National Science Foundation • 4201 Wilson Boulevard • Arlington, Virginia 22230
Office of the Inspector General

ALERT MEMORANDUM

DATE: May 8, 2009

TO: Cora Marrett
Deputy Director

FROM: Deborah H. Cureton
Associate Inspector General for Audit

SUBJECT: *High Risk Awardees and Programs that May Receive American Recovery and Reinvestment Act Funds*

As you know, the Inspectors General have been asked to focus as much as we can on the prevention of fraud waste and abuse in American Recovery and Reinvestment Act (ARRA) programs and funding. In order to meet these expectations, and our responsibilities under both ARRA and the Inspector General Act, we will be conducting what we are referring to as "real-time" reviews of NSF ARRA-related activities. What we mean by this is that we will be reviewing NSF activities while they are being developed. We believe that this approach will allow us to provide NSF with timely and constructive feedback on issues as they arise – without the need to wait until policies have been fully implemented and potential problems become imbedded in the status quo.

As you may also be aware, the Recovery Accountability and Transparency Board (Recovery Board) asked us to identify those programs receiving funds under the American Recovery and Reinvestment Act (ARRA) that we consider, in our opinion, to be high risk. We believe the information we provided to the Recovery Board may also help NSF to fulfill its role as stewards of ARRA and taxpayer funds. Consequently, we are providing to you, verbatim, the information that we have presented to the Recovery Board (see Attachment 1).

In addition to identifying potential high-risk programs, we also identified what we believe are institutions that present more risk from a financial and administrative perspective. With the bulk of NSF's ARRA funds being used to support traditional R&RA programs, which are in general less risky, we felt that a review of institutions was an appropriate method for assessing other risks within these programs. To identify these institutions, we reviewed past and ongoing OIG audits for the last five years and A-133 audit reports generally for the audit years 2005-2007. While we did not provide the Recovery Board with this list of institutions, we have attached it for NSF's use in making ARRA funding decisions (see Attachment 2).

We understand that NSF may have additional information on these institutions or programs based on audit resolution activities, NSF site visits, or other activities and may view the risk of these institutions differently. Our purpose is simply to make you aware of our assessment based on information available to us. Also, because some of these institutions are included in the potential pool of ARRA proposals, we felt it important to provide this information quickly.

Should you or your staff have any questions or concerns regarding this information, please feel free to contact me at (703) 292-4985 and we will be happy to discuss this with you.

ATTACHMENT 1: Information Provided to the Recovery Accountability and Transparency Board

National Science Foundation
Recovery Act High Risk Programs

The American Recovery and Reinvestment Act of 2009 (ARRA) allocates additional funding of $3 billion to NSF in three distinct appropriations including Major Research Equipment and Facilities Construction, Education and Human Resources, and Research and Related Activities. We have categorized NSF's risks based on these functional areas.

Major Research Equipment and Facilities Construction

Under ARRA, NSF has received an additional $400 million in its Major Research Equipment and Facilities Construction (MREFC) appropriation, which provides funding for the acquisition, construction, commissioning, and upgrading of major research equipment, facilities, and other capital assets. NSF's investment in large infrastructure projects and instruments such as telescopes and research vessels presents the agency with a host of administrative and financial issues. Based on past audits and the large amount of funds going to MREFC projects, we believe that as a whole this is one of the riskiest programs at NSF. In past audits, we have focused on the difficult challenges to NSF of managing the design, construction, and financing of these cutting edge projects and completing the facilities on time and within budget. While the agency has made progress in addressing our longstanding concerns, some of the issues we have raised in the past persist. Further, while NSF has increased the personnel assigned to its Large Facilities Office to four, we are concerned that it is not adequately staffed to handle its increasing responsibilities for oversight of the full life-cycle of these facilities. Lastly, although the agency has updated its facilities manual, it still has not completed the in-depth guidance necessary to carry out the broader policy.

Education and Human Resources

The Education and Human Resources appropriation generally provides funding for science and engineering education and human resources programs. ARRA has provided an additional $100 million in funding, which NSF will use for three distinct programs: the Math Science Partnership (MSP) program, the Robert Noyce Teacher Scholarship Program, and the Science Master's Program. We believe the Science Master's Program is inherently high-risk because it is a new program to NSF. We have found in the past with new programs that NSF may approach these programs through trial and error and may not develop the internal controls necessary to mitigate potential risks prior to releasing funds. In addition, we believe the MSP program is high risk because of the large number of partnerships involved. The development of partnerships among major stakeholders including school districts, higher-education institutions, businesses, museums, and others, is an important feature of the projects funded by NSF's MSP program. As compared with traditional NSF awards, these partnerships require an additional level of oversight on the part of NSF to ensure their success.

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Research and Related Activities

The Research and Related Activities (R&RA) appropriation provides the bulk of NSF's funding for science and engineering research that enables it to carry out its mission. By far the largest appropriation within NSF, the R&RA account is increased by $2.5 billion through ARRA. Some of this funding has been designated within the Act and its legislative history for specific programs. ARRA designates that $200 million has been provided in support of the Academic Research Infrastructure program (ARI), which we believe to be high-risk primarily because it is a program that NSF has not been involved with for some time. As such, we believe that it will present the same risks to NSF as if it were a newly established program. We are encouraged, however, that NSF officials involved with this program are currently engaged in an analysis of its risks and have sought our input on the identification of risks and risk-mitigation techniques.

