

# Research in Disabilities Education (RDE)

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## Program Solicitation

NSF 08-527

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*Replaces Document(s):*

NSF 07-511

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### National Science Foundation

Directorate for Education & Human Resources  
Division of Human Resource Development

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

April 10, 2008

Innovation through Institutional Integration

April 11, 2008

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

April 11, 2008

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

April 21, 2008

Focused Research Initiatives (RDE-FRI)

## REVISION NOTES

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Program revisions include an extension of the maximum duration of the Demonstration, Enrichment, and Information Dissemination (RDE-DEI) awards to 24 months. The budget limit for the RDE-DEI awards is now \$150,000.

Changes to the Focused Research Initiatives (RDE-FRI) awards include a revised budget limit of \$375,000.

A new track for Innovation through Institutional Integration (I<sup>3</sup>) has been added. I<sup>3</sup> challenges institutions to think strategically about the creative integration of NSF-funded awards and is itself an integrative, cross-cutting effort within the Directorate for Education and Human Resources (EHR). For Fiscal Year 2008, proposals are being solicited in six EHR programs that advance I<sup>3</sup> goals: CREST, ITEST, MSP, Noyce, RDE, and TCUP. All proposals submitted to I<sup>3</sup> through these programs have a common due date and will be reviewed in competition with one another. Awards will be made to institutions of higher education (including two- and four-year colleges). Given the focus on institutional integration, an institution may submit only one proposal to the I<sup>3</sup> competition in only one program.

## SUMMARY OF PROGRAM REQUIREMENTS

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## General Information

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### Program Title:

Research in Disabilities Education (RDE)

### Synopsis of Program:

The RDE program seeks to broaden the participation and achievement of people with disabilities in all fields of science, technology, engineering, and mathematics (STEM) education and associated professional careers. The RDE program has been funding this objective since 1994 under the prior name "Program for Persons with Disabilities." Particular emphasis is placed on increasing the number of students with disabilities successfully completing quality associate, undergraduate and graduate degrees in STEM and increasing the number of students with disabilities entering the professional STEM workforce. This goal is addressed by three RDE program tracks: Regional Alliances for Persons with Disabilities in STEM Education (RDE-RAD); Focused Research Initiatives (RDE-FRI); and Demonstration, Enrichment, and Information Dissemination projects (RDE-DEI).

Innovation through Institutional Integration (I<sup>3</sup>) projects enable institutions to think and act strategically about the creative integration of NSF-funded awards, with particular emphasis on awards managed through programs in the Directorate for Education and Human Resources (EHR), but not limited to those awards. For Fiscal Year 2008, proposals are being solicited in six EHR programs that advance I<sup>3</sup> goals: CREST, ITEST, MSP, Noyce, RDE, and TCUP.

### Cognizant Program Officer(s):

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

- 47.076 --- Education and Human Resources

## Award Information

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

**Estimated Number of Awards:** 10 to 20 awards per year pending the availability of funds with a mix of Regional Alliances for Persons with Disabilities in STEM Education awards, Focused Research Initiatives awards, and Demonstration, Enrichment, and Information Dissemination awards. Focused Research Initiatives awards will be up to 3 years. Demonstration, Enrichment, and Information Dissemination awards will be up to 2 years. Regional Alliances for Persons with Disabilities in STEM Education awards will be for up to 5 years, with years 4 and 5 depending on performance. For the Innovation through Institutional Integration competition, up to 10 continuing awards in this cross-divisional effort will be made, pending availability of funds.

**Anticipated Funding Amount:** \$4,200,000 in FY 2008 for new awards in all RDE program tracks pending availability of funds. \$10,000,000 over 5 years for Innovation through Institutional Integration projects which are being requested across multiple EHR programs, pending availability of funds.

## Eligibility Information

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### Organization Limit:

Proposals may only be submitted by the following:

- For the RDE-RAD, RDE-FRI, and RDE-DEI tracks: Non-profit, non-academic organizations: Independent museums, observatories, research labs, professional societies and similar organizations in the U.S. associated with educational or research activities, and universities and colleges: U.S. universities and two- and four-year colleges (including community colleges).

Eligibility for Innovation through Institutional Integration (I<sup>3</sup>) is limited to institutions of higher education (including two- and four-year colleges) located and accredited in the US, acting on behalf of their faculty members.

**PI Limit:**

None specified for the RDE-RAD, RDE-FRI, and RDE-DEI tracks.

The PI for an Innovation through Institutional Integration (I<sup>3</sup>) proposal must be the university provost or equivalent, unless the proposal is exclusively for I<sup>3</sup> STEM educational or related research.

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

None Specified for the RDE-RAD, RDE-FRI, and RDE-DEI tracks.

For Fiscal Year 2008, proposals are being solicited in six EHR programs that advance I<sup>3</sup> goals: CREST, ITEST, MSP, Noyce, RDE, and TCUP. Given the focus on institutional integration, an institution may submit only one proposal to the I<sup>3</sup> competition in only one program.

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

None Specified

**Proposal Preparation and Submission Instructions**

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**A. Proposal Preparation Instructions**

- **Letters of Intent:** Not Applicable
- **Preliminary Proposal Submission:** Not Applicable
- **Full Proposals:**
  - Full Proposals submitted via FastLane: NSF Proposal and Award Policies and Procedures Guide, Part I: Grant Proposal Guide (GPG) Guidelines apply. The complete text of the GPG is available electronically on the NSF website at: [http://www.nsf.gov/publications/pub\\_summ.jsp?ods\\_key=gpg](http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpg).
  - Full Proposals submitted via Grants.gov: NSF Grants.gov Application Guide: A Guide for the Preparation and Submission of NSF Applications via Grants.gov Guidelines apply (Note: The NSF Grants.gov Application Guide is available on the Grants.gov website and on the NSF website at: <http://www.nsf.gov/bfa/dias/policy/docs/grantsgovguide.pdf>)

**B. Budgetary Information**

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

**C. Due Dates**

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

April 10, 2008

April 11, 2008

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

April 11, 2008

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

April 21, 2008

Focused Research Initiatives (RDE-FRI)

## Proposal Review Information Criteria

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

## Award Administration Information

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**Award Conditions:** Additional award conditions apply. Please see the full text of this solicitation for further information.

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

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## I. INTRODUCTION

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One of the National Science Foundation's (NSF) key strategic goals is to cultivate a world-class, broadly inclusive science and engineering workforce, and expand the scientific literacy of all citizens (NSF Strategic Plan FY 2006-2011). Investments are directed at programs that strengthen scientific and engineering research potential and education programs at all levels. These outcomes are essential to the U.S. as we progress toward an increasingly technological job market and a scientifically complex society.

