Intervention includes both physical procedures by which data are gathered (e.g., venipuncture) and the manipulations of the subject or the subject's environment that are performed for research purposes. Interaction includes communication or interpersonal contact between investigator and subject. Private information includes information about behavior that occurs in a context in which an individual can reasonably expect that no observation or recording is taking place, and information which has been provided for specific purposes by an individual and which the individual can reasonably expect will not be made public (for example, a medical record). Private information must be individually identifiable (i.e., the identity of the subject is or may readily be ascertained by the investigator or associated with the information) in order for obtaining the information to constitute research involving human subjects." The Inspector General does monitor and audit such declarations, and RDE panelists will be asked to check for appropriate institutional review board (IRB) certification on all proposals. The certification may not be finalized at the time of proposal submission (and ultimately does not apply to declined submissions) but should be dated and recorded as pending, as applicable, and included along with all full proposal submissions. Principal Investigators who are unsure whether their project applies as using human subjects according to their institutional guidelines should check with their IRB or sponsored projects office (SPO).

Demonstration, Enrichment, and Information Dissemination (RDE-DEI)

The goals of RDE awards in the Demonstration, Enrichment, and Information Dissemination (RDE-DEI) program track are to:

- Further institutionalize products and other educational materials that promote accessibility to STEM disciplines and career experiences by students with disabilities;
- Enhance the STEM learning experience for students with disabilities; and
- Disseminate information about model programs, exceptional products, successful research methods, and proven education practices to a broad national audience.

Proposals to the RDE-DEI track are evaluated on their potential for innovation and promise for future research efforts within a short time for development and testing (up to 1 year) and a limited budget (up to \$100,000).

See Section III. Eligibility Information for further information specific to the RDE-DEI program track.

Focused Research Initiatives (RDE-FRI)

The goals of the RDE awards for Focused Research Initiatives (RDE-FRI) are to:

- Encourage research and development of specific but utilitarian assistive technologies that will help persons with disabilities pursue careers in STEM;
- Build tools for students with disabilities that can quickly be developed and effectively deployed in the educational environment; and
- Add value to the education of persons with disabilities in STEM.

Proposals to the RDE-FRI track are evaluated on their potential for solving specific problems in a short period of time (up to 3 years) with a limited budget (up to \$300,000) and the immediate educational impact of applying this research.

See Section III. Eligibility Information for further information specific to the RDE-FRI program track.

Regional Alliances for Persons with Disabilities in STEM Education (RDE-RAD)

RDE supports the design and operation of comprehensive Regional Alliances for Persons with Disabilities in STEM education (RDE-RAD). RAD projects emphasize broader implementation of elements that have proven successful under prior NSF or other support. These Regional Alliances are conceived as networks established by universities and colleges with linkages throughout academe and in partnership with industry, government, and national research laboratories. Academic partnerships should include 2-year and 4-year institutions as well as pre-college educational entities.

The Alliances must be comprehensive, multidisciplinary programs designed to: 1) increase the quantity and quality of students with disabilities receiving associate and baccalaureate degrees in STEM disciplines; 2) identify early potential in STEM students with disabilities, then nurture such interest with appropriate activities, relevant content, and advisement for careers or advanced study; and/or 3) support and sustain the intellectual endeavors of STEM professionals who have acquired disabilities later in their careers. To achieve these goals, RDE Regional Alliances provide comprehensive educational and research experiences, quality support services for recruitment and retention, and career-development activities for students, counselors, and faculty alike.

Proposals to the RDE-RAD track are evaluated on their potential for incorporating and disseminating proven-good practices in disabilities education and research (including the outcomes of DEI and FRI projects); changing faculty and employer attitudes and institutional cultures by making curricula and employment programs more inclusive and accessible; and developing student self-advocacy, STEM literacy and workforce preparation. The proposed efforts are expected to be expansive, involving a multi-faceted network of institutions in a Cooperative Agreement representing a substantial investment of time (up to 5 years) and funding (up to \$3,000,000) with an eye toward autonomy of the Alliance after federal support is expended.

In their project design, proposers are strongly encouraged to give specific attention to the critical issues that hinder or deter the inclusion and participation by persons with disabilities in STEM education and careers. These activities include, but are not limited to:

- Full participation in elementary, secondary, and undergraduate-level mathematics and science courses;
- Participation in science-enrichment activities through intra- and extra-curricular, hands-on research experiences;
- Access to appropriate mathematics and science instructional materials, media, educational technologies, and laboratory experiences;
- Interaction with appropriate role models and mentors;
- Scheduled and drop-in STEM tutorial centers with resources applicable to students with disabilities;
- Positive, informed, and resourceful attitudes of pre-college teachers, counselors, and higher education faculty;
- Relevant STEM summer internships, career guidance, and research experiences for high school and undergraduate students with disabilities; and
- Bridge programs encouraging coherent transitions between academic levels and institution types.

