

# **Audit of the University of Pennsylvania Effort Reporting System**

**National Science Foundation  
Office of Inspector General**

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## ACRONYMS

<b>NSF</b>	National Science Foundation
<b>OMB</b>	Office of Management and Budget
<b>UPENN</b>	University of Pennsylvania

## **SECTION I**

### **INTRODUCTION**

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## Introduction

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### Background

Approximately one third of the National Science Foundation (NSF) award funds are budgeted for salary and wages, amounting to about \$1.3 billion annually at universities. Also, recently there have been several civil settlements involving overcharges of labor costs to Federal grants, amounting to millions of dollars at several major universities, including some funded by NSF. Because of these legal actions and the material amounts of labor costs paid from NSF awards, the Office of Inspector General undertook a review of NSF's top-funded institutions to assess the adequacy of their accounting and reporting processes for labor costs. This audit, involving the University of Pennsylvania (UPENN), is the first in the series of our planned audits regarding labor costs.

UPENN, founded in 1751, is a private non-profit university located in Philadelphia, Pennsylvania. In fiscal year 2005, UPENN had an operating budget of \$4.25 billion, which included \$2.18 billion for payroll and associated fringe benefits.<sup>1</sup> The research community within UPENN has an annual budget of more than \$750 million dollars and comprises 25 research centers and institutes, over 1,000 faculty, 1,000 postdoctoral fellows, 3,000 graduate students, and 5,000 support staff. These individuals are from 4 undergraduate and 12 graduate schools involving a diverse number of science disciplines within the Departments at each school. The scale and interdisciplinary character of UPENN's research activities make it a nationally ranked research university. In fiscal year 2004, UPENN spent \$554 million of Federal funds, which included \$29 million of costs funded by NSF for research and educational related projects. Approximately \$9.4 million of these NSF award costs were for salaries and wages of faculty, staff and students who worked on research activities in carrying out award objectives.

UPENN established the Research Services Office to help assure compliance with Federal requirements such as accounting for employee's time used to allocate salary and wages to Federal awards. The Research Services Office reports jointly to the Senior Vice President for Finance and Treasurer and the Vice Provost for Research, and provides UPENN's Departments with services to assist in administering sponsored projects. Each Department has a chairperson who serves as the executive officer of the Department and has general responsibility for promoting the scholarly and research activities of the faculty. The Department Chair also has the responsibility for securing and retaining faculty and staff members and recommending tenure and promotions for faculty and staff. Within most Departments, the business manager is responsible for the administrative aspects of sponsored projects and is the key individual in administrative matters for sponsored projects. The business manager is responsible to ensure that awards and their budgets are created accurately in the University's financial systems,

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<sup>1</sup> UPENN's fiscal year begins on July 1 and ends on June 30.

awards are monitored on a monthly basis, charges to the award are appropriate, and that the principal investigator confirms the accuracy of employee's time recorded on effort reports. Principal investigators have primary responsibility for all aspects of the sponsored projects, specifically the approval of all charges and the research conducted under terms and condition of the awards.

## **Objectives, Scope, and Methodology**

**Audit Objectives.** Our audit objectives were to: a) evaluate the adequacy of UPENN internal controls for ensuring salary and wages are allowable, and b) determine the amount of unallowable salary and wages charged to NSF awards in fiscal years 2002 through 2004.

**Scope and Methodology.** The audit focused on UPENN's payroll distribution and effort reporting system and accordingly reviewed internal controls for ensuring that labor costs charged to NSF:

- were actually incurred,
- benefited NSF awards,
- were accurately and timely recorded and charged to NSF, and
- were for allowable type activities as required by Federal and NSF requirements.

To address each of the these control objectives, we employed the use of statistical software tools not only to help select random salary records for testing but also to enable projecting our audit results to the UPENN population. From the universe of all UPENN labor costs charged to NSF awards in fiscal years 2002 through 2004, 46 salary and wage records greater than \$100 were selected through a random number generator and tested. Our statistical sample was valued at \$371,081 and was supported by 65 effort reports covering 45 employees.<sup>2</sup> Our statistical methodology is more fully explained in Appendix A.