The Division of Human Resource Development (HRD) serves as the focal point for NSF's agency-wide commitment to broadening the participation of all individuals in STEM. HRD programs reflect NSF's commitment to developing the resources of the STEM community as a whole and ensuring an adequately trained research and development workforce. To meet the challenges presented by the nation's increasing needs in STEM, the RDE program supports efforts to increase the success of people with disabilities in STEM education pathways and professional careers.

More broadly, HRD programs, including the RDE program, the Research on Gender in Science and Engineering program (GSE), the Tribal Colleges and Universities Program (TCUP), Historically Black Colleges and Universities Undergraduate Program (HBCU-UP), the Centers of Research Excellence in Science and Technology (CREST), the Louis Stokes Alliances for Minority Participation (LSAMP), the Alliances for Graduate Education and the Professoriate (AGEP), and ADVANCE: Increasing the Participation and Advancement of Women in Academic Science and Engineering Careers provide coordinated and integrated approaches to developing and leveraging individual talents and institutional infrastructures. Managed synergistically, these programs enable successful transitions from high school to associate and baccalaureate-level study and from undergraduate STEM programs to the attainment of graduate degrees. Such efforts serve to increase the number of underrepresented minorities, women, and persons with disabilities well prepared for the STEM workforce of the future.

Innovation through Institutional Integration (I<sup>3</sup>) projects enable institutions to think and act strategically about the creative integration of NSF-funded awards, with particular emphasis on awards managed through programs in the Directorate for Education and Human Resources (EHR), but not limited to those awards. For Fiscal Year 2008, proposals are being solicited in six EHR programs that advance I<sup>3</sup> goals: CREST, ITEST, MSP, Noyce, RDE, and TCUP.

## II. PROGRAM DESCRIPTION

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### A. PROGRAM GOALS

The Research in Disabilities Education program seeks to broaden the participation and achievement of people with disabilities in all fields of science, technology, engineering, and mathematics. Particular emphasis is placed on increasing the number of students with disabilities who successfully complete quality associate, undergraduate and graduate degrees in STEM and increasing the number of students with disabilities entering the professional STEM workforce. These two primary goals are addressed when students with disabilities participate in STEM activities and courses at the middle school, high school, undergraduate and graduate levels; and when students with disabilities demonstrate improved academic performance in STEM courses and activities. The full involvement of students with disabilities in STEM courses and activities requires attention to the following RDE program objectives:

- Increasing public awareness and recognition of the capabilities and strengths of people with disabilities in STEM fields with evidence-based information that demonstrates success;
- Developing, promoting and evaluating the use of accessible and appropriate assistive technologies, instructional materials and learning resources for students with disabilities in STEM and for STEM professionals;
- Creating and implementing new STEM learning methods and teaching pedagogy, that incorporate universal design learning approaches, to improve the engagement and performance of students with disabilities in STEM coursework and lead to student success in STEM;
- Employing proven practices, such as mentoring, to support the success of students with disabilities in STEM academic courses, critical academic junctures, research and industry internships and externships, and transitions to the STEM workforce.

This solicitation requests proposals for new projects in each of the three RDE program tracks:

- The Regional Alliances for Persons with Disabilities in STEM Education track;
- The Focused Research Initiatives track; and
- The Demonstration, Enrichment, and Information Dissemination track.

This solicitation also requests proposals for new projects in the Directorate for Education and Human Resources track: Innovation through Institutional Integration.

## B. PROGRAM PRIORITIES

- Proposals that emphasize increasing the number of students with disabilities who successfully complete quality associate, undergraduate and graduate degrees in STEM and/or increasing the number of students with disabilities entering the professional STEM workforce are strongly encouraged.
- Proposals from minority-serving institutions, including Historically Black Colleges and Universities, Hispanic-Serving Institutions, and Tribal Colleges and Universities are especially encouraged. Additionally, proposals are encouraged from institutions that primarily serve students with disabilities, or institutions that enroll a high number of students with disabilities.
- It is strongly recommended that the budget and timeline estimates submitted be reasonable for the proposed scale and scope of work. Proposals that significantly differ from the recommended duration or amount of funding stipulated in this solicitation may be returned without review.
- All proposals should clearly describe the role of the primary institution and all partner organizations, and should specify proposed managerial arrangements. Partner institutions may submit collaborative proposals with the lead institution or the lead institution may submit a non-collaborative proposal with partner institutions listed as subawards, as appropriate.
- All proposals should clearly address the appropriate RDE program goal(s) and associated objective(s), as well as the specific RDE-RAD, RDE-FRI or RDE-DEI program track goals, objectives and targets.

## C. REGIONAL ALLIANCES FOR PERSONS WITH DISABILITIES IN STEM EDUCATION

RDE-RAD proposals represent comprehensive, multidisciplinary networks that employ proven practices to increase the quality and the quantity of students with disabilities completing post-secondary STEM degrees and entering our nation's workforce. RDE-RAD projects are networks established by universities and colleges with linkages throughout academia and in partnership with industry, government, and national research laboratories. Academic partnerships include 2-year and 4-year institutions as well as pre-college educational entities. The primary goals of a RDE-RAD project are to increase the quantity and quality of students with disabilities receiving associate, baccalaureate and graduate degrees in STEM disciplines and entering the STEM workforce. To achieve these goals RDE-RAD projects address the following objectives:

- To successfully employ evidenced-based practices to provide students with disabilities comprehensive STEM educational and research experiences;
- To provide high quality support services for student recruitment and retention in STEM degree programs; and
- To offer proven career-development activities and support for students to successfully manage critical academic junctures and transition to the STEM workforce.

RDE-RAD projects must demonstrate short-term and long-term increases in the numbers of undergraduate and graduate STEM students with disabilities completing degrees and entering the STEM workforce. RDE-RAD projects also address the promise of long-term change in the production of new doctoral degree students with disabilities, and their entrance into productive faculty or research careers. Reporting data on the current number of students with disabilities enrolled in STEM degree programs at the partner institutions, and the number of students with disabilities who have recently completed STEM degrees, will provide a baseline for proposers to measure these increases. The strategy for implementing this project to create a unified program of change must be clear and focused as the RDE-RADs represent a substantial investment of time (up to five years) and funding (up to \$3,000,000). The RDE-RAD projects address the following targets:

- Aggregate STEM baccalaureate production for students with disabilities at the awardee and partner institutions;
- Attention to individual student transitions from high school to undergraduate STEM degree programs at the awardee and partner institutions;
- Retention and progression of students with disabilities in STEM baccalaureate degrees at the awardee and partner institutions;
- Aggregation of students with disabilities progressing to STEM graduate school entry at and from the awardee and partner institutions;
- Institutionalizing, disseminating and promoting the replication of strategies and collaborative approaches proven successful to transition high school students with disabilities to undergraduate STEM degree programs, and to transition undergraduate STEM students with disabilities to graduate STEM programs;
- Aggregation of students with disabilities progressing to the STEM workforce from awardee and partner institutions; and
- Institutionalizing, disseminating and promoting the replication of strategies and collaborative approaches proven successful to transition undergraduate and graduate students with disabilities from STEM degree programs to the STEM workforce.

