

CORE QUESTIONS and REPORT TEMPLATE
for
FY 2006 NSF COMMITTEE OF VISITOR (COV) REVIEWS

Guidance to NSF Staff: This document includes the FY 2006 set of Core Questions and the COV Report Template for use by NSF staff when preparing and conducting COVs during FY 2006. Specific guidance for NSF staff describing the COV review process is described in Subchapter 300-Committee of Visitors Reviews (NSF Manual 1, Section VIII) that can be obtained at <www.inside.nsf.gov/od/oia/cov>.

NSF relies on the judgment of external experts to maintain high standards of program management, to provide advice for continuous improvement of NSF performance, and to ensure openness to the research and education community served by the Foundation. Committee of Visitor (COV) reviews provide NSF with external expert judgments in two areas: (1) assessments of the quality and integrity of program operations and program-level technical and managerial matters pertaining to proposal decisions; and (2) comments on how the results generated by awardees have contributed to the attainment of NSF's mission and strategic outcome goals.

Many of the Core Questions are derived from NSF performance goals and apply to the portfolio of activities represented in the program(s) under review. The program(s) under review may include several subactivities as well as NSF-wide activities. The directorate or division may instruct the COV to provide answers addressing a cluster or group of programs – a portfolio of activities integrated as a whole – or to provide answers specific to the subactivities of the program, with the latter requiring more time but providing more detailed information.

The Division or Directorate may choose to add questions relevant to the activities under review. NSF staff should work with the COV members in advance of the meeting to provide them with the report template, organized background materials, and to identify questions/goals that apply to the program(s) under review.

Guidance to the COV: The COV report should provide a balanced assessment of NSF's performance in two primary areas: (A) the integrity and efficiency of the **processes** related to proposal review; and (B) the quality of the **results** of NSF's investments that appear over time. The COV also explores the relationships between award decisions and program/NSF-wide goals in order to determine the likelihood that the portfolio will lead to the desired results in the future. Discussions leading to answers for Part A of the Core Questions will require study of confidential material such as declined proposals and reviewer comments. *COV reports should not contain confidential material or specific information about declined proposals.* Discussions leading to answers for Part B of the Core Questions will involve study of non-confidential material such as results of NSF-funded projects. The reports generated by COVs are used in assessing agency progress in order to meet government-wide performance reporting requirements, and are made available to the public. Since material from COV reports is used in NSF performance reports, the COV report may be subject to an audit.

We encourage COV members to provide comments to NSF on how to improve in all areas, as well as suggestions for the COV process, format, and questions. For past COV reports, please see <http://www.nsf.gov/od/oia/activities/cov/covs.jsp>.

**FY 2006 REPORT TEMPLATE FOR
NSF COMMITTEE OF VISITORS (COVs)**

Date of COV: May 22-23, 2006
Program/Cluster/Section: Research in Disabilities Education
Division: Human Resource Development
Directorate: Education and Human Resources Directorate
Number of actions reviewed: Awards: 17 Declinations: 15 Other:
Total number of actions within Program/Cluster/Division during period under review: Awards: 31 Declinations: 76 Other:
Manner in which reviewed actions were selected: Awards ending in 1, 4, and 7 up to 6 per year Declines ending in 1, 4, and 7 up to 3 per year Additional jackets added by program (Alliance awards and jackets from FY2003 that did not meet sample criteria)

PART A. INTEGRITY AND EFFICIENCY OF THE PROGRAM'S PROCESSES AND MANAGEMENT

Briefly discuss and provide comments for *each* relevant aspect of the program's review process and management. Comments should be based on a review of proposal actions (awards, declinations, and withdrawals) that were *completed within the past three fiscal years*. Provide comments for *each* program being reviewed and for those questions that are relevant to the program under review. Quantitative information may be required for some questions. Constructive comments noting areas in need of improvement are encouraged.

A.1 Questions about the quality and effectiveness of the program's use of merit review procedures. Provide comments in the space below the question. Discuss areas of concern in the space provided.

QUALITY AND EFFECTIVENESS OF MERIT REVIEW PROCEDURES	YES, NO, DATA NOT AVAILABLE, or NOT APPLICABLE¹
<p>1. Is the review mechanism appropriate? (panels, ad hoc reviews, site visits)</p> <p>Comments: Review panels average about six individuals per cycle. Program officer attempts to balance gender. There were two, one ad hoc and one panelist with a visible disability on the 2003, 2004 and 2005 panels, respectively. Panels consist of new and continuing members each year. One individual has served on all panels from 2003-2005. Mail or ad hoc reviews are</p>	Yes

¹ If "Not Applicable" please explain why in the "Comments" section.