We compared UPENN policy and procedures to Federal and NSF requirements for allocating labor costs to Federal awards and interviewed UPENN personnel to gain an understanding of the controls in place to ensure salary and wages charged to NSF awards are allowable. For each statistically selected salary record, we obtained the following documentation to determine whether labor costs UPENN charged NSF awards met the control objectives:

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<sup>2</sup> Depending on the type of employee, each salary record could have up to four effort reports supporting UPENN salary charges to sponsored projects during a fiscal year. One employee was selected twice on the same award but was selected for different fiscal years.

- Effort reports, which are used to document 100 percent of each employee's work activities for the effort reporting period,
- Appointment letters or other documents supporting the approved annual salary for faculty salaries and student stipends, or hourly rate for wages,
- Salary Management-Person Detail Report that listed the actual salary and wages charged to sponsored projects and other activities for each employee during a fiscal year,
- Various documents that business managers used as evidence to verify work was performed and correctly charged to Federal awards, and
- Award document to determine whether labor costs were allowable and whether the award had any terms and conditions that would affect labor charges to the award.

To ensure that salary and wage costs charged to NSF awards were actually incurred and benefited NSF awards, we corroborated the information on effort reports by interviewing applicable employees and students as available. We inquired of them whether the labor effort documented was actually incurred on projects and activities, the approximate percentage of effort worked on each project and activity, and the type of work they did on NSF projects (to ensure work was within the scope of the awards). We also interviewed UPENN business managers to determine their processes for verifying work performance prior to approving and signing effort reports. Additionally, we interviewed selected principal investigators to determine the number of projects and personnel they were responsible for and how they ascertain actual work performed on awards and other activities.

To determine whether labor costs were accurately recorded and charged to NSF, we compared the amounts in appointment letters or other documentation supporting salaries and wages paid to the amounts recorded in the Salary Management-Person Detail Reports for each individual in our selected sample. We recalculated salary and wage costs charged to NSF projects by using the salary shown on the appointment letter or other supporting documentation and apportioning it by the period of time represented on the effort report. We also reviewed labor transactions to determine whether UPENN followed Federal, NSF, and UPENN requirements on charging labor costs to NSF projects. We reviewed supporting documentation provided by business managers and interviewed them to determine the extent of their efforts in verifying work shown on effort reports.

We determined whether UPENN officials approved and signed effort reports in a timely manner by comparing the date effort reports were provided to Department business managers to the date effort reports were approved and signed. Timeliness was based on UPENN's internal policy requiring Department business managers or principal

investigators to approve and return effort reports within 45 working days of receipt of the forms from Research Services.

Finally, we reviewed the two most recent single audits performed under OMB Circular A-133, *Audits of States, Local Governments, and Non-Profit Organizations*. We reviewed these audit reports on UPENN for the fiscal years ended June 30, 2003 and June 30, 2004, to determine whether there were any audit findings and recommendations on effort reporting, and UPENN management's response and actions taken to resolve issues raised in those audit reports. In addition, we reviewed the A-133 audit for the fiscal year ended June 30, 2003, the most recent audit at the time of our site visit, and the applicable audit working papers to determine whether the scope of the A-133 audit constituted an "independent evaluation" of the UPENN payroll distribution and effort reporting system, as required by OMB Circular A-21, "*Cost Principles for Educational Institutions*." University officials stated that the A-133 audit met this requirement. We also interviewed the A-133 auditor to gain an understanding of the scope and procedures used in the audit for effort reporting.

We made site visits to UPENN in December 2004 and in May 2005. Our audit was conducted in accordance with the Comptroller General's *Government Auditing Standards*, June 2003, and accordingly included such tests of accounting records and other auditing procedures, as we considered necessary, to fully address the audit objectives.

