Audit of Project Reporting for NSF Awards

National Science Foundation
Office of Inspector General

December 13, 2004
OIG 05-2-006

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Executive Summary

Background: In accordance with federal policies, the National Science Foundation requires most principal investigators to submit final and annual reports on the progress of their research projects. The information in these reports is a critical element in post-award administration. In addition to providing information that program officers can use to monitor award progress and identify potential problems, reporting requirements hold awardees accountable for their use of federal funds. The reports also provide NSF with information useful for reporting to the Congress and other stakeholders on the outcomes of the agency's activities.

Purpose: Because a lack of timely information may adversely affect the agency's ability to achieve its goals and the ability of stakeholders to make fully informed strategic decisions, our first audit objective was to determine whether principal investigators were submitting the required final and annual reports, and if so, were they timely.

Our second objective was to determine whether NSF was complying with its policy not to fund a new award to a principal investigator who has not submitted the final project report for a previous NSF award.

Results in Brief: Approximately 47 percent of the 151,000 final and annual project reports required in the past 5 years were submitted late or not at all. Of the 43,000 *final* project reports, 8 percent were never submitted, and 53 percent were submitted, on average, 5 months late. Of the 108,000 *annual* reports, 42 percent were never submitted. NSF does not track due dates for annual reports so we were unable to determine if the annual reports that NSF did receive were on time. A variety of factors contribute to the untimely reporting including that monitoring overdue project reports is a lower priority than other tasks such as reviewing proposals and issuing awards.

Additionally, in 74 of 571 occurrences over the past 5 years, principal investigators received funding for new awards even though they had not submitted final project

reports for prior awards. NSF's automated award system is designed to prevent new funding when a principal investigator owes a final report from a prior award, but does not appear to be working as intended. Only 1 of the 74 occurrences had documentation that indicated NSF made a management decision and overrode the system's controls to allow the new funding. However, for the remaining 73 occurrences, we were unable to determine whether the automated system had failed, or whether someone had manually overridden the system's controls.

Recommendations: To assist its principal investigators in submitting final and annual project reports on time, NSF should continue its plans to develop the report tracking and automated reminder systems. Additionally, NSF should clarify the roles and responsibilities for NSF staff and institutions in ensuring that principal investigators submit timely project reports. It should also emphasize the importance of these reports, and better utilize its administrative staff to help ensure timely reports.

Furthermore, to ensure that NSF treats its principal investigators equally when enforcing agency policy, NSF should require written authorization and documentation whenever it manually overrides controls in the award system. NSF should also monitor the award system to ensure that its controls are functioning as intended.

Agency Response: NSF generally agreed with our findings and recommendations, except that it believes its administrative guidance relative to assistance awards is appropriate. However, the audit findings do not identify guidance that is lacking. Rather, they identify areas where the guidance can be improved, and circumstances where NSF did not always implement its own policies and procedures.

Introduction

Each year the National Science Foundation (NSF) manages a portfolio of approximately 30,000 awards to promote the progress of science and to support research and education in all fields of science and engineering. The awards are made to institutions whose principal investigators conduct the research. Most awards are made using the standard or continuing grant funding mechanism; cooperative agreements are also used.[1] Regardless of the funding mechanism, by accepting federal funds to conduct research, the institutions and the principal investigators agree to a variety of federal and agency-specific terms and conditions. Among these are requirements to report periodically on the progress and accomplishments of the funded projects.

Federal and Agency Project Reporting Requirements
Requirements for reporting on the progress and results of federally funded research are set forth at both the federal and the agency levels. The Federal Government, in the Office of Management and Budget (OMB) Circular A-110,[2] outlines general requirements for monitoring and reporting on program performance. OMB A-110 states that recipients of federal funds are responsible for managing and monitoring each project or activity supported by the federal award, and requires these recipients to submit performance reports both annually and at the end of a project. Such reporting mechanisms provide accountability for taxpayer dollars used to fund the work.

At the agency level, NSF outlines its reporting policies and requirements in a variety of agency documents[3] and also references these requirements in the letters it sends to institutions regarding these awards. NSF policy requires these reports to provide NSF program officers with information on the progress of projects under their responsibility. Information from these reports is also used by the agency for reporting its performance to the Congress, as mandated by the Government Performance and Results Act of 1993.

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[1] For standard grants, NSF provides a specific level of support for a specified period of time, fully funding the grant in a single action. For continuing grants and cooperative agreements, NSF provides a specific level of support for a set period of time, but provides the funding on an incremental basis.
[2] *Uniform Administrative Requirements for Grants and Agreements With Institutions of Higher Education, Hospitals, and Other Non-Profit Organizations*.
[3] These documents include NSF's *Proposal and Award Manual, Grant Proposal Guide, Grant Policy Manual*, and *Grant General Conditions.*

For most awards, NSF specifically requires the principal investigator to submit a final project report at the end of the award.[4] The report is due to NSF within 90 days after the award expiration date, and should include information on the project's activities and results, and identify publications associated with the award. NSF's policy also requires that, if a project lasts 24 months or more, the investigator must submit an annual project report 90 days prior to the end of the project's current budget period.[5] These reports are to include information such as progress of the research and personnel demographics, and identify publications resulting from the research.