In addition to $300 million for the Major Research Instrumentation program, ARRA provides $2 billion in R&RA funding in support of all of NSF's research divisions. Historically, NSF provides the bulk of its R&RA funds to established institutions for single-investigator research. However, many of NSF's standing programs do not fit this typical funding profile. For example, some programs may be targeted towards institutions that are generally inexperienced in managing and accounting for NSF funds, such as community colleges or small businesses. In our experience, these programs present more risk to NSF. In addition, some programs are specifically targeted towards awards that will create strategic partnerships among multiple institutions. As mentioned above in our discussion on the Education and Human Resources account, these partnerships require an additional level of oversight on the part of NSF to ensure their success.

Based on a review of NSF's standing programs and our prior audit work, we believe the following programs are high-risk and have the potential to receive ARRA funding:

- **Centers:** NSF's Centers pose inherent risks due to the large amounts of funding they receive, their long-term nature, the large number of organizational partners, and multiple objectives. Further, research Centers often develop new organizational structures, and systems to monitor day-to-day operations. These new, untested systems can also pose risks to ensuring proper controls over Federal funds.
- **EPSCOR Research Infrastructure Improvement Program:** The EPSCOR Research Infrastructure Improvement Program targets EPSCOR states that may not have experience with NSF awards.
- **Equipment Acquisitions (High Performance Computing System Acquisition):** While not on the same scale as large facilities, the acquisition and deployment and operation of high performance computing (HPC) systems may carry the same risk as large facilities. Risks include ensuring the systems are acquired and deployed on time and budget. Additionally, unique concerns for the program include the security of the HPC systems and equipment.

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- **Opportunity for Enhancing Diversity Program:** This program targets underrepresented groups that may come from institutions that are not experienced with NSF funds. For example, potential awardees include tribal colleges, which our past audits have identified as having problems and which may not be used to handling NSF funds.
- **Small Business Phase 1 and 2:** The Small Business Innovation Research (SBIR) Program stimulates technological innovation in the private sector by strengthening the role of small business concerns in meeting Federal research and development needs, increasing the commercial application of Federally supported research results, and fostering and encouraging participation by socially and economically disadvantaged and women-owned small businesses. Because these awards are being made to for profit organizations, there is an added element of risk. In addition, these types of organizations may not be as experienced with handling NSF funds.

In addition to these specific programs, we have also identified awardee institutions that we believe may pose a greater risk should they receive ARRA funding. We identified these institutions through an analysis of our past audit and investigative work including a review of recent A-133 audit reports. We believe many of these organizations have the potential to receive ARRA funds and are presenting this list of institutions to NSF so that it may take these concerns into consideration when making funding decisions. We caution NSF to carefully consider whether it will need to engage in additional risk-mitigation techniques prior to making final funding decisions to these institutions.

ATTACHMENT 1: Information Provided to the Recovery Accountability and Transparency Board

Attachment

Based on our review of past audits [redacted] we believe NSF may want to consider ensuring the awardees on this list have fully responded to prior audit recommendations and implemented necessary corrective mitigating actions before releasing ARRA funds. We note that some of these institutions are in the potential pool of ARRA awards.

[List of Awardees May Be Available Upon Request]

We also believe the following list of awardees may deserve additional oversight by NSF if they receive ARRA funds. We note that some of these institutions are in the potential pool of ARRA awards.

[List of Awardees May Be Available Upon Request]

ATTACHMENT 2: OIG List of Potentially Risky Institutions

Based on our review of past audits [redacted] we believe NSF may want to consider ensuring the awardees on this list have fully responded to prior audit recommendations and implemented necessary corrective mitigating actions before releasing ARRA funds. Awardees in bold are included on NSF's "Very Good Undeclined Proposal" and/or "Pending Proposal" lists and consequently may be in the pool of potential recipients of ARRA funding.

[redacted]

We also believe the following list of awardees may deserve additional oversight by NSF if they receive ARRA funds. Again, those awardees in bold are already included on NSF's "Very Good Undeclined Proposal" and/or "Pending Proposal" lists.

[redacted]

Addendum

July 16, 2009

We informally discussed the contents of this memorandum with NSF management. In the discussions, NSF management expressed appreciation for the proactive approach we have taken with regard to reviewing the agency's activities through the real-time review process. NSF believes that the OIG analysis of NSF's implementation of ARRA has helped to inform the agency in its efforts to mitigate financial and administrative risk.

The OIG and NSF management agree there are a few points that are important to note for the reader of this memo. First, as we have noted, the Major Research Equipment and Facilities Construction (MREFC) program is a potential high-risk program. NSF has pointed out that the NSF Large Facilities Office (LFO), the relevant NSF Program Office or Offices, and the NSF Division of Acquisition and Cooperative Support share in the management responsibilities of this program. Consequently, in addressing the concerns we identified, NSF will consider the LFO as part of a larger team with oversight responsibilities for MREFC projects to mitigate the potential risks of this program.

Second, as we noted, there are potential risks in starting a new program. NSF has pointed out that it has established polices and practices to guide the development of a new program. NSF has also stated that variations from these policies are sometimes appropriate but are carefully considered and require approval of the Policy Office and other NSF Offices as appropriate. Within this context and with its experience in developing programs, NSF states it will focus its efforts on the particular potential risks of these new ARRA programs.

NSF management has reviewed this addendum and concurs that their comments are accurately stated.