## **SECTION II**

### **FINDINGS AND RECOMMENDATIONS**

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## Findings and Recommendations

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### Summary of Audit Results

OMB Circular A-21, “*Cost Principles for Educational Institutions*,” requires salary and wages be supported by effort reports signed and approved by the employee or an official who is in a position to know whether the work was performed. The Circular also requires effort reports represent 100 percent of an individual’s activity and provide an after-the-fact confirmation or determination that the effort report represents a reasonable estimate of the actual effort expended. To ensure the reliability of the approval process, UPENN policy requires its research Departments to return approved effort reports within 45 working days of receipt of the forms from the Research Services Office.

From our statistical sample, we determined that UPENN business managers approved and signed 23 effort reports, representing \$177,894 (48 percent) of \$371,081 in salary and wage costs charged to NSF, without after-the-fact confirmation or determination that time reflected on the effort reports represented reasonable estimates of the actual effort expended. UPENN principal investigators and business managers also did not approve 24 effort reports within the 45-day turnaround period specified by UPENN policy, representing \$109,163 (29 percent) in labor costs charged to NSF. (See Appendix B for specific sample numbers and associated award numbers and salary amounts).

As a result, without timely or suitable means to verify effort reports, UPENN was unable to ensure that a substantial amount of salary and wage costs charged to NSF awards reasonably reflected actual effort worked on NSF projects. Specifically, based on our statistical sampling results, we are 95 percent confident UPENN could not demonstrate that at least \$9.2 million, or 37 percent of the \$24.9 million of labor costs charged to NSF in fiscal years 2002 through 2004, actually benefited NSF awards as opposed to other Federal or university activities. Further, the systemic nature of this control weakness raises concerns about the reasonableness and allowability of the labor effort charges on UPENN’s other \$525 million of Federal awards.

This systematic control weakness occurred because UPENN did not have specific procedures to help business managers understand the types of documents that were necessary to support the effort reports. Also, Department Chairs were not held accountable for ensuring effort reports were completed within the 45-day turnaround period. UPENN also did not conduct an independent evaluation of its payroll distribution system. OMB Circular A-21 requires such an evaluation, which should have disclosed the deficiencies in the business managers’ methods for verifying and approving the reasonableness of actual labor costs charged to NSF awards.

A draft audit report was issued to UPENN with recommendations addressing the above findings. We requested UPENN to comment on the findings and

recommendations in the draft report. In general, the University agreed with the findings and believed it has already taken corrective action to resolve the recommendations or their new procedures inherently meet the intent of the recommendations. After reviewing UPENN's response, we have reaffirmed each of our recommendations. NSF should work with the cognizant audit agency and/or UPENN to ensure UPENN develops an acceptable corrective action plan to resolve each audit recommendation. We have summarized UPENN's comments and provided our response after each recommendation in the report. We also included UPENN's response to our draft report in its entirety as Appendix F.

## Improvements Needed in the Practices of Charging Labor to Federal Awards

**OMB Requirements.** Federal grant requirements provide that labor costs charged to NSF awards must reasonably reflect the actual labor effort contributed by the employee to meet the objectives of the award. While a university can initially charge NSF awards based on estimates of labor effort that are expected to be contributed, university officials are required to subsequently confirm that the labor effort costs charged to an award reasonably represent the actual labor effort. As such, the university officials providing this after-the-fact confirmation must have a “suitable means of verification” that the estimated labor effort reflected on the effort report reasonably reflects the actual amount of time the employee worked on the NSF award.

In addition, although Federal and NSF requirements do not specify when an effort report should be completed, university officials should provide the after-the-fact confirmation as close to the end of the effort reporting period as possible to ensure its reliability and avoid concerns with memory recall. Officials often rely on their memory when signing and approving effort reports since they are not required to track and maintain records of an employee’s work activities.

To ensure timely review and approval, UPENN has established a 45-working day turnaround requirement. The Research Services Office prepares and sends effort reports to business managers within the Departments reflecting the predetermined estimates of the time the principal investigator and staff spent on each Federal award during that period.<sup>3</sup> The principal investigators and business managers together have a total of 45 working days to review and approve these effort reports before sending them to the Research Services Office who reviews them for completeness and also tracks receipt of all of the effort reports. If the actual time spent on research is significantly less than the predetermined estimates of the time, the business managers are responsible for the accounting entry to correctly charge the awards.