Report Responsibilities and Processes

NSF awards funds for research to an institution rather than directly to a principal investigator. As such, NSF holds the institution accountable for financial and overall management of the award. Yet for project reporting, NSF only holds the individual investigator responsible for submitting annual and final project reports, and will not award the investigator new funding until final project reports from any previous awards are received and accepted by a NSF program officer.

NSF holds its program officers generally responsible for routinely reviewing computer-generated reports containing information on overdue final project reports, and for following up with the responsible principal investigators to obtain those reports. NSF also directs its program officers to consult with the Division of Grants and Agreements in those situations where follow-up efforts to obtain a final report are unsuccessful. NSF policies do not detail similar reminder or follow-up responsibilities for the institution receiving the award.

Principal investigators submit their annual and final project reports to NSF via FastLane, NSF's web-based system for transactions related to proposals and awards. FastLane contains standard templates for both annual and final reports that the principal investigators must follow. Once FastLane receives a project report, it automatically places the report in an electronic review folder for the appropriate NSF program officer. The program officer reviews the report and, if satisfied, approves the report in the system. Program officers can also reject reports or ask the principal

[4] NSF does not normally require final project reports for institutional graduate research fellowships and interagency agreements.

[5] NSF is updating its *Proposal and Award Manual* to define the annual reporting period as 12 months from the effective date of the award.

investigator to resubmit a report with more information. After approving or rejecting a report, FastLane provides the program officer with the option to send an email back to the principal investigator.

NSF has a limited number of automatic reminders to principal investigators regarding the due dates of project reports. Although the *Proposal and Award Manual* states that NSF will generate a reminder to the principal investigators approximately 30 days before the award expires, FastLane only notifies principal investigators and their sponsored research officers via email about overdue final project reports if the principal investigator submits a new proposal. NSF does have a reminder system for annual reports due for continuing grants, but, as a rule, NSF does not send principal investigators automatic notification regarding upcoming or overdue annual or final project reports.

Objectives, Scope, and Methodology

Because both annual and final project reports are important elements in award administration, program management, and NSF's reporting on the results of the research it funds, the objectives of our audit were to:

- Determine whether annual project reports and final project reports were submitted in a timely manner, and
- Determine whether NSF ensures that it does not fund new awards to principal investigators and co-principal investigators with outstanding final project reports.

To determine whether annual and final project reports were received in a timely manner, we requested and obtained data from NSF on final and annual project reports as of July 26, 2004, for all standard grants, continuing grants, and cooperative agreements that had reports due for the 5-year period between May 1, 1999, and May 31, 2004.[6] We analyzed the final report data to identify missing, late and on-time reports agency-wide and by directorate, division, institution type, and award mechanism. We also obtained data on whether annual reports were filed and accepted. However,

[6] Cooperative agreements constituted less than one percent of the awards requiring final project reports. Therefore, we did not address cooperative agreements in our report.

we were not able to assess their timeliness because NSF's awards system does not track annual project report due dates.

We interviewed a sample of NSF program officers and division directors to discuss their responsibilities and practices for reviewing project reports and reminding principal investigators that these reports were due or overdue. The sample included 33 program officers from 11 of NSF's 36 program divisions and offices.[7] The program officers represented 8 percent of NSF's 380 total program officers, and their divisions were those with the highest or lowest rates for missing and late final project reports and missing annual project reports. (See Appendices B and C for division data.)

We also interviewed 19 principal investigators and staff from 13 sponsored research offices at institutions to understand their perspectives on the purpose of project reports, how they are used by NSF, and NSF's reminder systems for upcoming and overdue reports.

Finally, for the same period of time, we reviewed agency-provided data for all awards to determine whether NSF was implementing its policy that principal investigators with outstanding final project reports could not receive new funding for subsequent awards.

We conducted our work between May 2004 and November 2004 in accordance with generally accepted government auditing standards.

[7] We included the program divisions within each directorate and the Office of Polar Programs, Office of Integrative Activities, and the Office of International Science and Engineering. We did not include the smaller number of awards made by the Assistant Director Offices at the directorate level.

Results of Audit

Reporting on the progress and results of science, education, and engineering research funded by NSF demonstrates researchers' accountability by helping to ensure that federal funds are spent as intended. Without timely reports, NSF cannot ensure adequate progress of the projects or address potential problems quickly. Thus, ensuring the timely submission of annual and final project reports is a critical element in NSF's post-award administration activities.

Nevertheless, we found that 71,500 reports, almost half of the approximately 151,000 annual and final project reports required over a five-year period, were submitted late or not at all. A variety of factors contribute to these late or missing reports including NSF's failure to implement all of its post-award administration policies, and a lack of post-award administration policies addressing specific roles and responsibilities. NSF also lacks a clear policy that communicates the importance of project reports to NSF's program officers, the institutions receiving awards, and the principal investigators conducting the research.

Additionally, although NSF requires principal investigators to have submitted their final project reports before receiving funding for new awards, we identified 74 cases where a principal investigator with an overdue report received new funding. NSF's automated system provides the control that prevents the new funding, yet we were unable to determine whether the cases occurred due to system errors or manual overrides of the system. Only one file contained the necessary documentation to support that an appropriate management override of the system had occurred. Without management controls to ensure proper documentation of the occurrence and reasons for exceptions, NSF cannot ensure that it treats all principal investigators equitably and holds them accountable for the proper use of the federal funds they received.