<p>apparently solicited as needed. Site visits are commonly done relative to RAD conferences, but there have been only two post-award site visits by the program director to RAD projects.</p>	
<p>2. Is the review process efficient and effective?</p> <p>Comments: The process is efficient and effective and most actions are completed in less than 6 months.</p>	Yes
<p>3. Do the individual reviews (either mail or panel) provide sufficient information for the principle investigator(s) to understand the basis for the reviewer's recommendation?</p> <p>Comments: The PIs are receiving sufficient input, as most DEI and FRI proposals are reviewed by at least 3 reviewers. Five individuals review RAD proposals. The reviews contain sufficient detail to justify the reviewers' recommendation. Most reviewers are providing quality suggestions on intellectual merit and broader impacts to the PIs as to the strengths and weaknesses of their proposals, as well as, insight for proposal improvement.</p>	Yes
<p>4. Do the panel summaries provide sufficient information for the principal investigators to understand the basis for the panel recommendation?</p> <p>Comments: Overall, panel summaries are brief, general and a bulleted list detailing specific positives and negatives appear in the summaries. Whether this information is sufficient for the PI to understand the panel recommendation probably depends on the PI. For some PIs, the answer is probably yes. For others, the more detailed individual summaries may better justify the panel recommendation.</p>	Yes
<p>5. Is the documentation for recommendations complete, and does the program officer provide sufficient information and justification for her/his recommendation?</p> <p>Comments: Program officer recommendations appear to mirror those of the panel review. The review analysis from the program officer usually presents a bulleted list of strengths and/or weaknesses to justify either approval or declination of the proposal. Justification for panel recommendations is based on the ratings of individual reviewers and categorized as Highly Competitive (HC), Competitive and Non-Competitive (NC). Generally, the HC and NC categories are self-explanatory, but sufficient justification as to why a competitive proposal is declined is not always apparent.</p>	Yes

<p>6. Is the time to decision appropriate?</p> <p>Comments: There was a decrease in total average months to final actions from 2003 to 2004 and an increase in 2005. The timeline is commendable considering that one IPA program director, a part time assistant program director and a part-time staff assistant staff the program. Some delays (budget approval by Congress, contract preparation, etc.) are probably independent of program staff.</p>	<p>Yes</p>
<p>7. Additional comments on the quality and effectiveness of the program's use of merit review procedures: As noted in the prior COV review, the weight given to the section on "intellectual merit" and "broader impact" could not be determined. It is difficult to determine what weight reviewers give to each section and how this impacts reviewer rating and outcome of the proposal. NSF's response to the 2003 COV recommendations indicated each category was equally weighted, but this may not be clear to the PI's. The solicitation should indicate that sufficient detail should be included in the experimental design to allow reviewers to adequately evaluate the scientific merit of the proposal. It was noted that several reviews for both approved and declined proposals indicated that sufficient experimental detail was lacking in some proposals. The solicitation could emphasize the inclusion of milestones as part of the proposal narrative, especially for the RAD proposals. This would provide reviewers with a section to correlate progress with a timeline and provide metrics for annual assessment and accountability as RADs apply for continuing funding.</p>	

A.2 Questions concerning the implementation of the NSF Merit Review Criteria (intellectual merit and broader impacts) by reviewers and program officers.

Provide comments in the space below the question. Discuss issues or concerns in the space provided.

IMPLEMENTATION OF NSF MERIT REVIEW CRITERIA	YES, NO, DATA NOT AVAILABLE, or NOT APPLICABLE ²
<p>1. Have the individual reviews (either mail or panel) addressed both merit review criteria?</p> <p>Comments: The two general merit review criteria established by the National Science Board are: (1) What is the intellectual merit of the proposed activity? and (2) What are the broader impacts of the proposed activity? Review of the grant jackets as well as tables of information indicate that these two general review criteria are considered in most of the reviews. While reviewers are asked to comment on both criteria, this is not always done.</p>	Yes
<p>2. Have the panel summaries addressed both merit review criteria?</p> <p>Comments: A review of proposals that were awarded, as well as declined, indicates that the merit review criteria were addressed by most reviewers (93% in 2005, 100% in 2004, and 98% in 2003).</p>	Yes
<p>3. Have the <i>review analyses</i> (Form 7s) addressed both merit review criteria?</p> <p>Comments: Completed Form 7s were reviewed for the awarded and declined proposal samples from 2003 through 2005. Both merit review criteria are addressed in the completed Form 7s that were reviewed.</p>	Yes

² In “Not Applicable” please explain why in the “Comments” section.

4. Additional comments with respect to implementation of NSF's merit review criteria:

A few reviewers do not address both merit review criteria, but that percentage is very small. The checks and balances in the review process (e.g., completion of Form 7 by the program officer followed by the division director's review) provide a good system in the event that further attention to the merit review criteria is needed. None of the jackets (files) reviewed indicated that further attention to the merit review criteria was necessary.

A.3 Questions concerning the selection of reviewers. Provide comments in the space below the question. Discuss areas of concern in the space provided.