The structure and content of proposed projects should be governed by organizational capabilities of the primary institution and partner alliance members, strategies for the formation of the alliance, and characteristics of specific localities. Project specifics may encompass a wide variety of activities. The project activities must form a feasible, logical, comprehensive and unified program of change focused upon improving the educational experiences of students with disabilities and contributing to student completion of STEM degrees. While the primary focus of a RAD project is at the undergraduate level, projects must include activities that affect student advancement through the critical transition points during STEM education: from high school to college, between 2- and 4-year colleges, from undergraduate study to the workplace, from undergraduate to graduate school, and from graduate school to industry or academia. These activities allow the RAD project to build linkages between the various sectors of the STEM community and the educational process to increase the flow of students, their academic advancement rate, and degree completion.

Whether proposers choose to submit an alliance proposal that is a multidisciplinary project at a single institution, or multidisciplinary projects at multiple universities, the proposal must plan for successful project coordination and for generating meaningful and significant project outcomes. When selecting project partners for an alliance proposers may want to consider the results from a series of retrospective studies of NSF projects indicating that multidisciplinary projects at a single institution, in comparison to multi-university projects, are better coordinated and more successful with greater project outcomes (Cummings, J.N., Kiesler, S. (2005), *Collaborative Research Across Disciplinary and Organizational Boundaries*, *Social Studies of Science*, 35 (5), 703-722; and Cummings, J.N., Kiesler, S. (forthcoming), *Coordination Costs and Project Outcomes in Multi-University Collaborations*, *Research Policy*).

The RDE-RAD track is characteristically different from the other two RDE program tracks. RDE-RAD proposed projects are encouraged to address the following:

- The scope of implementation services for students with disabilities in STEM is clear and specific.
- There is a “unified program for change” developed from the latest knowledge about proven practices for increasing the number of students with disabilities completing STEM courses and degrees at the middle school, high school, college and/or graduate school levels, and/or transitioning into the STEM workforce.
- The program takes advantage of existing evidenced-based practices to provide students with disabilities comprehensive STEM educational and research experiences; established high quality support services for student recruitment and retention in STEM degree programs; and proven career-development activities and support for students to successfully manage critical academic junctures and transition to the STEM workforce. These should already be identified and first year project activities should not involve researching promising practices.
- The selected models or approaches that are promoted are based on evidence of effectiveness or success, especially for students with disabilities, and strong evidence is cited.
- The project team includes experts who are research producers and education practitioners in disability and STEM. The expert credentials for peer-reviewed research and experience with programs, materials, or approaches are clear and relevant.
- The proposal indicates awareness of the community and the region to be reached, its unique characteristics, and special opportunities for cooperation and leverage.
- There is a strong mandate to communicate information to a broad public community. In addition, there should be plans to network with other educational improvement efforts, education researchers and professional associations for the purposes of outreach and public dissemination.
- The scale of potential impact is proportional to the funding level.
- The proposal includes plans for an NSF visit to the project in the first year of the award and a mid-point panel review of the project’s progress in the third year of the award that will contribute to the NSF’s decisions regarding continued annual funding for the fourth and fifth year of the proposed project.
- The proposal includes rigorous formative and summative project evaluation components (refer to section G: PROJECT EVALUATION for additional information).

#### **D. FOCUSED RESEARCH INITIATIVES**

The RDE-FRI track includes investigations that address the following track goals:

- Developing, promoting and evaluating the use of accessible and appropriate assistive technologies, instructional materials and learning resources for students with disabilities in STEM and for STEM professionals; and
- Creating and implementing new STEM learning methods and teaching pedagogy, that incorporate universal design learning approaches, to improve the engagement and performance of students with disabilities in STEM coursework and lead to student success in STEM.

RDE-FRI proposals include investigations of effective pedagogical methods, teaching and learning styles,

and supportive practices for people with disabilities in STEM education and careers; research projects that develop specific and utilitarian assistive technologies to help students with disabilities access STEM educational experiences; and evidence-based research studies that contribute to the RDE knowledge base by addressing disability-related differences, including strengths, in STEM learning and in educational and pre-professional experiences that affect student interest, performance and career choice. Additional areas for focused research include, but are not limited to, the following:

- Discovering and describing disability-based differences and preferences in learning STEM in K-16 and the factors affecting interest, performance, and choice of STEM study and careers;
- Discovering and describing how experiences and interactions in informal and formal educational settings inhibit or encourage interest and performance of students in STEM based on disability;
- Increasing the knowledge about organizational models that lead to more equitable and inviting STEM educational environments in K-16 for students with disabilities;
- Increasing the knowledge of the process of institutional change required to achieve more equitable and inviting STEM educational environments in K-16 for students with disabilities.

FRI proposals must address the immediate educational impact of applying the research outcomes given the relative time for project completion of up to 3 years and an associated budget of up to \$375,000.

Successful proposals to the RDE-FRI competition will incorporate relevant advances in research methodologies and theoretical models. They should capitalize on the development of new instrumental, computational, or statistical methods, models, and tools of observation and analysis. According to a recent National Research Council report educational research projects should:

1. Pose significant questions that can be investigated empirically;
2. Link relevant research to theory;
3. Use methods that permit direct investigation of the questions posed;
4. Provide a coherent and explicit chain of reasoning;
5. Replicate and generalize across studies; and
6. Disclose research to encourage professional scrutiny and critique.

(National Research Council. (2002). Scientific research in education. Committee on Scientific Principles for Education Research. Shavelson, RJ; Towne, L, (Eds.). Center for Education, Division of Behavioral and Social Sciences and Education. Washington, DC: National Academy Press)

Therefore, all RDE-FRI research proposals should present the disciplinary and conceptual framework for the study. They should include a discussion of the theory or theories grounding the research and specify testable hypotheses. The proposal should discuss in detail the methods used to test the hypotheses, and if a population sample is used, this should be described along with the rationale for sample selection, and the project's access to the sample population. The proposal should address whether the design is premised on special needs and interests due to educational level, race, ethnicity, economic status, or gender, in addition to disability, and to what extent data will be disaggregated for multiple characteristics. The expected study results should be expected to be of sufficient significance to merit peer-review and publication.

The RDE program supports efforts to search for new and innovative assistive technologies to facilitate student success in STEM learning and research activities. Projects that propose research and development of assistive technologies must integrate the technology into the STEM learning activities of students with disabilities. Proposals should address evaluation of the effectiveness of the assistive technologies used in the project with recommendations for further improvement and application of universal design principles, in addition to project evaluation activities.