Many Project Reports Not Submitted in a Timely Manner

NSF award agreements require principal investigators and co-principal investigators to submit annual and final project reports as a condition of receiving an award. With few exceptions, NSF requires the principal investigator to submit a final project report to NSF within 90 days after the award's expiration date. For an award spanning two years or more, NSF also requires that the principal investigator submit annual project reports within 90 days before the end of each of the award's budget periods. However, of approximately 43,000 final project reports required between May 1999 and May 2004, about 22,800 final reports (53 percent) were submitted late. These reports were overdue by an average of 5 months, but approximately 200 final reports were received 3 to 5 years late. Further, as of July 2004, another 3,700 final reports (8 percent) had not been submitted at all and had been missing for an average of more than 26 months.

During the same 5-year period, NSF required approximately 108,000 annual project reports from principal investigators with multi-year awards. While NSF received 58 percent of these annual reports, over 45,000 (42 percent) had not been submitted. Because NSF's systems do not track due dates for all annual project reports, we could not determine whether a principal investigator had submitted the report on time.

Variations in Submission Rates by Directorate and Other Characteristics

The rate at which principal investigators submitted timely annual and final project reports varied somewhat by directorate and by type of institution, but trends in report timeliness were more readily apparent at the division level and by award mechanism.

Overall, NSF's eight directorates' rates for receiving final project reports were generally consistent, with the directorates receiving between 46 and 57 percent of final project reports late, and missing 5 to 14 percent of the reports. For the required annual project reports, between 31 and 49 percent were missing at the directorate level, except for one directorate that was missing 68 percent of its required annual project reports. (See Appendix D for directorate data.)

Similarly, the range for late and missing final project reports did not vary greatly among the different types of educational institutions receiving NSF awards, such as universities, community colleges,

and school districts.[8] For each type of institution, between 44 and 65 percent of final project reports were late or were missing. For annual project reports, between 34 percent and 51 percent were missing among the different types of institutions.

While directorate rates were generally consistent, greater variation existed at the division level. For example, the combined rate for late and missing final reports ranged from as low as 34 percent for 1 division to 70 percent or more for 3 other divisions, with most experiencing rates of 60 to 69 percent. Similarly, the divisions were missing annual project reports at rates varying between 16 and 84 percent. (See Appendices B and C for data on each division.)

Principal investigators submitted final project reports at similar rates regardless of award mechanism, but they submitted annual project reports for continuing grants much more frequently than for standard grants. This fact is not surprising given that future funding for the principal investigator is dependent upon reports being submitted. Principal investigators did not submit 70 percent of annual project reports required for standard grants, but they failed to submit only 16 percent of annual project reports for continuing grants. No annual project reports were missing for continuing grants in fiscal year 2004.

Impact of Untimely Reporting

These statistics indicate that NSF faces a significant challenge in receiving project reports in a timely manner, affecting the quality of NSF's post-award administration at the project, program, and agency levels. Without timely annual project reports, an NSF program officer may not be able to address potential problems that could impair the satisfactory performance of a funded project. Also, missing and untimely final project reports lessen NSF's ability to evidence its stewardship of federal funds and demonstrate the value of its research investments. By not establishing the management tracking systems needed to identify and follow up on late and missing reports, NSF may give the appearance that it does not place a priority on these reports, thus undermining its post-award monitoring activities.

[8] The data was sorted into seven categories of institutions: 2-year but less than 4-year colleges; 4-year colleges; Kindergarten – Grade 12; Master's or 1st professional degree; PhD or equivalent; trade schools/2-year schools; and "other," which includes associations and small businesses. We omitted the category Trade schools/2-year schools from our analysis because it contained only four awards.

In addition, because of missing or late project reports, NSF management, the National Science Board, NSF's advisory committees, and the scientific community may not be fully informed about the results of the research funded by NSF. Tracking the results of NSF's research is essential to setting future research policy and strategic direction, and ensuring that the research funded contributes to that direction. Finally, NSF cannot ensure it is receiving performance and outcome data for its full portfolio of funded research, thereby limiting its ability to report its performance under the Government Performance and Results Act (GPRA), and to fully inform stakeholders, including the Congress and taxpayers, of the benefits and knowledge gained as a result of its investments.

Various Causes for Untimely Reporting

We identified several possible factors that contribute to the high number of late and missing reports. In general, NSF's post-award administration policies are weakened because NSF has not always implemented its current policies. In other circumstances, NSF lacks the policies and infrastructure to support and ensure timely submission of project reports. NSF management also may not be communicating clearly to principal investigators and institutions the importance of these project reports and instead, may be sending conflicting messages about how these reports are used for agency performance reporting. The financial incentive associated with submitting annual project reports may also play a role in determining whether these reports are submitted. Finally, NSF may not be fully utilizing its administrative staff in supporting award administration activities.

Policies related to project reports not implemented or lacking: NSF policy states that the agency will generate final report reminders to the principal investigator and the institution's sponsored research office approximately 30 days prior to the expiration of the award. If NSF was following that policy, its system should have generated reminders for over 8,900 final project reports in 2003. However, NSF officials stated that this policy has not been implemented since NSF began the electronic processing and management of awards and proposals.