SELECTION OF REVIEWERS	YES , NO, DATA NOT AVAILABLE, or NOT APPLICABLE ³
<p>1. Did the program make use of an adequate number of reviewers?</p> <p>Comments: The reviewer pool needs to be expanded. See item #5.</p>	No
<p>2. Did the program make use of reviewers having appropriate expertise and/or qualifications?</p> <p>Comments: Little evidence of persons with experience or knowledge of issues facing racial or ethnic minority group members is provided. Since racial and ethnic minority group members are overrepresented among those with disabilities, expertise and knowledge in this area is needed.</p>	No
<p>3. Did the program make appropriate use of reviewers to reflect balance among characteristics such as geography, type of institution, and underrepresented groups?⁴</p> <p>Comments: The balance of reviewers is not reflective of the disabled population itself. For example, none comes from a federally chartered institution for the disabled. There is no representation of historically black colleges or universities, or of tribal colleges. There are no reviewers from historically underrepresented racial minority groups.</p>	No
<p>4. Did the program recognize and resolve conflicts of interest when appropriate?</p> <p>Comments: There is a close linkage between reviewers and programs under review. In one instance, a panel voted to permit panel members to continue as members even if they had written letters of support for proposals under review.</p>	No

³ If “Not Applicable” please explain why in the “Comments” section.

⁴ Please note that less than 35 percent of reviewers report their demographics last fiscal year, so the data may be limited.

5. Additional comments on reviewer selection:

The reviewers and panel members do not reflect the same racial and ethnic distribution as the general population of disabled persons, nor do they reflect, for that matter, the population of scientists and engineers. Not a single ad hoc reviewer identified themselves as African American, Hispanic or American Indian, and the same applied to panelists in 2003, 2004 or 2005.

Persons with disabilities represented a relatively small share of reviewers. There did not appear to be a balance among types of disabilities among reviewers on panels in each year.

None of the reviewers were from historically black colleges or universities or Tribal Colleges. Few were from community colleges. And, at least in the period examined, none were from Gallaudet University or the Helen Keller National Center on Deaf-Blind Youths and Adults, the two federally chartered institutions dealing specifically with people with disabilities.

The previous strategy for review was to send out five or six proposals to a small group of reviewers. While this might have made sense for the panel that reviewed the RAD proposals, this might not be the best way for obtaining an independent judgment about the merits of the DEI and FRI proposals. Perhaps, instead, staff should expand the reviewer pool considerably and send RAD, DEI and FRI proposals to a larger pool of reviewers, and then, convene a panel to review and evaluate the reviews. This provides an opportunity for the panel to assess the likelihood that DEI or FRI proposals will ultimately produce ideas or innovations of value to the larger and more expensive RADs.

A.4 Questions concerning the resulting portfolio of awards under review. Provide comments in the space below the question. Discuss areas of concern in the space provided.

<p align="center">RESULTING PORTFOLIO OF AWARDS</p>	<p align="center">APPROPRIATE, NOT APPROPRIATE⁵, OR DATA NOT AVAILABLE</p>
<p>1. Overall quality of the research and/or education projects supported by the program.</p> <p>Comments: The overall quality of the research and education projects in the RDE portfolio is good. As can be expected in any program, the quality of project performance and results is uneven. The reported outcomes and outputs related to students pursuing further STEM education and careers are more conclusive for the projects that have had longer periods of time in operation and higher levels of funding. Thus, the Regional Alliances can better demonstrate outcomes that reflect the NSF education mission of promoting increased STEM education and career development.</p>	<p align="center">Yes</p>
<p>2. Are awards appropriate in size and duration for the scope of the projects?</p> <p>Comments: Using project outcomes and outputs as the measure of project success, project duration does affect the project results. One year is too brief of a time to permit researchers to accomplish much other than small pilot demonstrations or to launch information dissemination programs. The three-year research initiatives have resulted in positive outcomes, but it is difficult for them to initiate the activities essential for implementation beyond the originating institution.</p>	<p align="center">No</p>
<p>3. Does the program portfolio have an appropriate balance of:</p> <ul style="list-style-type: none"> • Innovative/high-risk projects?⁶ <p>Comments: RDE currently does not have a significant number of projects that could be regarded as being “high risk.” Considering the small budget of the program, this may be understandable.</p>	<p align="center">No</p>
<p>4. Does the program portfolio have an appropriate balance of:</p>	<p align="center">Yes</p>

⁵ If “Not Appropriate” please explain why in the “Comments” section.

⁶ For examples and concepts of high risk and innovation, please see Appendix III, p. 66 of the Report of the Advisory Committee for GPRA Performance Assessment, available at <www.nsf.gov/about/performance/acgpa/reports.jsp>.