RDE-FRI proposals should address communicating findings to a national audience, particularly to education practitioners. It is important to show that the investigator is aware of appropriate channels -- specific peer-reviewed journals, publications, web sites, professional association conferences -- and is committed (including allocating resources) to ensure the investment in the project leads to this contribution and that peers in the community will benefit.

RDE-FRI proposals should include rigorous formative and summative project evaluation components (refer to section G: PROJECT EVALUATION for additional information).



## E. DEMONSTRATION, ENRICHMENT AND DISSEMINATION

The RDE-DEI track includes projects that address the following track goals:

- Increasing public awareness and recognition of the capabilities and strengths of people with disabilities in STEM fields by disseminating evidence-based information that demonstrates success;
- Developing, promoting, evaluating and disseminating the use of accessible and appropriate assistive technologies, and the use of instructional materials and learning resources, for students with disabilities in STEM and for STEM professionals;
- Creating, implementing and disseminating new STEM learning methods and teaching pedagogy, that incorporate universal design learning approaches, to improve the engagement and performance of students with disabilities in STEM coursework and lead to student success in STEM;
- Employing and disseminating proven practices, such as mentoring, to support the success of students with disabilities in STEM academic courses, critical academic junctures, research and industry internships and externships, and transitions to the STEM workforce.

The RDE-DEI track includes projects that effectively disseminate information about products, pedagogical approaches, teaching and learning practices, and research for broadening the participation of people with disabilities in STEM fields. Demonstration projects focus on initial pilot, or proof-of-concept, research studies or activities to institutionalize accessible products and STEM educational materials. Enrichment projects enhance STEM learning experiences for students with disabilities to promote the success of students in STEM education fields. RDE-DEI project proposals should address strategies and timelines for achievement of project goals given a duration of up to 24 months and given a budget of up to \$150,000.

RDE-DEI proposals should address communicating findings to a national audience, particularly to education practitioners. It is important to show that the investigator is aware of appropriate channels -- specific peer-reviewed journals, publications, web sites, professional association conferences -- and is committed (including allocating resources) to make sure that the investment in the project leads to this contribution and that peers in the community will benefit.

RDE-FRI proposals should include rigorous formative and summative project evaluation components (refer to section G: PROJECT EVALUATION for additional information).

## F. INNOVATION THROUGH INSTITUTIONAL INTEGRATION

Creativity, connectivity, integration, and synergy are keys to innovation and to developing human and institutional capacity to full potential. In both research and education, it is the forging of new links between ideas or methodologies that were previously disparate that frequently paves the way for innovation. When institutions optimize the benefits to be derived from the creative integration of intellectual perspectives or related domains of work, they create important opportunities for making progress on some of the most important scientific, technological, and educational challenges of our time. On individual campuses across the nation, for example, significant synergistic potential can be ignited when scholars and educators in related disciplines work together. Similarly, NSF awardees can harness new synergies by working together with other NSF-funded projects on their own campus or in close geographic proximity.

Innovation through Institutional Integration challenges institutions to think strategically about the creative integration of NSF-funded awards towards a whole that exceeds the sum of its parts. Although there is particular emphasis in I<sup>3</sup> on awards managed by programs in the Directorate for Education and Human Resources (EHR), institutional integration is not limited only to EHR awards but can include other NSF awards with a STEM educational focus. Two or more institutions in geographic proximity might, for example, partner to bridge existing NSF-funded awards on their campuses (e.g., RDE, IGERT, LSAMP, ATE, CREST, REU) to broaden participation in STEM fields and enhance undergraduate research opportunities. Additional connections might be made internationally with faculty or students outside the United States who would add their considerable intellectual and cultural perspectives. As another example, an institution might implement new policies, procedures, or mechanisms that encourage and value synergistic efforts among existing NSF-funded awards (e.g., GK-12, MSP, Noyce, REESE, DRK-12) and with other institutional units to better understand and enhance seamlessness across critical educational junctures, perhaps infusing innovative approaches to cyber-learning.

This effort has the following interrelated goals:

- Increase synergy and collaboration across NSF-funded projects and within/between institutions, towards an educational environment where artificial boundaries are significantly reduced and the student experience is more fully integrated;
- Expand and deepen the footprints of NSF-funded projects and enhance their sustainability;

- Promote innovative programming, policies, and practices to encourage the integration of STEM research and education;
- Provide additional avenues to broaden participation by those underserved in STEM research and education, especially underrepresented minorities, women, and persons of disabilities; attend to seamless transitions across critical educational junctures; and/or provide more effectively for a globally engaged workforce; and
- Encourage STEM educational or related research in domains that hold promise for promoting intra- or inter-institutional integration and broader impacts.

Excellence or its potential exists everywhere, throughout the nation and in all types and sizes of institutions of higher education. Proposals that facilitate either (a) inter-institutional or (b) intra-institutional efforts are encouraged. Proposals may be submitted by (a) a single institution to address intra-institutional goals only or (b) an institution acting on behalf of an institutional partnership to address inter-institutional goals.

**Proposals are expected to incorporate a depth and quality of creative, coherent, and strategic actions that extend beyond commonplace approaches to normal institutional operations.** Proposals may also be submitted for research on institutional integration, commensurate with the goals above.

Innovation through Institutional Integration (I<sup>3</sup>) is a cross-divisional effort in the Directorate for Education and Human Resources (EHR). For Fiscal Year 2008, proposals are being solicited in six EHR programs that advance I<sup>3</sup> goals: CREST, ITEST, MSP, Noyce, RDE, and TCUP. All proposals submitted to I<sup>3</sup> through these programs have a common due date and will be reviewed in competition with one another.

## G. PROJECT EVALUATION

All RDE-RAD, RDE-FRI and RDE-DEI proposals should explore the use of benchmarks, indicators, logic models, roadmaps or other formative evaluative methods to document progress toward goals, objectives and outcomes defined in the proposal. All projects are expected to track and annually report in detail their accomplishment of proposed targets for broader impacts and intellectual merit. The budget MUST include resources for project evaluation and assessment.

Process, impact and outcome measures should be defined by the project and should rely on an appropriate mix of qualitative and quantitative measures. If a project includes the use of a research design to investigate an intervention component then the project is encouraged to use experimental and quasi-experimental designs that may include control, treatment or comparison groups.

Project evaluation should focus on the strategic impacts of project activities. Strategic impacts are lasting outcomes attributable to the project. Anticipated strategic impacts should be specific, realistic, measurable, and achievable through the project's research, educational activities and products.