Currently, NSF sends a reminder for an *overdue* final project report to the principal investigator and the institution's sponsored research office *only* if the principal investigator submits a new proposal to NSF for funding. The program officer also receives a copy of this message. Although individual program officers may send reminders to their principal investigators, NSF has no agency-wide

system to proactively notify principal investigators or program officers that final reports are coming due or are overdue.

Furthermore, although NSF policy details program officers' specific roles and responsibilities for final reports, it has no such guidance for managing annual project reports. In addition, while NSF does issue reminders for annual project reports due for continuing grants, it does not have any type of annual report reminder system for standard grants, which constitute 63 percent of NSF's awards.

NSF's lack of an adequate report reminder system was noted by most of the program officers we interviewed. Also, most of the principal investigators and sponsored research office staff stated they would appreciate receiving reminders prior to due dates for both types of project reports.

Lack of Policies Related to the Institutions' Role: NSF policies are also lacking with respect to the role that NSF expects institutions' sponsored research offices to play in ensuring that project reports are submitted on time. Sponsored research offices are an integral part of the proposal and award cycle because NSF requires principal investigators to submit proposals through these offices and makes the award to the institution and not the principal investigator. Once an award is made, the institution is responsible for the financial management and financial reporting for the award. Institutions are required to submit quarterly financial reports, and as part of this process, NSF provides the institutions with final project report status information. However, NSF's policies do not establish its expectations for the roles and responsibilities institutions should have in ensuring that principal investigators submit timely project reports. The institutions' staff we interviewed all approached their role in ensuring timely reports differently, with some tracking both final and annual reports, and others tracking only one or the other type of report. Additionally, NSF does not penalize the institution if their principal investigators do not submit their reports in a timely manner.

NSF also does not have a policy to allow an institution to submit a final project report in those circumstances when the principal investigator is no longer available. Program officers we interviewed frequently cited difficulties in obtaining reports in situations where a principal investigator leaves an institution and there is no one else to submit the final project report. Thus, NSF's lack of policy drastically reduces the chance that NSF will receive a report if the principal investigator leaves the institution.

Communication of the Importance of Project Reports within NSF: NSF lacks clear policies describing the many possible uses and importance of timely project reports as they relate to post-award administration and accountability. As a result, NSF needs strong policies to send a clearer message about the potential uses and importance of project reports.

While NSF policies state that project reports are to be used for performance reporting and gathering information on the progress of awards, these policies do not outline other potential uses for these reports, such as setting future research agendas, identifying trends in research, or demonstrating the quality and worth of the funded projects. In a broader context, the existing policies do not detail the stewardship responsibilities that accompany the role of program officer.

NSF may send an internal message that these reports are less of a priority when compared to other staff responsibilities, such as processing proposals in a timely manner. This message is reinforced by the agency having a performance goal of processing 70 percent of all proposals within 6 months but having no similar performance measure to assess the timeliness of project reports.

Furthermore, because of the temporary nature of many of its program officers, NSF needs to have clearer post-award administration policies to better inform program officers about their responsibilities. Almost one-half of NSF's program officers are visiting personnel and will only be with the agency one to four years. Therefore, written policies must clearly emphasize the importance of the program officers' role in post-award administration activities, including the timely receipt and use of project reports.

Communication of the Importance of Project Reports to Institutions and Principal Investigators: NSF also may be communicating unclear or conflicting messages about the importance of these reports to principal investigators and institutions. Most principal investigators we interviewed were unsure how NSF used the information in the reports, yet program officers do use them for documenting progress and performance. Additionally, NSF may be sending a conflicting message to principal investigators regarding the importance of annual and final project reports in informing reporting under the GPRA because most of NSF's divisions have created a separate process or system for principal investigators to report the results of their research for this purpose. NSF's policy manual explains that information from these reports is used in

annual reports to Congress to demonstrate the Foundation's performance as mandated by GPRA. Some of the program officers confirmed that they use annual and final project reports to identify ideas for GPRA reporting. However, almost all of NSF's divisions have established a separate system or process for collecting GPRA "nuggets," highlights of research, engineering and education projects. These include sending principal investigators emails requesting "nuggets" and requiring that the "nuggets" be in a specified format, such as a PowerPoint file. These parallel systems for soliciting research results can increase the time that both program officers and principal investigators spend on performance reporting, and can make the principal investigators wonder why project reports are needed when highlights of the results can or have already been provided in the annual or final project reports.

Financial Incentives for Submitting Annual Project Reports: NSF policy provides financial incentives for submitting annual reports for continuing grants, but not for standard grants. The standard grant provides all of the funding for a multi-year project at the beginning of the award, while the continuing grant provides funding in annual increments over a set period of years. Continued annual funding during the continuing grant's set period depends on several factors, including availability of funds and NSF's receipt of the annual report documenting the project's progress. Thus, the continuing grant provides principal investigators with a financial incentive for submitting annual project reports on time. According to agency-provided data, over a five-year period, NSF awarded standard grants about 63 percent of the time and awarded continuing grants about 37 percent of the time.[9] However, NSF was missing approximately 70 percent of the required annual project reports for standard grants, but only 16 percent of the required annual reports for continuing grants. Furthermore, no annual project reports were missing for continuing grants in Fiscal Year 2004.

While NSF provides a strong financial incentive for submitting annual reports for continuing grants, NSF also takes an additional step to ensure that principal investigators with continuing grants submit their annual reports. NSF's Division of Institutional and Award Support coordinates with each of NSF's 36 divisions to ensure that annual report reminders for continuing grants are sent out, often in advance of the reports' due dates. NSF has no similar agency-wide reminder system for its standard grants.