<ul style="list-style-type: none"> • Multidisciplinary projects? <p>Comments: RDE has a high proportion of projects that are multidisciplinary. This is undoubtedly due in part to the many projects that concern a multitude of STEM disciplines and a diversity of disabilities included within the targeted student population.</p>	
<p>5. Does the program portfolio have an appropriate balance of:</p> <ul style="list-style-type: none"> • Funding for centers, groups and awards to individuals? <p>Comments: RDE is currently funding a diversity of centers, groups and individual investigators. Determining whether the current balance is appropriate depends upon the relative merits of the RAD, DEI and FRI awards. The reported outcomes and outputs from the Regional Alliances appear to favor an increased proportion of the center and group awards over individual investigator awards.</p>	Yes
<p>6. Does the program portfolio have an appropriate balance of:</p> <ul style="list-style-type: none"> • Awards to new investigators? <p>Comments: The term “new investigator” is used in two different ways when discussing new awards. If “new investigator” is meant to refer to individuals receiving their first government grant award, there is insufficient information to determine whether any of the newly funded PIs were in this category.</p>	Unclear
<p>7. Does the program portfolio have an appropriate balance of:</p> <ul style="list-style-type: none"> • Geographical distribution of Principal Investigators? <p>Comments: The geographical distribution of Principle Investigators needs attention. The northeast is overrepresented when compared to the remainder of the country. The Southeast and Plains states are poorly represented. It is surprising that California, with more than 10% of the nation’s population, had no awards during this time period. But it must be emphasized that the combination of awards and declinations demonstrates that there has not been a good geographical distribution of proposal submissions. Few proposals were submitted from the regions that were identified as poorly represented.</p>	No
<p>8. Does the program portfolio have an appropriate balance of:</p> <ul style="list-style-type: none"> • Institutional types? <p>Comments: The RDE portfolio lacks significant inclusion of community colleges and institutions that historically include a high percentage of students from ethnic and racial minorities.</p>	No

<p>9. Does the program portfolio have an appropriate balance of:</p> <ul style="list-style-type: none"> • Projects that integrate research and education? <p>Comments: The RDE portfolio is comprised primarily of projects that integrate research and education.</p>	Yes
<p>10. Does the program portfolio have an appropriate balance:</p> <ul style="list-style-type: none"> • Across disciplines and subdisciplines of the activity and of emerging opportunities? <p>Comments: There appears to be a good balance across disciplines and emerging opportunities in STEM fields.</p>	Yes
<p>11. Does the program portfolio have appropriate participation of underrepresented groups?</p> <p>Comments: The portfolio does not have good representation of project participants who come from racial minorities other than Hispanics. The portfolio, however, does include a high proportion of projects directed by women and persons with disabilities.</p>	No
<p>12. Is the program relevant to national priorities, agency mission, relevant fields and other customer needs? Include citations of relevant external reports.</p> <p>Comments: RDE is relevant to the National Science Board's priority of promoting the recruitment of people from groups that historically have been underrepresented in the STEM workforce.</p>	Yes
<p>13. Additional comments on the quality of the projects or the balance of the portfolio:</p>	

A.5 Management of the program under review. Please comment on:

<p>1. Management of the program.</p>

Comments: Despite the lack of a full-time program officer and small staff, RDE is a program that is providing excellent outcomes for the investment. The return on investment can only be improved, as suggested in the previous COV, with the hiring of a permanent program officer.

Review of annual reports, management plans, program solicitations, budgets, annual meeting overviews, and other data provided indicate that RDE has benefited from the able leadership of Dr. Ted Conway who has been the IPA for two years. Ms. Martha James was recently hired into the position of a shared but permanent Assistant Program Director and Manager. Additionally, there is a permanent and shared program assistant. One example of the excellent program management is that RDE has had a relatively short “dwell” time (time from submission to decision) as compared to other HRD programs. While current staff is working efficiently and effectively, and staffing is an improvement from the last COV, the current COV believes it would be beneficial for the program officer to be a permanent rather than temporary appointment. A permanent program officer could better interact and promote the inclusion of persons with disabilities in other programs at NSF.

The COV believes that RDE’s sustainability is hampered by the lack of long-term management inherent in appointing a permanent program director who would have the ability to leverage resources across the research directorates. While the IPA model is sufficient for short-term management of program mechanics, it does not allow for long-term or strategic planning within the program. A full-time program manager is needed to allow for annual evaluations of program progress, and to ensure accountability of grant recipients. This would also address the need to accumulate information relative to program effectiveness, and impact many of the mechanics of the program, such as maintaining a balanced network of reviewers—as suggested in A1.3—diversity of proposal submission and the development of appropriate assessment tools for metrics to measure program outcomes.

This issue was mentioned by the previous COV.

One of the underutilized aspects of RDE is the potential for assisting GEO, MPS and others with the creation of broader impacts and broader participation linkages. For example, a major instrumentation grant through GEO could be associated with an existing RAD program as a means of producing subsequent year’s support.

2. Responsiveness of the program to emerging research and education opportunities.

Comments: Programs funded by RDE have increased the number of students with disabilities entering STEM disciplines (data from WA and NM RAD projects) and provided new tools that improve accessibility of information to disabled students.

