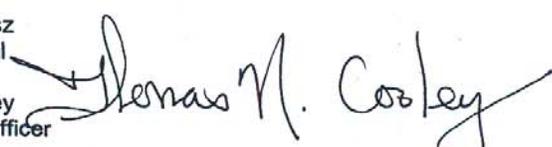


**NATIONAL SCIENCE FOUNDATION**

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ARLINGTON, VIRGINIA 22230

November 8, 2005

To: Christine C. Boesz  
Inspector General

From: Thomas N. Cooley  
Chief Financial Officer 

Subject: Management's Response to the Independent Auditors' Report  
Fiscal Year 2005

I am pleased to learn that the National Science Foundation (NSF) is receiving its eighth clean opinion on the audit of its Financial Statements for fiscal year (FY) 2005. In light of the increasingly complex and numerous requirements placed on all federal agencies, this achievement continues to increase in value and significance. The investments and commitments needed to obtain a clean opinion continue to increase correspondingly. Both of our organizations have contributed to this achievement throughout the past fiscal year and I commend your office, and the KPMG contractors, for the improved working relationship.

NSF management notes that the FY 2005 audit includes two reportable conditions: post-award monitoring and contract monitoring. In resolving all FY 2004 post-award monitoring corrective action plan recommendations, management believes that NSF has mitigated the possibility of a significant deficiency that could adversely affect our ability to record, process, summarize and report financial data. We continue to examine opportunities to increase these safeguards. NSF's post-award monitoring accomplishments demonstrate continuing leadership in safeguarding federal investments in science and engineering research and education. In regard to contract monitoring, significant progress has been made and we will continue to pursue corrective action to complete our response. Here too, we judge safeguards are in place adequate to divert any serious threat to our stewardship of federal funds.

Last winter NSF initiated a series of informational exchange meetings that included NSF staff, Office of Inspector General audit staff and the auditor. Management observes that this approach has resulted in an enhancement to communication and coordination of the audit process for FY 2005. NSF will encourage staff to continue these sessions in order to identify opportunities to make the annual audit process more efficient and effective. In turn, these efforts will assist both of our organizations to foster our common objective to support NSF's achievement of excellence in all of its activities. For FY 2006, management will look to this process to clarify, for all of us, what exact actions are needed to result in the closing of the reportable conditions.

cc: Dr. Arden L. Bement, Jr.  
cc: Dr. Kathleen Olsen

Attachment 1 (Management Response)

## Management's Response to Auditors' Report

### Management's Response to 05-01 – Post-Award Monitoring

#### **Management Comments on the Finding:**

NSF's post-award monitoring program is comprehensive and strong. Over the past four years in particular, management has invested significant resources in strengthening post-award monitoring. As discussed in management's response to Exhibit II, management satisfied all four of the FY 04 post-award monitoring recommendations at a reportable condition level.

The FY 05 post-award monitoring finding states that improvements are still needed and that in particular not all procedures specified in management's standard operating guidance for post-award monitoring were followed. As discussed below, management did follow the procedures specified but has evidently failed to effectively communicate that to the auditors. This finding and the disparity between the auditors' and management's basic understandings of procedures in place and actions taken demonstrates the importance of improving communications between NSF management, KPMG, and the Office of Inspector General.

**Independent Auditor Recommendation:** *Establish and implement a detailed strategic plan to monitor all institutions identified by the model as having high-risk awards. The plan should have specific procedures to monitor those institutions having high-risk awards that were not selected for site visits. Also, NSF management should consider expanding the review procedures for the high-risk awardees to a level commensurate with their level of risk.*

#### **NSF Management Response:**

NSF management has established and implemented the BFA Post-award Monitoring Standing Operating Guidance (SOG) 2005-2, a comprehensive, integrated plan for post-award monitoring of all institutions including those that manage high-risk awards.

The SOG includes the policies and procedures for all levels of monitoring:

- All NSF awards are subject to baseline monitoring. Policies and procedures for baseline monitoring are detailed under tabs 1, 2, 3, and 4 of the SOG.
- Low and medium risk awards are subjected to Federal Cash Transaction Report reviews
- High-risk awards receive advanced monitoring. Policies and procedures for advanced monitoring are found under tabs 4 and 7 of the SOG.