[9] Cooperative agreements made up less than one percent of the awards, and our data did not include contracts.

Utilization of Administrative Staff: Program officers face a continually increasing workload that may force them to make choices and place less emphasis on post-award administration, including following up on overdue project reports. Some divisions ensure proper monitoring by having administrative staff responsible for identifying upcoming or overdue project reports. The administrative staff is also responsible for following up with the principal investigators. By establishing this supporting infrastructure for the program officers, the divisions have helped control the program officers' workload while still ensuring that award monitoring continues.

Conclusion

The environment in which NSF and its research communities function is increasingly focusing on post-award accountability for how federal funds are invested. The Government Performance and Results Act, enacted in 1993, helped begin the movement to make the Federal government more results oriented. In 2001, the President's Management Agenda established a strategy for improving the management of the Federal government, and requires the integration of performance reviews of Federal programs with budget decisions on agency funding as one of its five initiatives. The Improper Payments Information Act (Public Law 107-300) seeks to improve financial performance, and the Office of Management and Budget's Program Assessment Rating Tool evaluates program performance, identifies program strengths and weaknesses, and provides program effectiveness ratings to assist in the budget decision-making process.

Within this framework of post-award administration and accountability, NSF policy places significant responsibilities on its program officers to ensure that final project reports are submitted in a timely manner. The agency, however, is not always providing the program officers with the management tools and support structures, such as tracking systems and clear policies on the roles of program officers, principal investigators, and institutions' sponsored research offices, to attain and ensure timely project reporting. For annual project reports, NSF does not provide program officers with either the policies or the management tools to ensure these reports are submitted in a timely manner. Regardless of the type of project report, NSF may not be using its supporting infrastructure of systems, policies, and administrative staff to the fullest capacity to help ensure the timely submission of reports.

NSF's policies outline the roles and responsibilities for institutions' sponsored research offices for the financial administration of awards. Yet NSF policies are silent on these offices' roles and responsibilities when it comes to ensuring that project reports are submitted timely. As the entity receiving the award, the sponsored research offices should have a primary role in monitoring both annual and final reports, but NSF has not clearly communicated this expectation in its policies.

NSF needs to provide additional infrastructure, tools, and policies to demonstrate management's commitment to post-award administration and to maximize everyone's role in ensuring accountability. By developing new policies and strengthening existing ones, NSF can send a strong, clear message to the research communities, Congress, and taxpayers that post-award administration, including reporting on the results of the research and the knowledge gained, is important.

Proposed NSF Actions

Recently, NSF has proposed changes to its *Proposal and Award Manual* that clarify some reporting requirements, as well as the responsibilities of program officers as they relate to project reporting. NSF has also indicated that it is working to develop an automated tracking system for annual and final project reports, and a notification system to remind principal investigators prior to the end of a reporting period that a report is due. These improvements will also provide institutions' sponsored research offices with more accessible information regarding report due dates. We have considered these proposals in our recommendations.

Recommendations

To strengthen NSF's post-award administration policies and procedures, we recommend that the Chief Financial Officer and the Director, Office of Information and Resource Management:

1-1) Continue with plans and develop tracking and automated reminder systems for annual and final project reports. These systems should:

> a) Remind principal investigators, prior to the end of a reporting period, that a report is due, and again if project reports become overdue. The automated report reminders should contain information explaining the importance of these reports and how they are used by the agency to

monitor and report on the programmatic performance of its research portfolio.

b) Include a module, within the electronic awards management system, that allows appropriate NSF staff to easily review the due dates for annual and final project reports for those awards in their portfolios. NSF staff should review this information and take appropriate action to ensure the timely submission of the reports.

1-2) Strengthen current NSF policies on ensuring the timeliness of project reports by:

a) Updating the *Proposal and Award Manual* to describe the roles and responsibilities of NSF staff relative to the timeliness of annual project reports, as it does for final project reports.

b) Outlining in more detail the roles of institutions. This includes placing responsibility on the institution to track project report due dates and inform principal investigators about their responsibility to submit these reports on time.

c) Establishing procedures for institutions to submit final project reports when principal investigators leave the institution or are otherwise unable to submit the project reports.

1-3) Emphasize the importance of project reports to principal investigators and institutions' sponsored research officers by:

a) Modifying the award letter to include the due dates for both annual and final project reports for that award.

b) Modifying FastLane to notify a principal investigator when an annual or final project report was received and approved by the program officer.

c) Modifying FastLane's annual and final project report modules to include a section for principal investigators to submit performance data for their award for Government and Performance Results Act reporting, in order to eliminate duplicate reporting of project results.

1-4) Develop policies and procedures to incorporate roles and responsibilities for administrative staff in helping to ensure the timely receipt of project reports. Such responsibilities could include identifying and tracking upcoming and overdue final and annual project reports.

1-5) Develop goals and performance measures, as part of the agency's annual performance plan, to evaluate the agency's performance in ensuring the timely submission of final and annual project reports.