Annual reports and management plans are submitted on time and indicate coordination with the Division of Human Resources Development and the Directorate for Education and Human Resources (EHR). It is important to relate work in RADS to other two components of RDE (DEI and FRI) and enhance the research component in all three. Clear and guiding statements in the program announcements and solicitations should require respondents to incorporate evaluation systems, expected outcomes and research.

The lack of a full-time program director may be a barrier to RDE being able to respond to emerging research and education opportunities if a long-term funding strategy is not available.

Responsiveness of the program to emerging research and education opportunities depends on PIs

submitting proposals to identify the needs. An advisory committee could assist with this.

It is not clear whether the program is on the cutting edge of *research* on disabilities, nor does it seem to be leading the discipline in research on the education of persons with disabilities. But, it appears to be responsive to the outreach component of educational opportunities in STEM.

3. Program planning and prioritization process (internal and external) that guided the development of the portfolio.

Comments: The program has had the value of two COV evaluations since its inception in 1992. Program directors are implementing recommendations from COV into the program as time and funding permit. Future plans indicate that the program will hire an external evaluator in late 2006 or early 2007 to review the impacts of the program.

As suggested in the annual report for RDE, the COV recommends implementation of external evaluation of all three program components and encourages common performance metrics among RADs, DEIs, and FRIs with a formal summative evaluation of the outcomes of the various projects to learn what works and does not in order to establish best practices and guide replication.

The COV also recommends metrics of success of individual student participation.

4. Additional comments on program management:

Past program directors have done a commendable job in directing and sustaining the vision of RDE, but since 2001 they have worked under the handicap of two-year IPA appointments, not typical of most other programs within NSF.

This program needs a champion in the form of a full-time program director that has appropriate resources to implement a strategic long-range plan that promotes “leading-edge” research in disabilities and continues to enhance the enrollment of disabled persons into STEM careers.

The program is hampered by a small budget with limited options for taking risks or exploring innovations.

That said, the COV makes the following recommendations:

- Make Fastlane more accessible and fully friendly to persons with disabilities.
- RAD should have a plan for institutionalizing programs once NSF funds end.
- Ensure better geographical distribution of RADs.

Limited funding is distributed among three different programs. The COV recommends coordination among RADs, DEIs, and FRIs, and increasing funding particularly for programs that promote risk-taking and new frontiers in working with persons with disabilities.

PART B. RESULTS OF NSF INVESTMENTS

NSF investments produce results that appear over time. The answers to the first three (People, Ideas and Tools) questions in this section are to be based on the COV's study of award results, which are direct and indirect accomplishments of projects supported by the program. These projects may be currently active or closed out during the previous three fiscal years. The COV review may also include consideration of significant impacts and advances that have developed since the previous COV review and are demonstrably linked to NSF investments, regardless of when the investments were made. Incremental progress made on results reported in prior fiscal years may also be considered.

The following questions are developed using the NSF outcome goals in the NSF Strategic Plan. The COV should look carefully at and comment on (1) noteworthy achievements of the year based on NSF awards; (2) the ways in which funded projects have collectively affected progress toward NSF's mission and strategic outcomes; and (3) expectations for future performance based on the current set of awards. NSF asks the COV to provide comments on the degree to which past investments in research and education have contributed to NSF's progress towards its annual strategic outcome goals and to its mission:

- To promote the progress of science.
- To advance national health, prosperity, and welfare.
- To secure the national defense.
- And for other purposes.

Excellence in managing NSF underpins all of the agency's activities. For the response to the Outcome Goal for Organizational Excellence, the COV should comment, where appropriate, on NSF providing an agile, innovative organization. Critical indicators in this area include (1) operation of a credible, efficient merit review system; (2) utilizing and sustaining broad access to new and emerging technologies for business application; (3) developing a diverse, capable, motivated staff that operates with efficiency and integrity; and (4) developing and using performance assessment tools and measures to provide an environment of continuous improvement in NSF's intellectual investments as well as its management effectiveness.

B. Please provide comments on the activity as it relates to NSF's Strategic Outcome Goals. Provide examples of outcomes (nuggets) as appropriate. Examples should reference the NSF award number, the Principal Investigator(s) names, and their institutions.

B.1 OUTCOME GOAL for PEOPLE: Developing "a diverse, competitive and globally engaged workforce of scientists, engineers, technologists and well-prepared citizens."

Comments: RDE's mission is directly related to contributing to NSF's effort to develop a diverse workforce of competitive scientists and engineers. A truly diverse workforce should include individuals with disabilities, individuals who are competitive in the academic fields in which they have been trained. RDE currently is the one program within NSF that is dedicated to this objective. Program outcomes to date are encouraging, but more must be done to achieve full acceptance of this population within the Foundation's activities and programs.

As noted in the information packet provided to the COV, programs within the Directorate of Education and Human Resources are intended to principally address the "people" outcome. The

RDE program officer highlighted four examples of outcomes through DEI, two through FRI and three Alliances. Most of the nine examples provided by the RDE program staff address the “people” outcome. The primary examples include outreach activities to teach educators about methods and resources for teaching students with disabilities and the developments of materials to assist in this instruction (Georgia Institute of Technology, HRD 03-33396; University of Southern Maine HRD 03-33316; New Mexico State University HRD 01-24198; University of Washington DO-IT project HRD 02-27995).