**Independent Auditor Recommendation:** *Clearly state how site visits selections are to be determined. If not all high-risk awardees are to be visited, NSF should document its basis for excluding institutions with high-risk awards from a site visit review including a determination of the sufficiency of the number of awardees selected. In addition, revise the factors used to exclude institutions with high-risk awards from site visits to ensure that the factors used are appropriate considering the level of risk assessed.*

#### **NSF Management Response:**

The selection process that results in the annual site visit plan is clearly described in the SOG under Tab 6, "Risk Assessment Guide for Post-award Monitoring Site Visits," a component of the BFA Award Monitoring and Business Assistance Program (AMBAP). The "Risk Assessment Guide" applies to all NSF awards, excluding contracts and those awards specifically covered by the Facilities Management

and Oversight Guide. The "Risk Assessment Guide" contains the detailed policies and procedures for running the annual risk assessment process.

It is through the risk assessment process that we identify the high-risk awards, the first step in the development of the annual site visit plan. This multi-level, dynamic process resulted in NSF's FY 05 initial identification of 167 institutions as managing high-risk awards.

At this same Tab 6 of the SOG, NSF management clearly documents the additional level of subjective review performed to eliminate organizations from the initially identified 167 universe that were: site reviewed through the Award Monitoring and Business Assistance Program the previous year; on the OIG audit plan or had OIG conducted audit reports issued within the last four years; subject to the policies and procedures of the Facilities Management & Oversight Guide; or, had NSF awards due to expire in the current fiscal year.

To prioritize those organizations to be reviewed this fiscal year from the remaining 70 institutions we considered the following factors: A balanced portfolio by directorate and program; diversity of institution type; geographic location; overdue final project reports; issues with FCTR reporting; NSF oversight cognizance.

This second level of review and analysis is how we determined the 25 institutions that we would site visit in FY2005. The following table demonstrates the process and rationale that was undertaken to make this determination.

	Number of Institutions
<b>Universe of Institutions Managing High-risk Awards</b>	<b>167</b>
LESS Institutions that:	
Had BFA Site Visit in the Last 4 Years	31
Had OIG Audit or Report in the Last 4 Years	12
Had both a BFA Visit and OIG Audit Activity	5
Subtotal	(48)
Institutions with No Current Advanced Monitoring Activity	119
LESS: High-risk Awards Due to Expire during FY2005	(49)
Institutions with No Current Advanced Monitoring Activity and Active Awards	70
LESS: Additional prioritization criteria	(46)
<b>Planned Sites Selected for Visits during FY 2005</b>	<b>24</b>
LESS: Were on the FY2005 OIG Audit Plan	(2)
Final Site Selection	22
PLUS: Sites Identified by:	
Program Request	4
BFA Concerns	2
LESS: Deferred Site Visits	(3)
Net BFA Adjustments	3
<b>Actual Site Visits during FY 2005</b>	<b>25</b>

In the Post-Award Monitoring finding, the auditors conclude, "The 141 institutions that were not selected for site visits became subject to less monitoring than the medium and low risk awardees that are subject to being selected for FCTR transactional testing." This statement is factually incorrect.

In applying the risk analysis procedures outlined under Tab 6 of the SOG for fiscal year 2005, we identified 167 institutions managing high-risk awards. As the following table illustrates, of those 167 institutions or awardees, 99 also manage medium and low risk awards. The medium and low risk awards at those 99 institutions were subjected to the statistical sampling and transaction testing effort conducted under our contract with a Certified Public Accounting firm. The findings from that transactional testing provide information about systemic practices at the awardee institution that informs our monitoring of that institution's high-risk awards. For example, transactional testing of a low or medium risk award can point to the awardee institution's misapplication of its indirect cost rate or the awardee institution's inclusion of expressly unallowable costs. The discovery of indications of an unacceptable systemic practice is considered by NSF in its ongoing monitoring of any high-risk awards at that institution. This practice is consistent with NSF's post-award monitoring program.