UPENN chose 45 working days because it provided a reasonable amount of time for principal investigators and business managers to be able to complete and return effort reports to the Research Services Office. But such a limitation on the turnaround also helps UPENN ensure a more reliable review and certification process. Even to comply with the 45-day turnaround, UPENN officials must remember as far back as six and in some cases nine months,<sup>4</sup> to confirm all activities an employee worked on during the period covered by the effort report. Furthermore, principal investigators are not required to keep records of the amount and types of activity worked on and are generally relying

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<sup>3</sup> Effort reports are prepared tri-annually (for the fall, spring and summer semesters) or quarterly (for hourly paid employees) depending on a student’s or employee’s appointment and how his/her salary is charged to Federal awards.

<sup>4</sup> The amount of time certifying official would have to recall activities for some employees could be nine months. Effort report period can cover up to six months of time. Additionally, to prepare and distribute effort reports to the departments take on average one-month, and UPENN officials have close to two-months time to certify and return the effort reports.

on their memory when approving effort reports for themselves and the individuals that work for them. Principal investigators may also have multiple awards and staff that they are responsible for during the effort-reporting period, which increases the risk that principal investigators' memory of the amount and type of activities performed will be less reliable as time increases past the 45-day period. For example, one principal investigator informed us that he had 5 awards involving 15 employees and students working for him. Thus, limiting the review and approval of effort reports to the shortest amount of time possible ensures amore reliable labor charges to Federal awards.

**Business Managers Had Insufficient Suitable Means of Verification.** Our review found that UPENN business managers did not always comply with these control requirements for effort reporting. For 23 of the 65 effort reports tested, representing \$177,894 (48 percent) of salary and wages charged to NSF, UPENN business managers approved effort reports without suitable means of verification that the work was actually performed as shown on effort reports. They either approved without obtaining affirmative confirmation from the principal investigator of the reasonableness of the effort report labor estimates (11 instances), relied on incomplete information (6 instances), or could not provide any documentation evidencing how they verified the time estimates reflected on the effort report (6 instances). (See Appendix C for specific sample numbers and associated award numbers and salary amounts.)

#### *Improper Reliance on Monthly Financial Reports*

Business managers approved 11 effort reports, representing \$131,761 of labor costs charged to NSF, without obtaining affirmative after-the-fact confirmations from principal investigators that the labor costs listed on the monthly financial reports represented a reasonable estimate of actual effort spent by an individual working on a research project. Monthly financial reports are distributed to principal investigators and include a list of all individuals and their associated labor costs for a single research project. Business managers assumed the principal investigators would notify them if labor costs on the monthly financial reports were not correct. However, in not requiring an affirmative response, business managers did not know whether these principal investigators reviewed the monthly financial reports and agreed with the labor costs charged to the research project. Also, monthly financial reports do not account for 100 percent of an employee's labor effort and therefore do not enable the approving officials to determine whether the labor costs were properly allocated among the employee's various activities. The monthly financial report does not provide for this breakout of labor effort.

#### *Incomplete Information*

In another six instances, the business managers approved labor effort reports, representing \$27,083 in labor costs charged to NSF awards, based on weekly timesheets that reported only total hours worked rather than a breakdown of specific projects or activities that the employees worked on during the week. Lacking identification of the projects and activities the employees worked on, the business managers who approved

the effort reports were not in a position to evaluate the accuracy of the labor effort allocations to the various Federal awards, including NSF awards.

*Lack of Any Documentation to Support Labor Effort Allocations.*

Business managers approved and signed six effort reports, representing \$19,050 in labor costs charged to NSF awards, without any documentation to support actual labor costs incurred on the projects. For four, the business managers did not provide any documentation to support that they conducted an after-the-fact confirmation or determination that work was performed as shown on the effort reports. For the other two, the business manager was able to provide only the technical research report from UPENN officials to support the salary and wage amounts charged to the NSF awards.