Examples of such impacts include:

- Gains in knowledge or acquisition of new skills (e.g., target or treatment group has increased comprehension of specific concepts);
- Changes in behavior (e.g., adoption of new institutional policies and practices related to disability; use of new products, teaching methods and/or technologies in STEM); and
- Changes in attitude or affect (e.g., survey results indicating greater interest in disability equitable and inclusive STEM education practices); and
- Changes in the student success (e.g., student course completion and academic performance; student degree retention and degree completion).

Evaluation plans should be appropriate for the scope of the project. The use of external evaluators is strongly advised and all evaluations should be conducted by an evaluator with some independence from the project. Proposals should include a plan to broadly disseminate information about the project, including aspects that are found to be effective and ineffective.

The following references may be helpful in designing an evaluation plan:

- [The 2002 User-Friendly Handbook for Project Evaluation \(NSF 02-057\)](http://www.nsf.gov/pubs/2002/nsf02057/start.htm) (<http://www.nsf.gov/pubs/2002/nsf02057/start.htm>).
- [FOOTPRINTS: Strategies for Non-Traditional Program Evaluation \(NSF 94-51\)](http://nsf.gov/pubs/1995/nsf9541/index.jsp) (<http://nsf.gov/pubs/1995/nsf9541/index.jsp>).
- Online Evaluation Resource Library (<http://oerl.sri.com>).
- Field-tested Learning Assessment Guide (FLAG) (<http://www.wcer.wisc.edu/nise/CL1/flag>).

- Evaluation Handbook, W.K. Kellogg Foundation (<http://www.wkkf.org/Pubs/Tools/Evaluation/Pub770.pdf>).

## H. PROGRAM EVALUATION

Measuring the overall effectiveness of the NSF's Research in Disabilities Education program is important. The NSF provides federal policymakers in Congress and at the Office of Management and Budget (OMB) with evidence-based measures of all program impacts and effectiveness in accordance with the Program Assessment Rating Tool (PART) and the Academic Competitiveness Council (ACC). For an overview on PART visit [Expectmore.gov](http://Expectmore.gov). The Deficit Reduction Act of 2005 (P.L. 109-171) established the ACC. The statute charged the ACC to:

- Identify all federal programs with a mathematics or science education focus;
- Identify the effectiveness of those programs;
- Determine areas of overlap or duplication among those programs;
- Identify target populations served by such programs; and
- Recommend processes to efficiently integrate and coordinate those programs.

Individual projects funded through the RDE program are expected to cooperate with third-party program evaluation and respond to inquiries, interviews and other approaches for collecting evaluation data across individual awards. All projects should respond to and provide process and outcome data elements that may be summarized across projects.

## I. REVIEWING PROPOSALS FOR THE RDE PROGRAM

The Research in Disabilities Education program seeks to expand its reviewer pool. If you are project staff on a RDE proposal submitted this year, then you cannot be a panelist this year. If you did not submit a RDE proposal this year in response to this solicitation, you may volunteer to be a panelist. If you would like to volunteer, please notify the RDE program director. Please send the appropriate information to: [mleddy@nsf.gov](mailto:mleddy@nsf.gov). Include a biosketch or curriculum vitae and a brief description of your research expertise in your e-mail. The program director or other staff members will contact you if your area of expertise is relevant and we need panelists in that area.

## J. INFORMATION ABOUT PREVIOUS RDE AWARDS

NSF's web site provides abstracts for, and other information about, awards made by this program under the current and prior program name ("Program for Persons with Disabilities"). NSF's web site provides the ability to search awards using custom queries. A customize query to find RDE awards includes the use of the RDE Element Code, which is 1545.

To find more specific awards, it is possible to narrow the search by, for example, using:

- Element Code: 1545 and Keyword: "mentoring"
- Element Code: 1545 and Keyword: "learning community"
- Element Code: 1545 and Keyword: "Washington"
- Element Code: 1545 and Keyword: "high school"

## III. AWARD INFORMATION

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Anticipated funding for new grants in all RDE program tracks in FY 2008 is \$4,200,000, and \$10,000,000 over 5 years for Innovation through Institutional Integration projects, pending the availability of funds.

RDE-RAD proposals may request up to a total of \$3,000,000 for five years, pending availability of funds. Continued funding in years four and five are contingent on satisfactory performance and availability of funds. Continued funding will be reduced or eliminated if performance is not satisfactory. The proposal should include a budget for each year and a cumulative budget. If subawardee institutions are partnering with the proposing institution, then the proposal should include subawardee budgets

for each year and a cumulative budget for each institution.

RDE-FRI proposals may request up to \$375,000 for up to three years pending availability of funds. The proposal should include a budget for each year and a cumulative budget. If subawardee institutions are partnering with the proposing institution, then the proposal should include subawardee budgets for each year and a cumulative budget for each institution.

RDE-DEI proposals may request up to \$150,000 for up to two years pending availability of funds. The proposal should include a budget for each year and a cumulative budget.

The Innovation through Institutional Integration Projects: Awards for Innovation through Institutional Integration projects will be made for durations up to five years, with years four and five dependent on performance, in amounts of \$200,000 per year, for a total of up to \$1 million over 5 years. Innovation through Institutional Integration awards will be made as continuing grants.

NSF expects to fund 1-2 RDE-RAD proposals, 7-12 RDE-FRI proposals, 2-6 RDE-DEI proposals, and 10 Innovation through Institutional Integration proposals, depending on the quality of the submissions and availability of funds.

The proposed start dates for RDE-RAD, RDE-FRI and RDE-DEI proposals should be at least seven months from the full proposal deadline.

Funds should be budgeted for the principal investigator to attend a two-day grantee meeting, held in the Washington, D.C. area, each award year.

Office equipment for project staff are expected to come from other sources.

Focused Research Initiatives projects are eligible for Research Experiences for Undergraduates (REU) supplements, which expressly support the participation of undergraduate students on the project research team, if funds are available. Please see the REU solicitation for complete parameters and the method for making a request for an REU supplement (see <http://www.nsf.gov/home/crssprgm/reu/start.htm>). Proposers should consult the Program Director in advance of a request for REU supplements.

## IV. ELIGIBILITY INFORMATION

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### Organization Limit:

Proposals may only be submitted by the following:

- For the RDE-RAD, RDE-FRI, and RDE-DEI tracks: Non-profit, non-academic organizations: Independent museums, observatories, research labs, professional societies and similar organizations in the U.S. associated with educational or research activities, and universities and colleges: U.S. universities and two- and four-year colleges (including community colleges).

Eligibility for Innovation through Institutional Integration (I<sup>3</sup>) is limited to institutions of higher education (including two- and four-year colleges) located and accredited in the US, acting on behalf of their faculty members.

### PI Limit:

None specified for the RDE-RAD, RDE-FRI, and RDE-DEI tracks.