An additional 38 institutions were excluded from advanced monitoring, because they were subject to site visits from the IG or BFA in the past four years – as specified in the SOG.

The four remaining institutions, then, were subject to less monitoring than medium and low risk awardees.

	Number of Institutions
<b>Universe of Institutions Managing High-risk Awards</b>	<b>167</b>
LESS:	
Actual Institutions Visited with High-risk Awards	(25)
TBSR Reviews	(1)
Institutions Not Visited in FY2005	141
Institutions with Overlapping Awards:	
Medium and Low Risk Awards	99
Institutions Visited within Previous 4 Years	38
Subtotal	(137)
Institutions With only High-risk Awards that receive only Baseline Monitoring	4

***Independent Auditor Recommendation:*** *Comply with the Guide requirements to ensure that both the objective and the subjective factors are applied during the risk assessment process to capture all high-risk awards.*

**NSF Management Response:**

NSF management complied with the Guide requirements as articulated in Tab 6 of the SOG to ensure that both the objective and the subjective factors were applied during the risk assessment process and captured all high-risk awards at the time the model was run. As our policies and procedures describe, and our documentation demonstrates, this analysis is applied to the entire award universe, and consists of the application of the objective and subjective factors described on pages 2 through 5, Tab 6, of the SOG.

Subjective factors are not only used during the initial phase of the risk assessment. As described in the response to the previous recommendation, subjective considerations influence the final determination of institutions to be visited. Our process allows for Division of Institution and Award Support staff judgment, Grants and Agreements Officers' concerns, and Program Officer concerns to influence the final determination of sites.

**Independent Auditor Recommendation:** *Complete and document the FCTR transactional testing that covers the most currently available FCTRs.*

**NSF Management Response:**

NSF will take this recommendation under consideration; however, the rationale for the selection of FY 2004 FCTRs for review was both a purposeful and reasonable NSF management decision. These services were contracted for as one of two tasks under a contract. The other task under the contract was to satisfy the improper payments review requirement under the President's Management Agenda that NSF management includes in its Performance and Accountability Report (PAR). It is true that the review was performed on FY 2004 FCTRs only; to do otherwise would have caused the government to have to perform two separate FCTR reviews— one for each of the two tasks. This would have represented an additional cost and time for both NSF and our awardees; accordingly, in order to save the government money and make efficient use of taxpayer dollars and awardee efforts, NSF management opted to base the two analyses concurrently. The timing of the data was selected in order to establish a consistent timeframe, especially into the future, in order to facilitate a timely review. The goal is for future reviews to be performed earlier this Fiscal Year so that NSF management will have a final report ready by September 30<sup>th</sup> and available earlier in the annual financial statement audit.

**Independent Auditor Recommendation:** *Complete and document the Total Business System Review (TBSR) for the FFRDCs selected including the review plan and the related report. This includes documenting a detailed Total Business System Review plan.*

**NSF Management Response:**

In accordance with the DCCA Standard Operating Guide 2005-1 "Post-award Monitoring & Oversight of Federally Funded Research and Development Centers (FFRDCs) and Complex Cooperative Agreements" NSF completed TBSR fieldwork on the business systems of the National Astronomy and Ionospheric Center, located in Arecibo, PR and operated by Cornell University, in September 2005. The TBSR review plan was signed by the contracts and program division directors in August. A copy of the signed TBSR plan was forwarded to KPMG on November 1, 2005 along with copies of the SOG and TBSR review plan template.

The TBSR team leaders for both sites briefed NSF management on the results. NSF management held an exit teleconference with Cornell on November 4, 2005, and the draft TBSR report was issued that same day. Cornell will be given 45 days to provide comment on the draft report. NSF will consider the University's reaction, finalize the report, and issue it to Cornell within two weeks. Cornell will be given 30 days to develop a written plan responding to the *areas for improvement* and *suggested actions* identified in the report. Any remaining disagreements will be the subject of further discussions. NSF will follow-up with Cornell on the status of proposed actions using a combination of periodic telephone conferences and semi-annual status reports.