The above programs disseminate information to a large number of K-12 educators in the NE, NW and SW regions of the U.S. Only one program (New Mexico State) provided metrics indicating that since 1995, 63 former participants in a summer institute are now college-aged and 10 (16%) have chosen STEM majors. This program also has 14 graduates currently employed with high tech firms such as Raytheon, UBM and HP.

Individual grants, however, show promise in engaging persons with disabilities in the STEM workforce, e.g., the CUNY Multisensory Calculus for Visually Impaired People (PI Kress, 9906115) and the NCAM/MIT project making physics accessible to the deaf and blind (PI Freed, 9906159).

A notable example includes:

Winona State University (PI Francioni, 9986689). Participants in the “Computer Science Program for Students with Disabilities” project have made effective use of commercial assistive technology to increase the accessibility of course information for students with visual disabilities. Staff has developed effective software to support the participant’s programming efforts. Annual progress reports indicate success in reaching the specified goals.

There is a need for a rigorous and comprehensive evaluation of all of the RADs. The evaluation should examine the outputs and measure the success of program approaches. The evaluations should be built upon the knowledge base accumulated in prior NSF assessments of programs for women and minorities. More needs to be done to distinguish among types of disabilities and to disaggregate measures by race and ethnicity.

B.2 OUTCOME GOAL for IDEAS: Enabling “discovery across the frontier of science and engineering, connected to learning, innovation, and service to society.”

Comments: The main areas of discovery appear in the projects providing computerized tools for students with disabilities. Special web-based instruction and computerization of mathematical and science text for the visually impaired. Examples include the work at New Mexico State University on conversion of mathematical materials to Braille. (PI McCarthy, 0124198)

Most of the projects funded through RDE are intended to provide immediate impacts to society. Thus projects funded through RDE tend to focus on demonstrations and outreach rather than “cutting-edge research” and discovery.

For example:

University of Washington (PI Burgstahler, HRD 0227995) has created the AccessSTEM Knowledge Base, a searchable collection of web-based questions and answers, case studies and promising practices that focus on K12 and postsecondary teaching strategies, universal design of instruction, disability-related accommodations, strategies for making STEM classes accessible to all students,

adaptive technology for computers, and other assistive technologies for students with disabilities. Thirteen NSF Education and Human Resources projects in the Northwest Region signed a Memorandum of Understanding (MOU) with the Northwest Alliance to facilitate sharing of resources, dissemination of project activities, products, and coordination and collaboration on current or future project activities in order to maximize project outcomes, avoiding duplication of efforts and activities. This Alliance has also increased awareness of working with women and racial/ethnic minority groups and how individuals with disabilities face similar issues as other underrepresented groups.

B.3 OUTCOME GOAL for TOOLS: Providing “broadly accessible, state-of-the-art S&E facilities, tools and other infrastructure that enable discovery, learning and innovation.”

Comments: Projects funded through RDE are providing assistive technology to increase the accessibility of science information for students, especially those with that are sight and hearing impaired. Whether these are state-of-the-art tools it is difficult to determine. Examples of “tool accomplishments” include software to assist blind high school and college students in computer programming (Winona State 9986689); reformed science education package of deaf and bilingual elementary teachers (Texas Engineering Experiment Station HRD 04-35627); and the Shodar Foundation (HRD 05-33210) development of DEAF-STEM, a tool for providing video and the use of avatars for instruction of deaf students.

Notable examples:

University of Delaware (PI Chapman, HRD 0533169). The project proposes to facilitate the removal of barriers by assessing the degree of accessibility of oceanographic research vessels and developing specific solutions for barrier removal.

New Mexico State University (PI McCarthy, HRD 0124198) has conducted promising work on making tables and frames in web pages accessible to individuals who are blind and translating mathematical materials from LaTeX to Nemeth brailled in real time.

A review of the summary of the files shows that few of the funded projects focus on infrastructure or facilities which is appropriate considering that the RDE RFP did not solicit such proposals.

B.4 OUTCOME GOAL for ORGANIZATIONAL EXCELLENCE: Providing “an agile, innovative organization that fulfills its mission through leadership in state-of-the-art business practices.”⁷

Comments:

See comments about the management and the need for permanent staffing.

Not applicable to EHR RDE

⁷ For examples and further detail on the Organizational Excellence Goal, please refer to pp. 19-21 of NSF’s Strategic Plan, FY 2003-2008, at <http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf04201>.

PART C. OTHER TOPICS

C.1 Please comment on any program areas in need of improvement or gaps (if any) within program areas.