The PI for an Innovation through Institutional Integration (I<sup>3</sup>) proposal must be the university provost or equivalent, unless the proposal is exclusively for I<sup>3</sup> STEM educational or related research.

### Limit on Number of Proposals per Organization:

None Specified for the RDE-RAD, RDE-FRI, and RDE-DEI tracks.

For Fiscal Year 2008, proposals are being solicited in six EHR programs that advance I<sup>3</sup> goals: CREST,

ITEST, MSP, Noyce, RDE, and TCUP. Given the focus on institutional integration, an institution may submit only one proposal to the I<sup>3</sup> competition in only one program.

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

None Specified

#### Additional Eligibility Info:

The RDE 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 funding from RDE projects as identified in the proposal and sanctioned by the PI and his or her institutional sponsor. Additionally, funding is offered for special assistance or equipment to enable people with disabilities to work on NSF-supported projects through Facilitation Awards for Scientists and Engineers with Disabilities (FASSED). Consult the guidelines presented in [NSF 02-115](#) and refer to the Grant Proposal Guide Chapter II, Section D.2 for instructions regarding preparing FASSED proposals.

## V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

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### A. Proposal Preparation Instructions

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

- Full proposals submitted via FastLane: Proposals submitted in response to this program solicitation should be prepared and submitted in accordance with the general guidelines contained in the NSF Grant Proposal Guide (GPG). The complete text of the GPG is available electronically on the NSF website at: [http://www.nsf.gov/publications/pub\\_summ.jsp?ods\\_key=gpg](http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpg). Paper copies of the GPG may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from [pubs@nsf.gov](mailto:pubs@nsf.gov). Proposers are reminded to identify this program solicitation number in the program solicitation block on the NSF Cover Sheet For Proposal to the National Science Foundation. Compliance with this requirement is critical to determining the relevant proposal processing guidelines. Failure to submit this information may delay processing.
- Full proposals submitted via Grants.gov: Proposals submitted in response to this program solicitation via Grants.gov should be prepared and submitted in accordance with the NSF Grants.gov Application Guide: A Guide for the Preparation and Submission of NSF Applications via Grants.gov. The complete text of the NSF Grants.gov Application Guide is available on the Grants.gov website and on the NSF website at: (<http://www.nsf.gov/bfa/dias/policy/docs/grantsgovguide.pdf>). To obtain copies of the Application Guide and Application Forms Package, click on the Apply tab on the Grants.gov site, then click on the Apply Step 1: Download a Grant Application Package and Application Instructions link and enter the funding opportunity number, (the program solicitation number without the NSF prefix) and press the Download Package button. Paper copies of the Grants.gov Application Guide also may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from [pubs@nsf.gov](mailto:pubs@nsf.gov).

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.

After selecting the RDE program solicitation number on the **COVER SHEET**, enter the program name the "NSF Unit Consideration" must be specified - selected either Research in Disabilities Education (RDE) or Innovation through Institutional Integration (I<sup>3</sup>). For Grant.gov users, the program solicitation number will be pre-populated by Grants.gov on the NSF Grant Application Cover Page.

#### **FOR RDE PROGRAM PROPOSALS**

The **TITLE** should be prefaced with an abbreviation identifying the program track supported by the proposal:

- RDE-RAD: - for the Regional Alliances for Persons with Disabilities in STEM Education proposals;

- RDE-FRI: - for the Focused Research Initiatives proposals;
- RDE-DEI: - for the Demonstration, Enrichment, and Information Dissemination proposals.

The **PROJECT SUMMARY**:

- Name and describe the proposed activity (what and how);
- Identify the specific program track goal(s) the proposal is addressing;
- Describe the research question (or hypothesis) and/or the expected impact on students with disabilities completing undergraduate and graduate degrees in STEM;
- Describe the target research subjects, audience, or community (who);
- State the names of partnering organizations (who);
- Especially highlight the contribution of the project to knowledge, social, or human capital (why),
- **Address each NSF review criterion under separate headings: INTELLECTUAL MERIT and BROADER IMPACTS.**

The Regional Alliances for Persons with Disabilities in STEM Education proposal **PROJECT DESCRIPTION** should address:

- The scope of the service, in terms of geography, community, and intellectual specialization; The rationale for this scope (Why this scope? What are advantages, benefits, strengths?)
- Provide a detailed management plan and timeline;
- Describe a unified program of change. How will proven practices, products, or curricula be chosen as part of the program? What is the evidence for the effectiveness of the selected models, approaches and activities?
- Describe the materials to be used in the proposed project. Are the materials already developed and available?
- What is the relationship between the alliance partners and the community to be served?
- What expertise is on the alliance team? How are the investigators and senior personnel suited to the proposed scope of the project and what are their roles?
- Describe the methods for implementing the proven practices to increase the number of students with disabilities completing quality undergraduate and graduate degrees in STEM. What activities and products are planned for this community?
- What is the potential impact of this particular alliance over 3-5 years?
- Describe how the alliance will be networked with other educational improvement efforts, professional associations, and/or institutionalized at the partner campuses.
- Describe a plan for formative and summative project evaluation including measures of goals, objectives and outcomes.
- Include a list of advisory committee members and description of their level of involvement, if an advisory committee is proposed.
- For prior grantees, include a discussion of the results of prior work.

The Focused Research Initiatives proposal **PROJECT DESCRIPTION** should address:

- What is the research question? What is the theoretical basis for the research?
- What is the study population and the plan to reach the population?
- What hypotheses will be tested? What findings are expected?
- What is the contribution to the knowledge base? Reference prior related work and explain the value added and the national benefit of the work.
- What methods will be used and why are these best for this project?
- Identify key team members, consultants, and advisors. Relate their qualifications and skills to specific components of the proposed work.
- Provide a detailed project timeline and management plan.
- How will the goals, objectives and outcomes of the project (including both broader impacts and intellectual merit) be measured?
- For prior grantees, a discussion of the results of prior work.

The Demonstration, Enrichment, and Information Dissemination proposal **PROJECT DESCRIPTION** should address:

- Is this a demonstration and/or enrichment and/or information dissemination proposal?
- How will the project effectively disseminate information about products, pedagogical approaches, teaching and learning practices, and research for broadening the participation of people with disabilities in STEM fields; and/or
- How will the project focus on initial pilot, or proof-of-concept, research studies or activities to institutionalize accessible products and STEM educational materials; and/or
- How will planned enrichment activities enhance STEM learning experiences for students with disabilities to promote the success of students in STEM education fields.
- What is the goal of the project, and what is the justification for it?
- What audience will the project reach and what is the desired impact on the audience?
- How does this project contribute to national benefits?
- Describe the management plan and timeline.
- Describe the qualifications of key team members and suitability for their role in the project.