## Management's Response to 05-02 – Contract Monitoring

### **Management Comments on the Finding:**

NSF agrees with the overall objective of the finding -- to strengthen the monitoring of contract oversight. Management has substantial existing controls and oversight in place over the program, budget and contracting areas for our three advance basis contractors. To further strengthen our financial controls we are planning to conduct reviews in FY 2006 of the quarterly expenditure reports. Our NSF management response reflects our commitment.

NSF Management, over the past year, resolved FY 2004 contract monitoring recommendation one, that the Chief Financial Officer develop procedures to require that "public vouchers are adequately certified by the contractors' representatives." NSF management modified the reporting mechanism used by our three advanced basis contractors and required a certification by the contractors on cash draw down requests and quarterly expenditure reports. NSF management worked cooperatively with KPMG and our OIG to devise an agreed upon appropriate certification.

***Independent Auditor Recommendation:*** *Recommend that the Chief Financial Officer develop procedures to require that Quarterly Expenditure Reports are distributed to all responsible officials for review and approval of the reports for accuracy and propriety, correct computations, and authorized purpose under the contractual agreements. In addition, the review and approval process should include periodic testing of a sample of expenditures to actual invoices/other supporting documentation*

### **NSF Management Response:**

During FY 2005, we engaged in a series of discussions on this finding with the OIG and KPMG. We noted that the federal guidance for managing advance payment contracts can be found in the FAR and NSF is fully compliant with those standards. These discussions also clarified that the auditor's purpose for this recommendation is to have management apply the same procedures to posting expenditure reports, under the advance payment contract, as are applied to the payment of invoices. The posting of adjustments resulting from expenditure reports is a different process and involves different control processes. Because we support the opportunity to strengthen our internal control processes, we will continue to pursue implementing a plan to conduct periodic reviews of the quarterly expenditure report for our three advance basis contractors.

As part of this process, copies of the Quarterly Expenditure Report will be provided to the contracting officer and COTR for utilization in monitoring the review. NSF management has been working with KPMG and the OIG to develop acceptable procedures to conduct the recommended reviews. The review will cover, but is not limited to, such factors as accuracy, correct computations, and consistency to the contract. NSF anticipates performing these types of activities for a two-year period, at which time management will assess the results of the reviews and the level of need for reviewing expenditure reports in the future. We will confer with OIG representatives to discuss alternative options for satisfying the auditors' request that expenditure reports be approved.

## Exhibit II Management's Response: Status of FY 2004 Reportable Conditions

### **Post-award Grant Monitoring:**

Exhibit II of the Audit Report, titled, "Status of FY2004 Reportable Conditions", notes the National Science Foundation's considerable progress in addressing the prior years' reportable condition in post-award grant monitoring. This exhibit then goes on to cite the need for additional improvements to supplement the actions we have taken in FY2005, and those additional suggestions comprise the auditors' FY2005 audit recommendations for post-award grant monitoring. It should be noted that there was no reference to Federal Cash Transaction Reports (FCTR's) or Total Business System Reviews for Federally Funded Research & Development Centers in the 2004 recommendations. These issues were raised in FY 2005.

Following are the four recommendations from the FY2004 audit report, and the actions NSF has taken to resolve them.

### **Recommendation One: Revise the fiscal year 2005 risk assessment model so that it identifies all known high-risk awards.**

- NSF/BFA/Division of Institution and Award Support (DIAS) significantly improved and expanded the NSF Risk Assessment Model to include additional objective and subjective factors. The NSF Risk Assessment model assesses the entire NSF grant award portfolio and all awards are classified as either low, medium or high-risk

### **Recommendation Two: Develop and begin implementing a plan for required baseline and advanced monitoring of all grantees.**