There is no apparent roadmap for the program for the next three to five years. What is the vision for RDE for the next several years? What impact does the program want to leave on society? The RDE program needs to develop a database of issues and barriers confronting individuals with disabilities who wish to pursue careers in science, engineering, technology and mathematics. This information should then be used to restructure the philosophy of the program to support a balance of projects focused on demonstrations, tool development, outreach and hypothesis-driven research relative to understanding the functionality of disabilities in the STEM environment. Once this data is obtained, then an appropriate roadmap for funding priorities can be established. Preferably, this can be done through budget increases and a restructuring of the language in the program solicitation to encourage more proposals that advance the science of disabilities.

The COV recommends that the RDE program staff develop a set of metrics for the evaluation of progress on the DEI, FRI and RAD projects. While the foundation has a template for progress reports on funded projects, the program should develop specific questions or assessment protocols to acquire data on the success of their programs (for example, how many disabled students enter STEM fields of study as a result of K-12 or other mentoring).

The COV offers the following recommendations:

- The pool of reviewers, panel members and PIs should be more racially and ethnically diverse, and include more disabled persons.
- More can be done to document outcomes from funded projects and to track the success of participants in demonstration projects. There is a need to document transition into STEM majors to graduate school and the workforce. Existing NSF surveys might be helpful here. Have RDE talk with the office dealing with data collection and surveys.
- Clearly define the universe of persons with disabilities that should form the baseline upon which RDE-funded programs and projects should be assessed. Calibrate the aforementioned roadmap to this baseline to assure that RDE-funded programs make a substantial difference.

C.2 Please provide comments as appropriate on the program's performance in meeting program-specific goals and objectives that are not covered by the above questions.

There needs to be a more comprehensive evaluation model built into these programs to allow for more rigorous and comprehensive evaluation of all of the RADs. The evaluation should examine the outputs and measure the success of program approaches. More needs to be done to distinguish among types of disability and to disaggregate measures by race and ethnicity.

The prior questions appear to adequately cover the goals and objectives of the program.

C.3 Please identify agency-wide issues that should be addressed by NSF to help improve the program's performance.

NSF needs to be the leading Federal agency in developing programs to assist disabled persons in pursuing careers in STEM. This implies that NSF integrate this concept into other programs across the agency, into continuing efforts to make FASTLANE more accessible to disabled individuals and in providing sufficient resources for the program to meet its mandated goals and objectives.

Better coordination with other NSF programs is more likely with the appointment of a permanent program officer.

The COV believes that the goal of including people with disabilities should not be the role of RDE alone. First and foremost, RDE must be given equal treatment in organization and management, more comparable to other NSF programs. While the IPA program offers individuals the opportunity to assist NSF in program management and may encourage the influx of new ideas, this program does not allow for long-term programmatic planning and sustainability. Currently, 60 million Americans have some form of a disability. With the involvement of current and future generations in armed conflicts throughout the world, this number may well increase, and these individuals deserve an opportunity for a career in STEM fields.

The COV encourages the continuation of intra-agency meetings to discuss how RDE could participate in co-funding proposals in collaboration with other NSF programs.

C.4 Please provide comments on any other issues the COV feels are relevant.

If the funding level for the RDE program continues to receive small incremental increases, then it may be appropriate to evaluate the portfolio of the program to decide whether continued support of three initiatives is a responsible use of resources.

C.5 NSF would appreciate your comments on how to improve the COV review process, format and report template.

In Part A of the template, the requested responses are “yes, no, data not available or not applicable” for sections 1, 2, and 3. However, the requested responses for section 4 are “appropriate, not appropriate, or data not available.” This COV recommends changing the requested responses for section 4 to be the same as those in the other sections.

The provided advance materials are helpful, but consider web-based material for COVs. Also, it would be helpful to receive all documentation (exclusive of proposal jackets) at least 2 to 3 weeks prior to convening the review.

The template is at times confusing and perhaps not all questions on the template are applicable to the program under review. Therefore, it would be helpful if the NSF program officer and/or director review the template to determine which questions are applicable to their program, rather than let the committee decide.

ADDITIONAL QUESTIONS FROM PROGRAM

1. Is the Regional Alliance model effective and is there a need for future growth?

The Regional Alliance model appears to be the most effective means of achieving one of the primary objectives of RDE, namely recruitment of students with disabilities into STEM education and career development opportunities. The Regional Alliance programmatic effort should be

continued with the emphasis on establishing additional alliances in geographical regions that are currently not served. Efforts should be made to place these new alliances in geographical regions where high numbers of people from underserved racial and ethnic populations live because these groups historically have a higher incidence of people with disabilities. The Southeast and Mid-Atlantic regions are good examples of such regions. The Plains States comprise another region where a high proportion of Native American families reside.

The Regional Alliance model is a five-year program funded at approximately \$600,000 per regional alliance per year. Outcomes from the three existing RADs indicate that the programmatic and tool development within these alliances are reaching the targeted audience of educators, disabled student and parents. There are several advantages to this model: adequate funding for programs, sufficient time for outcomes, collaboration with other institutions in the region, opportunities for regional training of mentors and potential leverage of funding with state and private agencies.