NSF Has Funded Investigators with Overdue Final Project Reports

NSF's policy states that principal investigators and co-principal investigators will not receive funding for new awards until the final project reporting obligation is fulfilled on all prior awards. To enforce this policy, NSF's automated proposal processing system was designed to ensure that new funding does not occur in this situation. While NSF expects the system to always stop new funding when final reports have not been provided, during the past 5 years NSF had 74 cases where principal investigators or co-principal investigators received new funding, although NSF had not accepted their final reports for earlier projects.

NSF does not prevent a principal investigator with an overdue final report from submitting a new proposal, and includes the new proposal in the merit review process. However, if the proposal is selected for funding, NSF's proposal processing system will block the proposal from receiving funds until the final project report from the prior award is submitted and accepted by NSF. Many of the program officers we interviewed rely solely on the system to identify this situation and withhold new funding. They took no additional steps to ensure that the principal investigators turned in outstanding final project reports before they recommended them for award.

Agency-provided data showed that over a five-year period, NSF's system identified overdue final reports and stopped subsequent funding in 497 cases. However, in 74 cases, principal investigators inappropriately received funding for new awards. In 45 of these cases, the principal investigators had submitted their final project reports, but NSF had not yet approved them. These new awards totaled $14 million. In the other 29 cases, the principal investigators had not submitted their reports to NSF at the time the new awards, totaling $8 million, were made. In all 74 instances, if the internal control in the system was working as designed and intended, with no tolerance for errors, no new funding should have occurred.

At the time of our audit, NSF was unsure of why these cases of new funding occurred. Two possibilities exist: the automated system was not working as expected, or someone manually overrode the internal control provided in the system. Prior to our audit, NSF had not developed a process to test the system to verify that it was working as intended to prevent principal investigators with outstanding final project reports from receiving new funding.

In addition, at the time of our audit, five NSF employees had the ability to manually override the system to change the final report status code.[10] An NSF employee confirmed that such overrides had occurred in order to process new awards. However, NSF has no policies or internal controls for this type of override. Furthermore, with one exception, NSF staff did not document these actions in eJacket, NSF's electronic, web-based internal grants management system. Therefore, we could not determine if these new funding actions occurred due to overrides and, if so, whether the overrides were appropriate.

When NSF makes new awards to principal investigators who have outstanding final reports, it does not hold the principal investigators accountable for the federal funds they received for prior awards. Performance reporting to stakeholders also may be affected because NSF is not receiving information about the results of its funded projects. Furthermore, NSF is not treating principal investigators equitably when it does not consistently deny funding in these cases. These situations can also undermine the efforts of institutions that are trying to get principal investigators at their institutions to submit their project reports on time.

Manually overriding an automated control system with no tolerance for errors or exceptions is an action that must be taken very seriously. We recognize that there will be extenuating circumstances where NSF must balance the integrity of internal controls with the need to process a new award. However, in these instances, NSF must have strong policies and internal controls to ensure that such actions are only taken when appropriate and are completed only by authorized staff. In addition, the reasons for the override should be documented in agency records and the frequency of such overrides should be recorded and tracked.

Recommendation

We recommend that the Chief Financial Officer and the Director, Office of Information and Resource Management:

2-1) Develop policies and procedures to specify required actions when management determines it appropriate to allow a new award to be processed when the principal investigator has not submitted

[10] We contacted NSF about the appropriateness of each of the five people having this ability. A NSF employee stated that three of the people should not have authority to do so and will update NSF systems accordingly.

or NSF has not approved a final project report from an earlier award. The procedures should require management to specifically document:

- The reasons for allowing the new award to be funded;
- Personnel authorizing the funding; and
- Any follow-up actions to be taken and due dates for those actions.

The procedures should also ensure that the program officer is notified when such action is taken. NSF should continue to limit the number of employees provided access to complete these types of overrides, and ensure that these employees are not also the authorizing official for the override. Implementing these internal controls will help to ensure the integrity of the process.

2-2) Develop policies and procedures for monitoring the award system on a regular basis to ensure that the system is functioning with a zero tolerance for error, and ensure that the instances where investigators with overdue final reports obtained new funding were properly authorized and documented.

Agency Response to Findings and Recommendations

NSF generally agreed with our findings and recommendations, except that it "feels that all aspects of OMB administrative guidance relative to assistance awards has been appropriately and thoroughly covered by NSF via its Grant Conditions and supplemental coverage documented in the Grant Proposal Guide and Grant Policy Manual." The audit findings do not identify guidance that is lacking. Rather, they identify areas where the guidance can be improved. The audit also identified circumstances where NSF did not implement its own policies and procedures. For example, its policies state that NSF will send reminder notices for final project reports. However, with the implementation of its current award systems, NSF no longer sends these reminders on a regular basis. NSF's proposed award system is expected to correct this issue. Appendix A contains the agency's response in full.

Other Matters for Consideration

During the course of our audit we identified other improvements NSF could make to systems, policies, and procedures to help improve the timely submission of annual and final project reports. We offer the following suggestions for NSF's consideration.

- *Require an annual project report before granting a no-cost extension.* Currently, an institution can obtain a no-cost extension for an award without submitting an annual project report. Some of the program officers we interviewed agreed that NSF should require a principal investigator to submit a report before granting a no-cost extension. Requiring such reports to be submitted and approved by NSF would help hold the principal investigator accountable for the funds received to date.

- *Develop and document policies and procedures for waiving final project reports.* While certain NSF staff within the Division of Institutional and Award Support have authority to waive final project reports, NSF has no policies, guidelines, or internal controls over these actions. Developing and documenting such policies would help strengthen the internal controls in this area.