UPENN participates in NSF programs *Research Experience for Teachers* and *Research Experience for Undergraduates*. Both programs require participants to provide a report on the technical accomplishments at the end of the project, which a business manager used to support and verify the amount of effort the individuals worked while in the program. While the technical reports are important for monitoring programmatic performance of an award, they are of limited use in determining the amount of actual time an employee worked on the award. For example, it is possible for a participant to miss time in the research laboratory and still be able to write a technical report of the research accomplishments.

**Timeliness of Effort Reports.** Our review also found that UPENN did not always timely approve effort reports and/or maintain documentation to verify when the reports were approved. UPENN's independent auditors also noted this timeliness problem in their fiscal years 2003 and 2004 audit reports.

In 24 of the 65 effort reports we tested, representing \$109,163 (29 percent) of labor costs charged to NSF awards, principal investigators and business managers did not approve the effort report within the 45-day turnaround period specified by UPENN policy, and in two instances took four to six months to approve the report. For another five effort reports, representing \$3,102 (1 percent) of labor costs charged to the NSF awards, we could not determine whether the reports were completed on time because they were not dated. (See Appendix D for the number of days late for each sample number and associated award number and salary amount).

The chart below summarizes how much time beyond the UPENN turnaround time of 45 days that officials took to approve the 24 late effort reports.

**Lateness of Effort Reports**

Days Late	Number of Effort Reports	Salary Costs
1 – 30	14	\$79,617
31 – 60	7	20,302
61 – 120	1	1,971
121 – 180	2	7,273
<b>Total</b>	<b>24</b>	<b>109,163</b>
No Date	5	3,102
<b>Total</b>	<b>29</b>	<b>\$112,265</b>

UPENN’s two most recent A-133 audit reports for fiscal years 2003 and 2004 also cited the same timeliness issue regarding the university’s effort reports. In particular, these reports noted that timely review and approval of effort reports are important control procedures that help ensure labor costs are appropriately charged to Federally sponsored projects. However, both A-133 audits found that 8 percent of the effort reports tested for timeliness was not completed within the 45-day turnaround period specified by UPENN policy.

UPENN officials responded that they have communicated constantly with Departments reminding them to return their effort reports, provided extensive training to business managers and faculty, and provided Departments with status reports listing late effort reports. UPENN officials from the Research Services Office stated that an employee from their office is assigned the responsibility to monitor the return of effort reports from the Departments to help ensure they are returned in a timely manner. Because the problem persists, UPENN is currently implementing an electronic based effort reporting system that will establish clear tracking of effort reports and require business managers and principal investigators to review and approve effort reports within 45 days. However, even with an electronic based effort reporting system, principal investigators may still not complete or confirm the information on effort reports in a timely manner until Department Chairs hold them accountable. Business managers and officials from the Research Services Office do not have the authority that Department Chairs have to direct principal investigators to complete or confirm the information on effort reports in a timely manner.

**Potential Excess Labor Charges.** Without timely or suitable means to verify effort reports, UPENN was unable to ensure that large amounts of salary and wage costs charged to NSF awards reasonably reflected actual hours worked on NSF projects. Specifically, based on our statistical analysis,<sup>5</sup> we are 95 percent confident UPENN could

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<sup>5</sup> For our statistical analysis, we classified labor costs as unverifiable if there was no suitable means of verification that the work was actually performed, the effort report was completed after a 45-day turnaround period, or there was no date on the effort reports. A total of \$224,663 of the \$371,081 of audited labor costs or 60.5 percent of the labor costs was unverifiable. (See Appendix A for a complete description of our statistical methodology.)

not demonstrate that at least \$9.2 million or 37 percent of the \$24.9 million of labor costs charged to NSF in fiscal years 2002 through 2004, benefited NSF awards as opposed to other Federal or university activities. Further, the systematic nature of this control weakness raises concerns about the reasonableness and allowability of the labor effort charges on UPENN's other \$525 million of Federal awards.

**Factors Contributing to Effort Reporting Weaknesses.** We identified two major factors that contributed to UPENN's effort reporting control weaknesses:

*Specific Procedures and Accountability Needed.* While UPENN had policies requiring business managers to obtain after-the-fact confirmations from principal investigators that work was performed, it did not have specific procedures explaining the types of documentation that was acceptable as support for information reflected on the effort reports. For example, an e-mail from principal investigators to the business managers confirming the accuracy of information on the effort reports or timesheets regarding the specific projects or activities that the employee(s) worked on during the reporting period.