A Post-award Monitoring and Business Assistance Program Site Visit Review Guide

- NSF issued Standing Operating Guidance (SOG) 2005-2 that articulated policies and procedures for the host of activities that comprise the NSF) Award Monitoring and Business Assistance Program. This included the following:
  - Documentation for Real-time Baseline Grantee Monitoring performed by the Division of Financial Management (DFM)
  - Documentation for Post Activity Grantee Monitoring processes performed by DFM
  - Documentation for post-award monitoring activities performed by the Division of Grants and Agreements (DGA)
  - Documentation for post-award monitoring activities performed by the Division of Contracts and Complex Agreements (DCCA)
  - Documentation for Low and Medium Risk Award Monitoring – FCTR Reconciliation
  - A Risk Assessment Guide
- NSF/BFA/DFM conducted baseline monitoring on all awards
- NSF/BFA/DFM conducted post activity grantee monitoring processes including Cash on Hand, Days of Cash on Hand, Advances, Interest Income and Program Income
- NSF/BFA/DGA conducted post-award monitoring activities to monitor for compliance with award terms and conditions
- NSF/BFA/DCCA conducted post-award monitoring activities to monitor for compliance with award terms and conditions
- NSF/BFA successfully contracted for services for medium/low risk grant FCTR expenditure sampling
- NSF/BFA/DIAS led Post-award Monitoring and Business Assistance Site Visits to 25 institutions identified as managing high-risk awards and issued the reports during FY 2005
- NSF/BFA/DCCA led the conduct of one Total Business Systems Review on one of NSF's Federally Funded Research and Development Centers (FFRDCs) for which a report will be issued by November 4
- NSF/BFA/DIAS conducted analyses on Final Unobligated Balances

**Recommendation Three: Develop a corrective action plan to address the suggestions in the “Overall Assessment Opportunities for Improvement” section in the *Post-award Monitoring Assessment Report*, dated March 2004.**

In the referenced report, NSF's contractor – International Business Machines (IBM) – stated, “Overall, NSF has a sound post-award monitoring program, which provides valuable oversight and assistance to a risk-based sample of institutions.” That said NSF reached agreement with the auditors as to which among the IBM opportunities for improvement would, if implemented, deliver the greatest value for our investment. NSF developed a corrective action plan that focused on those opportunities and implemented the following improvements:

- NSF increased the length of site visits from approximately four to six hours to two to three days
- Pre-visit communication was improved
- NSF developed standardized procedures for writing the site visit report and collecting and maintaining documentation, including templates and procedures.
- NSF formalized procedures for follow-up and issue resolution after completion of site visits
- NSF increased the weighted value of new awardee status in the risk assessment
- NSF incorporated expanded systems automation into the risk assessment model
- BFA added a more formalized program of outreach to solicit for suggestions for visits from program, BFA divisions and the OIG
- NSF developed a database to collect and maintain the results of visits and shared overall findings and lessons learned during various outreach opportunities
- NSF restructured BFA and BFA/DIAS/Cost Analysis and Audit Resolution Branch (CAAR) to position NSF for success in the Post-award Monitoring and Business Assistance Program. As such, Team Lead and Special Assistant positions were established as follows: Team Lead for Monitoring and Business Assistance; Team Lead for Audit Resolution and Follow-up; and a Special Assistant to the CAAR Branch Chief for Program Liaison, OIG Liaison, and Business Assistance
- NSF/BFA estimated its budgetary costs for Post-award Monitoring
- NSF/BFA is working with the NSF Academy to develop an award monitoring training curriculum
- NSF is considering contracting out certain post-award monitoring activities, and a number of these will be accomplished through our competitive sourcing initiative. This process is underway and includes:
  - A customer feedback tool
  - An estimate of the cost to awardees to participate in post-award monitoring activities
  - The creation of a more formalized database to collect and maintain the results of site visits that will assist in compiling and summarizing the results from the monitoring visits into overall finding and lessons learned to facilitate making results available to NSF staff and awardees.

**Recommendation Four: Increase the resources dedicated to post-award monitoring. This should include increasing the number of professionals fully focused on post-award monitoring, performing more desk reviews and site reviews, and devoting more time to each site review.**

- This year, NSF/BFA significantly increased resources, staff professionals and budgetary resources, dedicated to post-award monitoring activities
- NSF/BFA further augmented these resources and monitoring activities through a contract with a Certified Public Accounting firm that performed transaction testing on a statistically valid sample of Federal Cash Transaction Reports from our medium and low risk universe
- NSF increased the average length of time spent on site for each visit