- *Require a single report for collaborative research involving multiple principal investigators, institutions, and awards.* Currently, NSF requires each award's principal investigator to submit project reports. Given the increasing focus on collaborative work crossing traditional lines of scientific disciplines, NSF should consider requiring only one report for the overall project.

- *Develop a system that prevents a principal investigator with an outstanding final report from being added to an existing award.* In the course of our audit, we identified two cases where a principal investigator with an overdue final project report was later added to an existing award, without having submitted the report. Such a system check would be consistent with NSF's policy not to permit new funding to principal investigators with overdue final project reports.

Appendix A: Agency Response

Date: December 10, 2004

From: [redacted]
Office of Budget, Finance & Award Management

To: [redacted]
Associate Inspector General for Audit

Subject: Comments on OIG Draft Audit Report Dated November 15, 2004

BFA's Division of Institution & Award Support has completed its review of the referenced draft audit report. This transmits BFA's summary comments on the various draft audit findings. For the record, BFA has been proactively addressing the recommended policy updates and clarifications, and system enhancement findings cited in the audit report. We are in the process of updating the Proposal and Award Manual and the Grant Policy Manual, and developing system requirements for a new comprehensive project report tracking system.

Most of the system recommendations cited in the audit findings are already included as part of proposed systems specification of notification and tracking system for project reports, including a reminder component. BFA in concert with DIS over the past several months has been developing system requirements for a comprehensive notification and tracking system. We have also been working on implementing the various systems hard edits recommended in the audit throughout NSF's back office systems. A hard edit not recommended in the audit findings, but being considered by NSF, would prevent any awards from being made to principal investigators with overdue annual as well as final project reports. In addition, no action would be permitted if (funded and post-award administrative) a principal investigator has any type of overdue project reports (annual or final).

NSF does take exception to the audit finding on page 5 regarding "NSF's failure to implement all post-award administration policies. . " NSF feels that all aspects of OMB administrative guidance relative to assistance awards has been appropriately and thoroughly covered by NSF via its Grant Conditions and

supplemental coverage documented in the Grant Proposal Guide and Grant Policy Manual. There is no evidence provided in this report to substantiate this finding. NSF continues to review its policies and systems to assist NSF recipients in their understanding of grant post award requirements.

Appendix B: Division Statistics – Final Project Reports

The following table provides information on final project reports for the 36 divisions included in our analysis.[11]

Directorate	Division/Office	Number of Final Reports Due	Percent of Final Reports turned in on time	Percent of Final Reports turned in late	Percent of Final Reports Missing	Percent of Final Reports turned in late or missing
Engineering (ENG)	Design, Manufacturing and Industrial Innovation	2652	66%	31%	3%	34.13%
Math and Physical Sciences (MPS)	Materials Research	2146	48%	49%	3%	51.72%
Education and Human Resources (EHR)	Elementary, Secondary, and Informal Science Education	731	44%	46%	10%	56.22%
MPS	Physics	1136	43%	50%	7%	56.60%
EHR	Graduate Education	97	43%	57%	0%	56.70%
Science, Behavioral, and Economic Sciences (SBE)	Science Resources Statistics	28	43%	32%	25%	57.14%
Geosciences (GEO)	Atmospheric Sciences	1524	43%	54%	4%	57.48%
GEO	Ocean Sciences	2103	42%	55%	4%	58.44%
ENG	Chemical and Transport Systems	1123	41%	53%	5%	58.50%
MPS	Chemistry	1930	41%	51%	9%	59.43%
Computer and Information Systems and Engineering (CISE)	Information and Intelligent Systems	786	40%	52%	9%	60.43%
Office of the Director (O/D)	Polar Programs	983	39%	57%	3%	60.53%
EHR	EPSCoR	107	38%	53%	8%	61.68%
CISE	Computing and Communication	1267	38%	58%	4%	62.27%

[11] Note: We did not include awards made at the Directorate level or the Office of the Director (with the exceptions of the Office of Polar Programs and the Office of Integrative Activities). Also, at the time we began our audit work, the Office of International Science and Education (OISE) was administratively part of the Social, Behavioral, and Economic Sciences Directorate. OISE has since been moved to the Office of the Director.

Directorate	Division/Office	Number of Final Reports Due	Percent of Final Reports turned in on time	Percent of Final Reports turned in late	Percent of Final Reports Missing	Percent of Final Reports turned in late or missing
	Research					
ENG	Electrical and Communications Systems	1014	38%	53%	9%	62.33%
EHR	Human Resource Development	365	38%	47%	15%	62.47%
CISE	Advanced Networking Infrastructure and Research	622	37%	55%	7%	62.86%
MPS	Mathematical Sciences	3182	37%	54%	9%	63.20%
ENG	Civil and Mechanical Systems	1297	36%	54%	10%	63.69%
EHR	Research, Evaluation, and Communication	291	36%	53%	12%	64.26%
SBE	International Science and Engineering	1640	36%	54%	10%	64.45%
ENG	Bioengineering and Environmental Systems	698	35%	53%	12%	65.19%
CISE	Experimental and Integrative Activities	387	35%	65%	0%	65.37%
EHR	Educational System Reform	87	34%	47%	18%	65.52%
EHR	Undergraduate Education	2514	34%	50%	16%	65.83%
Biological Sciences (BIO)	Division of Molecular and Cellular Biosciences	1632	34%	47%	19%	65.87%
SBE	Behavioral and Cognitive Sciences	1894	34%	56%	10%	66.31%
BIO	Environmental Biology	1656	34%	60%	6%	66.43%
BIO	Biological Infrastructure	1028	33%	56%	10%	66.73%
GEO	Earth Sciences	2470	33%	61%	6%	67.29%
MPS	Astronomical Sciences	660	32%	59%	10%	68.33%
BIO	Integrative Biology and Neurosciences	2042	32%	52%	17%	68.41%
SBE	Social and Economic Sciences	2268	31%	60%	9%	69.22%