- Describe a plan for project evaluation including measures of goals, objectives and outcomes.
- For prior grantees, include a discussion of the results of prior work.

**REFERENCES CITED:** All references cited in the Project Summary and Project Description should be listed in this section.

**BIOSKETCHES:** Biosketches for the PI, and for any Co-PI(s) and/or all senior personnel are required. Biosketches MUST follow the NSF guidelines outlined in the NSF Grant Proposal Guide or NSF Grants.gov Application Guide and may not be longer than 2 pages per individual.

**BUDGET AND BUDGET JUSTIFICATION:** Budgets should be in NSF format and include up to three pages of budget justification for each institution's budget. The budget justification should include a detailed explanation of each line item with budget resources listed in the budget. Information about what may or may not be included in the budget or budget justification is outlined in the NSF Grant Proposal Guide and NSF Grants.gov Application Guide.

**FACILITIES AND EQUIPMENT:** A list of current facilities and equipment to be used in the implementation of the project activities should be included in this section. It is helpful to the reviewers when proposers include information about the accessibility of facilities and equipment for students, faculty, staff and members of the public who have disabilities. Further information is available in the NSF Grant Proposal Guide or NSF Grants.gov Application Guide.

**SUPPLEMENTARY DOCUMENTS:** Only those supplementary documents listed in the Grant Proposal Guide or NSF Grants.gov Application Guide are allowed to be appended in the Supplementary Document section. Additional project description, examples of survey or interview protocols, past PI efforts, or other project-related materials are NOT ALLOWED.

### **FOR INNOVATION THROUGH INSTITUTIONAL INTEGRATION (I<sup>3</sup>) PROJECTS**

The proposal should articulate the project's vision, goals, and anticipated outcomes and describe how the project will achieve them. It is expected that the plan of work will impact participating NSF awards, as well as other relevant parts of the institution (s). The proposal should include a management/governance plan that describes who is responsible for what, a timeline, and an evaluation plan. All proposals must clearly demonstrate that the submitting team has the capability to manage the project, organize the work, and meet deadlines. The proposed evaluation plan should address the effectiveness of the strategies employed for institutional integration, including any institutional policies, practices, or mechanisms developed and implemented under this effort; and, as appropriate, provide for the evaluation of any products produced under this effort, as well as for the collection and analyses of data that track increases in STEM student recruitment and retention (against baseline data) and other measures of student progress (against comparable baseline data). In addition to project-level evaluation, awardees will be required to participate in an NSF data collection system (to be developed) that will track outcomes and impacts over time, as well as in an independent, multi-method program-level evaluation to assess the effectiveness of the I<sup>3</sup> investment.

Proposals for I<sup>3</sup> research should discuss the current state of knowledge relevant to the project. This brief literature review should clearly inform the proposed research. The project description should identify the methods the project will use and explain why those methods are appropriate to the questions that the proposal addresses. Methodologies must be matched with strategic research questions, and the logic among research question, method, analysis, inference, and evidence should be well articulated.

## **B. Budgetary Information**

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

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

### **Other Budgetary Limitations:**

RDE-DEI awards are standard grants of up to a total of \$150,000 for up to 24 months duration.

RDE-FRI awards are standard or continuing grants of up to a total \$375,000 for up to 3 years duration.

RDE-RAD awards are continuing grants or cooperative agreements of up to a total of \$3,000,000 for 5 years duration, with funding for years 4 and 5 depending on successful performance and availability of funds.

I<sup>3</sup> awards are continuing grants of up to \$200,000 per year for up to five years, for a total of \$1,000,000, with funding for years 4 and 5 depending on successful progress and availability of funds.

## C. Due Dates

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

April 10, 2008

Innovation through Institutional Integration

April 11, 2008

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

April 11, 2008

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

April 21, 2008

Focused Research Initiatives (RDE-FRI)

## D. FastLane/Grants.gov Requirements

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- **For Proposals Submitted Via FastLane:**

Detailed technical instructions regarding the technical aspects of preparation and submission via FastLane are available at: <https://www.fastlane.nsf.gov/a1/newstan.htm>. For FastLane user support, call the FastLane Help Desk at 1-800-673-6188 or e-mail [fastlane@nsf.gov](mailto:fastlane@nsf.gov). The FastLane Help Desk answers general technical questions related to the use of the FastLane system. Specific questions related to this program solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this funding opportunity.

**Submission of Electronically Signed Cover Sheets.** The Authorized Organizational Representative (AOR) must electronically sign the proposal Cover Sheet to submit the required proposal certifications (see Chapter II, Section C of the Grant Proposal Guide for a listing of the certifications). The AOR must provide the required electronic certifications within five working days following the electronic submission of the proposal. Further instructions regarding this process are available on the FastLane Website at: <https://www.fastlane.nsf.gov/fastlane.jsp>.

- **For Proposals Submitted Via Grants.gov:**

Before using Grants.gov for the first time, each organization must register to create an institutional profile. Once registered, the applicant's organization can then apply for any federal grant on the Grants.gov website. The Grants.gov's Grant Community User Guide is a comprehensive reference document that provides technical information about Grants.gov. Proposers can download the User Guide as a Microsoft Word document or as a PDF document. The Grants.gov User Guide is available at: <http://www.grants.gov/CustomerSupport>. In addition, the NSF Grants.gov Application Guide provides additional technical guidance regarding preparation of proposals via Grants.gov. For Grants.gov user support, contact the Grants.gov Contact Center at 1-800-518-4726 or by email: [support@grants.gov](mailto:support@grants.gov). The Grants.gov Contact Center answers general technical questions related to the use of Grants.gov. Specific questions related to this program solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this solicitation.

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

## VI. NSF PROPOSAL PROCESSING AND REVIEW PROCEDURES

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Proposals received by NSF are assigned to the appropriate NSF program where they will be reviewed if they meet NSF proposal preparation requirements. All proposals are carefully reviewed by a scientist, engineer, or educator serving as an



NSF Program Officer, and usually by three to ten other persons outside NSF who are experts in the particular fields represented by the proposal. These reviewers are selected by Program Officers charged with the oversight of the review process. Proposers are invited to suggest names of persons they believe are especially well qualified to review the proposal and/or persons they would prefer not review the proposal. These suggestions may serve as one source in the reviewer selection process at the Program Officer's discretion. Submission of such names, however, is optional. Care is taken to ensure that reviewers have no conflicts of interest with the proposal.

## A. NSF Merit Review Criteria

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All NSF proposals are evaluated through use of the two National Science Board (NSB)-approved merit review criteria: intellectual merit and the broader impacts of the proposed effort. In some instances, however, NSF will employ additional criteria as required to highlight the specific objectives of certain programs and activities.