RDE Regional Alliances should also conduct appropriate formative and summative evaluation and research activities to assess the effectiveness of strategies that improve participation of students with disabilities in STEM education. Examples of activities that are appropriate in this category include, but are not limited to:

- Examination of effective methods for teaching science or mathematics so that students with disabilities perform competitively with other students on their education level;
- Adaptation of existing science or mathematics curricula so that they are appropriate for all students including those with disabilities (to be conducted collaboratively with the publisher or other disseminators to ensure rapid dissemination of the new products);
- Development or adaptation of educational technology or media to ensure independent use by students with disabilities;
- Efforts to overcome stereotyping of persons with disabilities among parents, teachers, peers, and co-workers;
- Provision of science-enrichment activities for students with disabilities; and
- Exploration of the fullest use of scientists with disabilities as mentors to improve the interest, performance, and retention of students with disabilities in STEM education.

Note: The activities listed above represent general guidelines; the strongest proposals will detail specific plans, timelines, and activities in pursuit of these ends, as suited to the particular and quantified needs of the community to be addressed in the proposed scope of work.

See Section III. Eligibility Information for further information specific to the RDE-RAD program track.

III. AWARD INFORMATION

RDE-DEI awards will be standard grants up to a total of \$100,000 for up to one year's duration. Six to seven such awards are anticipated in FY 2006.

RDE-FRI awards will be standard or continuing grants up to a total \$300,000 for up to three years' duration. Three to four such awards are anticipated in FY 2006.

RDE-RAD awards are Cooperative Agreements up to a total of \$3,000,000 for up to five years' duration. One such award is expected in FY 2006.

Estimated program budget, number of awards, and average award size/duration are subject to the availability of program funds. **Awards will not necessarily be made in all program categories detailed in this solicitation for any given year.**

IV. ELIGIBILITY INFORMATION

Organization Limit:

Proposals may only be submitted by the following:

- There is no organization limit on proposals submitted under the RDE-DEI and RDE-FRI program tracks. The categories of proposers identified in the *Grant Proposal Guide* (GPG) are eligible to submit proposals under both of those program tracks.

A proposal submitted under the RDE-RAD program track must be submitted by a U.S. college or university in the United States.

Joint or linked proposals are not permitted and may be returned without review. Cooperative or collaborative efforts should instead be presented as subcontracted components on a single proposal that is submitted by the lead organization.

Colleges and universities already participating as a lead or partner institution within a current RAD award are not eligible to be a lead institution on a new RAD proposal until their current project funding has ended.

Proposals from minority-serving institutions, including Historically Black Colleges and Universities (HBCUs), Hispanic-Serving Institutions, and Tribal Colleges and Universities are especially encouraged.

PI Limit:

Each PI may be included on only 1 proposal to this year's RDE competition, regardless of program track and including possible Co-PI designations on competing proposals.

An individual who is a PI on one RDE proposal may not be included as a PI or a Co-PI on any competing proposal. An individual who is a Co-PI on one RDE proposal may not be included as a PI or a Co-PI on any competing proposal.

Note: RDE funds institutional sponsors to conduct basic and applied research in STEM fields as related to disabilities. The program does not offer individual stipends, scholarships, or living expenses in direct support of individuals with disabilities. However, in some circumstances, individuals may qualify to apply for sub-grants from RDE projects as identified in the proposal and sanctioned by the PI and his or her institutional

sponsor. For further details on Facilitation Awards for Scientists and Engineers with Disabilities (FASSED), consult the guidelines presented in [NSF 02-115](#), as applicable to all NSF programs.

Limit on Number of Proposals per Organization:

Only one RDE proposal may be submitted by a RAD lead institution or by a DEI, FRI or RAD principal investigator or co-principal investigator to each year's competition. An institution or organization may be included in only one RDE proposal, either as a lead institution or as a partner organization, but not both.

Limit on Number of Proposals per PI:

Only one RDE proposal may be submitted by a RAD lead institution or by a DEI, FRI or RAD principal investigator or co-principal investigator to each year's competition. An institution or organization may be included in only one RDE proposal, either as a lead institution or as a partner organization, but not both.

Additional Eligibility Info:

General Criteria for all RDE Proposals

- Proposals from minority-serving institutions, including Historically Black Colleges and Universities (HBCUs), Hispanic-Serving Institutions, and Tribal Colleges and Universities are especially encouraged.
- It is strongly recommended that the budget and timeline estimates submitted be reasonable for the scale and scope of work, as proposed. Proposals that significantly differ from the recommended duration or amount of funding stipulated in this solicitation may be returned without review.
- Joint or linked proposals are not permitted and may be returned without review.
- Each PI may be included on only 1 proposal to this year's RDE competition, regardless of program track and including possible Co-PI designations on competing proposals.
- An individual who is a PI on one RDE proposal may not be included as a PI or a Co-PI on any competing proposal. An individual who is a Co-PI on one RDE proposal may not be included as a PI or a Co-PI on any competing proposal.

See Section II. Program Description for further details on the RDE program tracks.

Specific Criteria for RDE-DEI Proposals

- The categories of proposers identified in the *Grant Proposal Guide* (GPG) are eligible to submit proposals under the RDE program tracks.