Also, UPENN did not hold Department Chairs accountable for effort reports that were not returned within the 45-day turnaround period. Department Chairs would have more leverage than business managers in ensuring principal investigators complete or confirm the information on effort reports in a timely manner. The Department Chair has the responsibility for securing and retaining staff and faculty members and recommends tenure and promotions for faculty and staff. Business managers provide support and assist the principal investigator on administrative matters but have no direct authority over principal investigators. Whereas, Department Chairs, having a direct line of authority over principal investigators, thus have more influence on getting principal investigators to respond positively to the requirement to timely complete effort reports. Furthermore, Department Chairs and principal investigators would likely be more accountable for effort reports if this responsibility were included as a rating factor on their annual job evaluation.

*Independent Internal Evaluations Not Performed.* UPENN did not conduct independent evaluations of its payroll distribution system. Such evaluations, required by Federal grant requirements, would have likely disclosed the deficiencies in the business managers' methods for verifying and approving the reasonableness of actual labor costs charged to NSF awards. While UPENN officials were aware of this evaluation requirement, they believed that its A-133 auditor included this evaluation as part of its annual audit. However, the A-133 auditor focused its work on reviewing the timeliness of the certifications of the effort reports along with assessing the accuracy of the labor cost calculations and the allowable nature of the salary charges rather than on whether business managers had a suitable means for knowing whether the work was performed in the amounts reported.

UPENN's new electronic effort reporting system should reduce the complicated logistical and coordination activities necessary when distributing over 7,500 paper effort reports every six months and help UPENN provide more timely effort reports. Also, by providing for electronic approval of effort reports, UPENN should be able to obtain appropriately completed effort reports from principal investigators and business managers, particularly if Department Chairs are held accountable for completing of the effort reports in a timely manner.

**Other Matters.** We questioned \$27,121 of salary and wages along with associated fringe benefits and indirect costs charged to NSF during fiscal years 2002 through 2004 because UPENN overcharged NSF awards (See Appendix E for additional details on the questioned costs and the associated NSF award). Because most of the questioned costs were associated with one effort report and the total questioned costs were only 3.7 percent of the labor costs included in our sample,<sup>6</sup> we were unable to statistically project, with an acceptable degree of accuracy, the amount of questioned costs charged to all NSF awards in the three-year audit period. The questioned costs involved three individuals on separate NSF awards as follows:

- Although a business manager correctly revised an effort report to note that the amount of effort on a NSF award was reduced from the estimated amount of 100 percent to the actual amount of 50 percent, the business manager did not make the correction resulting in a \$23,652 overcharge. Based on the revised effort report, UPENN should have transferred the labor costs, associated fringe benefits, and indirect costs to a non-NSF project.<sup>7</sup>
- On another NSF award, a student informed us that 20 percent of her effort was spent as a training assistant, however UPENN charged 100 percent of her effort to the NSF award. As result of her incorrect effort report, UPENN overcharged \$3,328 on the NSF award.
- On a third NSF award, UPENN inadvertently charged NSF twice for \$141 of labor costs along with associated fringe benefits and indirect costs.

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<sup>6</sup> The 3.7 percent is based on \$13,731 of questioned labor costs, whereas, the remaining questioned amount of \$13,390 was for fringe benefits and indirect costs.

<sup>7</sup> Based on our discussions regarding the questioned labor costs, UPENN revised its policy on effort reporting in January 2005, adding a requirement that the Research Services Office review all modified effort reports and ensure the corresponding cost transfers are recorded in the project ledgers. This new policy will help ensure that correct salary amounts are charged to NSF awards.

## **Recommendations**

We recommend that the NSF Director of the Division of Grants and Agreements and the Director of the Division of Institution and Award Support, coordinate with the cognizant audit agency, as needed, to implement the following recommendations:

1. Work with the University of Pennsylvania to establish an internal control structure that ensures the existence of an effective review and approval process for charging labor costs to NSF awards. At a minimum, the University of Pennsylvania should develop and implement policies and procedures to:
  - a. conduct an independent internal evaluation of the University's payroll distribution system for compliance with Federal, NSF, and UPENN requirements.