The two NSB-approved merit review criteria are listed below. The criteria include considerations that help define them. These considerations are suggestions and not all will apply to any given proposal. While proposers must address both merit review criteria, reviewers will be asked to address only those considerations that are relevant to the proposal being considered and for which the reviewer is qualified to make judgements.

### **What is the intellectual merit of the proposed activity?**

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

### **What are the broader impacts of the proposed activity?**

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

Examples illustrating activities likely to demonstrate broader impacts are available electronically on the NSF website at: <http://www.nsf.gov/pubs/gpg/broaderimpacts.pdf>.

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

### ***Integration of Research and Education***

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

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

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

### **Additional Review Criteria:**

In addition to the two NSF criteria for Intellectual Merit and Broader Impacts, special review criteria for I<sup>3</sup> are:

- The extent to which the proposed project addresses the interrelated goals for institutional integration;
- The degree of innovation in the proposed project as evidenced by a depth and quality of creative, coherent, and strategic actions that extend beyond commonplace approaches to normal institutional operations.
- The extent to which the proposed project addresses programming, policies, and practices commensurate with the sustained institutional change needed to seed and nurture appropriate, synergistic relationships among discrete NSF awards.

## B. Review and Selection Process

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Proposals submitted in response to this program solicitation will be reviewed by 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 deadline or target date, or receipt date, whichever is later. The interval ends when the Division Director accepts the Program Officer's recommendation.

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

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

## VII. AWARD ADMINISTRATION INFORMATION

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### A. Notification of the Award

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

### B. Award Conditions

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An NSF award consists of: (1) the award letter, which includes any special provisions applicable to the award and any numbered amendments thereto; (2) the budget, which indicates the amounts, by categories of expense, on which NSF has based its support (or otherwise communicates any specific approvals or disapprovals of proposed expenditures); (3) the proposal referenced in the award letter; (4) the applicable award conditions, such as Grant General Conditions (GC-1); \* or Federal Demonstration Partnership (FDP) Terms and Conditions \* and (5) any announcement or other NSF issuance that may be incorporated by reference in the award letter. Cooperative agreements also are administered in accordance with NSF Cooperative Agreement Financial and Administrative Terms and Conditions (CA-FATC) and the applicable Programmatic Terms and Conditions. NSF awards are electronically signed by an NSF Grants and Agreements Officer and transmitted electronically to the organization via e-mail.

\*These documents may be accessed electronically on NSF's Website at [http://www.nsf.gov/awards/managing/general\\_conditions.jsp?org=NSF](http://www.nsf.gov/awards/managing/general_conditions.jsp?org=NSF). Paper copies may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from [pubs@nsf.gov](mailto:pubs@nsf.gov).

More comprehensive information on NSF Award Conditions and other important information on the administration of NSF awards is contained in the NSF *Award & Administration Guide* (AAG) Chapter II, available electronically on the NSF Website at [http://www.nsf.gov/publications/pub\\_summ.jsp?ods\\_key=aag](http://www.nsf.gov/publications/pub_summ.jsp?ods_key=aag).

#### Special Award Conditions:

Regional Alliances for Persons with Disabilities in STEM Education (RDE-RAD) awards will be for 5 years, with funding for years 4 and 5 depending on performance and availability of funds, as evaluated from annual reports, site visit reports and a mid-point panel review. If performance is not satisfactory, then continued funding will be reduced or eliminated.

### C. Reporting Requirements

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For all multi-year grants (including both standard and continuing grants), the Principal Investigator must submit an annual project report to the cognizant Program Officer at least 90 days before the end of the current budget period. (Some programs or awards require more frequent project reports). Within 90 days after expiration of a grant, the PI also is required to submit a final project report.

Failure to provide the required annual or final project reports will delay NSF review and processing of any future funding increments as well as any pending proposals for that PI. PIs should examine the formats of the required reports in advance to assure availability of required data.

PIs are required to use NSF's electronic project-reporting system, available through FastLane, for preparation and submission of annual and final project reports. Such reports provide information on activities and findings, project participants (individual and organizational) publications; and, other specific products and contributions. PIs will not be required to re-enter information previously provided, either with a proposal or in earlier updates using the electronic system. Submission of the report via FastLane constitutes certification by the PI that the contents of the report are accurate and complete.

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

## VIII. AGENCY CONTACTS

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General inquiries regarding this program should be made to:

- Mark Leddy, Program Director, telephone: (703) 292-4655, fax: (703) 292-9018, email: [mleddy@nsf.gov](mailto:mleddy@nsf.gov)
- Tayana L Casseus, telephone: (703) 292-4684, email: [tcasseus@nsf.gov](mailto:tcasseus@nsf.gov)

For questions related to the use of FastLane, contact:

- FastLane Help Desk, telephone: 1-800-673-6188; e-mail: [fastlane@nsf.gov](mailto:fastlane@nsf.gov).

For questions relating to Grants.gov contact:

- Grants.gov Contact Center: If the Authorized Organizational Representatives (AOR) has not received a confirmation message from Grants.gov within 48 hours of submission of application, please contact via telephone: 1-800-518-4726; e-mail: [support@grants.gov](mailto:support@grants.gov).
- Cynthia R. Douglas, Management Operations Assistant, Directorate for Education & Human Resources, Division of Human Resource Development, Room 815 N. Telephone: (703) 292-5175, fax: (703) 292-9018, email: [cdouglas@nsf.gov](mailto:cdouglas@nsf.gov)

## IX. OTHER INFORMATION

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The NSF Website provides the most comprehensive source of information on NSF Directorates (including contact information), programs and funding opportunities. Use of this Website by potential proposers is strongly encouraged. In addition, MyNSF (formerly the Custom News Service) is an information-delivery system designed to keep potential proposers and other interested parties apprised of new NSF funding opportunities and publications, important changes in proposal and award policies and procedures, and upcoming NSF Regional Grants Conferences. Subscribers are informed through e-mail or the user's Web browser each time new publications are issued that match their identified interests. MyNSF also is available on NSF's Website at <http://www.nsf.gov/mynsf/>.

Grants.gov provides an additional electronic capability to search for Federal government-wide grant opportunities. NSF funding opportunities may be accessed via this new mechanism. Further information on Grants.gov may be obtained at <http://www.grants.gov>.

## ABOUT THE NATIONAL SCIENCE FOUNDATION

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

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

NSF receives approximately 40,000 proposals each year for research, education and training projects, of which approximately 11,000 are funded. In addition, the Foundation receives several thousand applications for graduate and postdoctoral fellowships. The agency operates no laboratories itself but does support National Research Centers, user facilities, certain oceanographic vessels and Antarctic research stations. The Foundation also supports cooperative research between universities and industry, US participation in international scientific and engineering efforts, and educational activities at every academic level.

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

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