Directorate	Division/Office	Number of Final Reports Due	Percent of Final Reports turned in on time	Percent of Final Reports turned in late	Percent of Final Reports Missing	Percent of Final Reports turned in late or missing
ENG	Engineering Education and Centers	457	30%	60%	10%	70.24%
CISE	Advanced Computational Infrastructure and Research	211	29%	50%	21%	70.62%
O/D	Integrative Activities	125	26%	60%	14%	74.40%

Appendix C: Division Statistics – Annual Project Reports

The following table provides information on annual project reports for the 36 divisions included in our analysis.[12]

Directorate	Division/Office	Number required	Number received	Percent not received
Computer and Information Science and Engineering (CISE)	Information and Intelligent Systems	2935	2464	16%
Math and Physical Sciences (MPS)	Physics	3073	2473	20%
MPS	Materials Research	5670	4443	22%
Biological Sciences (BIO)	Molecular and Cellular Biosciences	4356	3357	23%
Education and Human Resources (EHR)	Educational System Reform	137	102	26%
MPS	Chemistry	5471	4066	26%
Geosciences (GEO)	Atmospheric Sciences	4075	3012	26%
EHR	Elementary, Secondary, and Informal Science Education	2567	1812	29%
Engineering (ENG)	Bioengineering and Environmental Systems	1872	1253	33%
EHR	Human Resources Development	1013	677	33%
Office of the Director (O/D)	Polar Programs	2864	1914	33%
MPS	Astronomical Sciences	2281	1508	34%
EHR	Research, Evaluation, and Communications	975	641	34%
CISE	Advanced Networking Infrastructure and Research	2831	1810	36%
BIO	Integrative Biology and Neurosciences	4763	2956	38%
CISE	Computing and Communication Research	4551	2742	40%
BIO	Biological Infrastructure	2714	1612	41%
MPS	Mathematical Sciences	8530	4797	44%
EHR	EPSCoR	243	130	47%

[12] Note: We did not include awards made at the Directorate level or the Office of the Director (with the exceptions of the Office of Polar Programs and the Office of Integrative Activities). Also, at the time we began our audit work, the Office of International Science and Education (OISE) was administratively part of the Social, Behavioral, and Economic Sciences Directorate. OISE has since been moved to the Office of the Director.

Directorate	Division/Office	Number required	Number received	Percent not received
ENG	Engineering Education and Centers	1601	851	47%
GEO	Ocean Sciences	5751	3038	47%
CISE	Advanced Computational Infrastructure and Research	450	236	48%
ENG	Design, Manufacture, and Industrial Innovation	2908	1452	50%
ENG	Chemical and Transport Systems	2491	1226	51%
EHR	Graduate Education	503	245	51%
ENG	Electrical and Communications Systems	2611	1270	51%
OD	Integrative Activities	125	59	53%
ENG	Civil and Mechanical Systems	3173	1481	53%
BIO	Environmental Biology	4499	2056	54%
EHR	Undergraduate Education	5506	2492	55%
GEO	Earth Sciences	5946	2356	60%
SBE	Behavioral and Cognitive Sciences	3510	1389	60%
SBE	Social and Economic Sciences	4400	1648	63%
CISE	Experimental and Integrative Activities	423	141	67%
SBE	Division of Science Resources Statistics	44	11	75%
SBE	International Science and Engineering	3382	543	84%

Appendix D: Directorate Statistics – Final and Annual Project Reports

The following table provides information on project reports for the 8 directorates included in our analysis.

Final Project Report Data, By Directorate:

Directorate	Number On Time	Number Late	Number Missing	Percent On Time	Percent Late	Percent Missing	Percent Late and Missing
Biological Sciences	2100	3399	862	33	53	14	67
Computer and Information Science and Engineering	1216	1843	214	37	56.	7	63
Education and Human Resources	1538	2073	589	37	49	14	63
Engineering	3448	3310	489	48	46	7	52
Geosciences	2343	3508	280	38	57	5	62
Math and Physical Sciences	3694	4706	661	41	52	7	59
Office of the Director	420	638	56	38	57	5	62
Social, Behavioral, and Economic Sciences	1932	3311	589	33	57	10	67

Annual Project Report Data, By Directorate:

Directorate	Number required	Number received	Percent not received
Biological Sciences	16401	10062	39
Computer and Information Science and Engineering	11190	7393	34
Education and Human Resources	11074	6168	44
Engineering	14664	7542	49
Geosciences	15947	8537	46
Math and Physical Sciences	25037	17287	31
Office of the Director	2991	1973	34
Social, Behavioral, and Economic Sciences	11382	3633	68