## **UPENN Comments**

UPENN believes that it met the requirement to conduct an independent internal evaluation of its payroll distribution system through both its' annual A-133 audits and internal audits of individual sponsored projects. Furthermore, UPENN provided for an independent internal evaluation by examining its practices and policies in conjunction with implementing its new electronic Effort Reporting System, which resulted in the new and revised policies related to effort reporting.

## **OIG Response**

We respectfully disagree with UPENN's assessment that its annual A-133 audits and internal audits of individual sponsored projects meet the Federal grant requirement because both types of audits did not provide for a systemic review of the payroll distribution system. While UPENN's A-133 audit focused on the timeliness of effort report certifications along with assessing the accuracy of the labor cost calculations, the A-133 audit did not include a systemic review of the effort reporting system. Specifically, the audit did not address the Federal requirement that business managers have a suitable means for knowing whether the work was performed before they certify to the amounts reported. Furthermore, the past two A-133 audits found problems with timeliness of certifications but the auditors never identified the reason(s) why UPENN's effort certifications were late. We would expect a systemic review to identify the reason(s) for the deficiency and make recommendations to correct the timeliness problem from occurring again. Similarly, UPENN's internal audits were not systemic reviews because the reviews focused on individual projects and did not identify the reason(s) for the problems. Thus, the internal reviews did not develop recommendations to correct systemic deficiencies for effort reporting. For example, a UPENN internal audit of an individual sponsored project determined there were four missing effort reports. The internal auditors did not make a recommendation in the report, however, the report stated that the missing effort reports were provided. However, it was not within the scope of the

audit to determine whether missing effort reports was a systemic issue caused by weak internal controls over effort reporting.

While we commend the Research Services Office for conducting an evaluation that lead to the development of the new electronic Effort Reporting System along with revised policies, their evaluation can not be considered "independent" as the Research Services Office is responsible for establishing and implementing the policies and procedures for the system. An independent evaluation is particularly warranted to determine whether the new and revised policies and procedures developed by the Research Services Office are working as intended. Therefore, we reaffirm our recommendation.

- b. ensure business managers obtain from principal investigators written after-the-fact verification the work represented on effort reports was actually performed prior to approving and signing the reports.

### **UPENN Comments**

UPENN did not specifically address this recommendation.

### **OIG Response**

NSF should request UPENN provide a corrective action to address this recommendation.

- c. revise the effort reporting policy and procedures to state business managers must obtain written after-the-fact verification from principal investigators before approving and signing effort reports.

### **UPENN Comments**

UPENN stated that its Sponsored Projects Policy No. 2134, effective October 2004, requires written after-the-fact verification of effort reports.

### **OIG Response**

Although UPENN's Sponsored Projects Policy No. 2134 requires and describes documentation needed to support approval of financial transactions including any salary allocations, this policy did not clearly state whether it applies to effort reporting. UPENN also issued Sponsored Projects Policy No. 2114 on effort reporting that is unclear on what documentation a business manager must obtain when signing effort reports and does not refer to Policy No. 2134. Therefore, UPENN's effort reporting policies should be clear that business managers when signing effort reports are required to follow Policy No. 2134. Furthermore, we interviewed selected business managers after the effective date of the Sponsored Projects Policy No. 2134 and they were not aware that this policy applied to effort reporting. Without clear guidance, business managers may continue to

sign effort reports without obtaining the required documentation from principal investigators.

- d. require that hourly employees' weekly timesheets itemize all specific projects or activities worked on during the covered time period and that the workload breakdowns support the effort allocations to each Federal award.

#### **UPENN Comments**

UPENN stated that as of October 2005, they implemented a new standard timesheet that associates hours worked to specific projects.

#### **OIG Response**

UPENN's new timesheet should meet the intent of the recommendation.

- e. implement the University's electronic-based effort reporting review and certification system as quickly as possible.