See Section II. Program Description for further details on the RDE-DEI program track.

Specific Criteria for RDE-FRI Proposals

- Principal investigators with previous support in the form of RDE-DEI planning or standard grants or prior funding from other disabilities-related programs are especially encouraged to submit proposals, however, such support is not prerequisite to RDE-FRI proposals.
- The categories of proposers identified in the *Grant Proposal Guide* (GPG) are eligible to submit proposals under the RDE program tracks.

See Section II. Program Description for further details on the RDE-FRI program track.

Specific Criteria for RDE-RAD Proposals

- International cooperation is encouraged, however, the lead institution must be a U.S. college or university. Accordingly, the predominant beneficiaries of the Alliance should be U.S. students and professionals with disabilities participating in STEM fields.
- One institution is expected to submit the RAD proposal on behalf of the entire Alliance. Joint or linked proposals are not permitted and will be returned without review. If all or part of the project will be performed off-campus or away from organizational headquarters, a rationale for this should be provided.
- For the purposes of RAD proposals, the 'region' applied to the proposed Alliance is at the proposer's discretion. It does not denote any particular geographic uniqueness and may include intra-state, multi-state, national or

international cooperation between institutions, industry, associations, non-profit organizations and societies, and government agencies, as appropriate to the proposed scope of work.

- The proposal should describe clearly the role of the all partner organizations, and should specify the managerial arrangements contemplated. Partner institutions may be listed as secondary grantees or subcontractors, as appropriate.

See Section II. Program Description for further details on the RDE-RAD program track.

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

Letters of Intent (*optional*):

Letters of intent are encouraged and should be submitted for all program tracks. Letters of intent are submitted electronically via FastLane. Letters of intent are expected to be brief and should not be developed as preliminary proposals. They should include the names and affiliations of the key investigators with a brief (50 - to 100 - word) summary of the problem to be addressed.

Letter of Intent Management Conditions:

When submitting a Letter of Intent through FastLane in response to this Program Solicitation please note the conditions outlined below:

- SPO Submission is Not Required when submitting Letters of Intent
- Submission of multiple Letters of Intent are Not allowed

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

- Full proposals submitted via FastLane: Proposals submitted in response to this program solicitation should be prepared and submitted in accordance with the general guidelines contained in the NSF Grant Proposal Guide (GPG). The complete text of the GPG is available electronically on the NSF website at: http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpg. Paper copies of the GPG may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from 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.

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.

B. Budgetary Information

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

Indirect Cost (F&A) Limitations: Not applicable.

Other Budgetary Limitations:

RDE-DEI awards are standard grants of up to a total of \$100,000 for up to 1 year's duration.

RDE-FRI awards are standard or continuing grants of up to a total \$300,000 for up to 3 years' duration.

RDE-RAD awards are Cooperative Agreements of up to a total of \$3,000,000 for up to 5 years' duration.

C. Due Dates

- **Letter of Intent Due Date(s) (optional):**

January 16, 2006

All program tracks (encouraged)

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

February 13, 2006

All program tracks

D. FastLane Requirements

- **For Proposals Submitted Via FastLane:**

Detailed technical 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 solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this 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/>

- **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. The Grants.gov Contact Center answers general technical questions related to the use of Grants.gov. Specific questions related to this program solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this solicitation.

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

VI. NSF PROPOSAL PROCESSING AND REVIEW PROCEDURES

Proposals received by NSF are assigned to the appropriate NSF program 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

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 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.

B. Review and Selection Process

Proposals submitted in response to this program solicitation will be reviewed by Adhoc Review 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

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 also are administered in accordance with NSF Cooperative Agreement Terms and Conditions (CA-1). 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.

*These documents may be accessed electronically on NSF's Website at http://www.nsf.gov/home/grants/grants_gac.htm. Paper copies may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from pubs@nsf.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/cgi-bin/getpub?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>.

C. Reporting Requirements

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

or awards require more frequent project reports). Within 90 days after expiration of a grant, the PI also is required to submit a final project report.

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.

See subsections on Project Evaluation and Outcome Measures in Section II. Program Description.

VIII. AGENCY CONTACTS

General inquiries regarding this program should be made to:

- Ted A. Conway, Program Director, telephone: (703) 292-4655, fax: (703) 292-9018, email: tconway@nsf.gov

For questions related to the use of FastLane, contact:

- FastLane Help Desk, telephone: 1-800-673-6188; e-mail: fastlane@nsf.gov.
- Victoria A. Smoot, Financial Operations Specialist, 815 N, telephone: (703) 292-4677, fax: (703) 292-9018, email: vsmoot@nsf.gov
- Toni Edquist, Program Assistant, HRD, Directorate for Education & Human Resources, Division of Human Resource Development, Room 815 N. Telephone: (703) 292-4649, fax: (703) 292-9018, email: tedquist@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.

IX. OTHER INFORMATION

The NSF Website provides the most comprehensive source of information on NSF Directorates (including contact information), programs and funding opportunities. Use of this Website by potential proposers is strongly encouraged. In addition, 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

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
 - 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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