Ideally, the RADs should be balanced between “cutting edge” research, demonstration and outreach projects. The demonstration and outreach components are being enabled, but “cutting-edge” research is unfortunately neglected.

The communication system among RADs and the establishment of databases that they share are beneficial components of their work; however the RAD model needs to incorporate a stronger research component. Additionally RADs need to coordinate with DEIs and FRIs and particularly those in their regions. There is a definite need for RADs in sections of the US where they are not currently located. Perhaps RDE should have a competition that is region specific. The COV recommends strategies to institutionalize functioning of the RADs to help ensure the alliance continues after NSF funding is decreased or eliminated. RAD funding should be viewed as seed dollars.

The Regional Alliance model can be strengthened by creating collaborations between RADs and other science and engineering programs. There are critical gaps in the national coverage: there is no RAD in California and none in the Deep South or the southeast. West Virginia, Kentucky and Virginia have the highest concentration of disabled persons in the workforce in the nation, but there is no RAD coverage there. Washington DC and Maryland have the highest concentration of minority deaf populations in the nation, but there is no current coverage.

There should be better linkages between individual research awards and the regional networks. There should also be a national linkage among the regional networks.

2. Is the current funding level adequate to maintain all RDE programs?

Funding needs to be increased. Additionally, better coordination and collaboration within RDE programs, as well as among other programs at NSF and other agencies and programs outside NSF are needed.

That said, if the goal is maintenance of current programs with no opportunity for new investigators to receive funding, then the answer is yes. Financial commitments to the four RADs require nearly 4/5ths of the current budget, leaving \$1 million for the DEI and FRI programs. There have been only a few new investigators funded since 2003.

If the goal is to fund additional alliances and maintain the current portfolio of three initiatives, then funding needs to be increased to implement the recommendations and to support and encourage more basic research related to recruiting and training people with disabilities in STEM. The current funding level for RDE is insufficient to permit the growth of the Regional

Alliances into regions not currently served and to foster improved field-initiated innovative research and demonstration projects from individual investigators. The RDE budget should be placed on a schedule for increased budget levels comparable to that promised by the current administration when it stated that the NSF budget would be doubled over a five-year period to ensure that America's science and technology enterprise would remain globally competitive. Without such a commitment, the nation's STEM enterprise is endangered, and the participation of underserved groups will continue to suffer.

3. Does the management structure within RDE allow for continuity in the Program's continued development?

The current management structure has been adequate to develop the goals and objectives of RDE and to implement the funded initiatives. However, the current management structure is best suited for a program that will function in the immediate, but, not the sustainable, future. Sustainability of the program will require the attention of a full-time manager to develop a long term strategic plan that improves the current STEM environment to be more user friendly to disabled individuals, and with the ability to leverage resources throughout NSF's other directorates.

SIGNATURE BLOCK:

For the Research in Disabilities Education Committee of Visitors
Dr. Diana G. Oblinger, Chair

MEMORANDUM

DATE: December 31, 2006

TO: Bernice Anderson, Senior Program Director for Evaluation
Directorate for Education and Human Resources

FROM: Mark Leddy, Program Director
Research in Disabilities Education
Division of Human Resource Development
Directorate for Education and Human Resources

SUBJECT: COV for Research in Disabilities Education
COI and Diversity Memo

The Committee of Visitors report for the Research in Disabilities Education Program was approved at the EHR Advisory Committee meeting held at NSF on November 1, 2006. The COV consisted of five (5) members selected for their expertise related to the goals of the program. They provided a balance with respect to the type of institutions supported through the program, gender, and representation from underrepresented groups. The following table shows the main features of the COV's diversity.

Category of COV Membership	No. of COV Members in Category
Member of EHR Advisory Committee.....	1
Institution Type	
<input type="checkbox"/> University.....	2
<input type="checkbox"/> Four-year College.....	1
<input type="checkbox"/> Two-year College.....	
<input type="checkbox"/> K-12 School or LEA.....	
<input type="checkbox"/> Industry.....	
<input type="checkbox"/> Federal Agency.....	
<input type="checkbox"/> Non-Profit Organization.....	1
Location	
<input type="checkbox"/> East.....	1
<input type="checkbox"/> Midwest/North	2
<input type="checkbox"/> West.....	2
<input type="checkbox"/> South.....	
Gender	
<input type="checkbox"/> Female.....	2
<input type="checkbox"/> Male.....	3
Race/Ethnicity	
<input type="checkbox"/> White.....	4
<input type="checkbox"/> Black.....	1
<input type="checkbox"/> Hispanic.....	
<input type="checkbox"/> Asian.....	
<input type="checkbox"/> Pacific Islander.....	
Disability	
<input type="checkbox"/> Yes.....	3
<input type="checkbox"/> None.....	2

The COV was briefed on Conflict of Interest issues and each COV member completed a COI form. COV members had no conflicts with any of the proposals or files.