#### **UPENN Comments**

UPENN stated that it has implemented its electronic Effort Reporting System and created and revised related policies.

#### **OIG Response**

UPENN actions should meet the intent of the recommendation.

- f. hold Department Chairs accountable for the completion of effort reports within the 45-day turnaround period as required by University of Pennsylvania policy.

#### **UPENN Comments**

UPENN officials stated its new electronic Effort Reporting System provides for monitoring, timeliness, and accountability for effort reports at the departmental and school levels and they will decide at a later time on whether to hold Department Chairs accountable for the timely completion of effort reports.

#### **OIG Response**

UPENN did not explain how the new procedures for the electronic system would ensure effort reports are monitored, completed in a timely manner, and establish accountability at the department level. UPENN also did not state who is being held accountable for the timely completion of effort reports and the date they will determine whether to hold Department Chairs accountable for the timely completion of effort reports. Without UPENN providing more details on how the new procedures address

timeliness and accountability, we can't determine whether its new electronic system will resolve the timeliness issue.

2. Recover the questioned salary and wage costs along with the associated fringe benefits and indirect costs, totaling \$27,121.

### **UPENN Comments**

UPENN officials disagreed with \$3,328 of questioned costs related to a graduate student providing teaching assistance because this activity is an uncompensated obligation of students in the PhD program in the School of Engineering and Applied Science. The student in question spent 100 percent of her compensated effort working on the NSF award.

### **OIG Response**

The student's graduate program acceptance letter did not include an obligation to provide uncompensated teaching assistance. Furthermore, UPENN did not provide evidence of a policy requiring all students in the PhD program in the School of Engineering and Applied Science to provide uncompensated teaching assistance. Therefore, we continue to believe the student's teaching assistance was a compensated activity paid with NSF grant funds and should be returned to NSF unless UPENN can provide the School of Engineering and Applied Science policy in effect for the Spring 2004 semester that requires all students in the PhD program to provide teaching assistance without pay as part of the program.

### **Other UPENN Comments**

During fiscal years 2002 through 2004, business managers could use either written or oral means of verification because during those years neither Federal grant requirements nor UPENN policy defined what constitutes a suitable means of verification. Therefore, the OIG in assessing the extent of the unverified labor amount, should not judge historical effort reports in context of the UPENN's new policy requiring written verification.

### **OIG Response**

Federal grant requirements state that universities must provide adequate documentation to support costs charged to sponsored agreements. Based on this requirement, business managers have always been required to document what they used as a suitable means of verification to validate effort reports because this action is required to support labor costs charged to sponsored agreements.

### **Other UPENN Comments**

UPENN policy requiring faculty members to sign their own effort reports did not become effective until November 2003. Therefore, business managers correctly signed three effort reports for \$60,178 because these effort reports were signed prior to the effective date of the policy requiring faculty members to sign their own effort reports. Thus, the report has unfairly overstated the amount of unverified labor costs.

### **OIG Response**

The three effort reports in question remain as part of the unverified labor costs in the final report because business managers did not correctly sign the reports. Specifically, business managers approved and signed these three effort reports without using a suitable means of verification the work represented on the reports was actually performed. Regarding UPENN policy requiring faculty members to sign their own effort reports, the draft report had incorrectly identified that the three faculty members did not follow this policy. The effective date of UPENN's policy was after the date that business managers signed the faculty members' effort reports. Therefore, we deleted any reference to this issue in the final report. Furthermore, we commend UPENN officials for strengthening UPENN policy beyond Federal grant requirements by requiring principal investigators to sign their own effort reports.

### **Other UPENN Comments**

Although UPENN recognized the importance of completing effort reports in a timely manner, OMB has not established a specific timeliness standard and UPENN disagreed that its failure to meet its own timeliness policies should be used in assessing the extent of the unverified labor amount. UPENN officials also stated that faculty, staff and students have supplementary documentation such as reports, lab notebooks, and records of lab meetings to help the certifying official remember the amount of time when certifying effort reports.

### **OIG Response**

We quantified labor costs supported by untimely certification of effort reports to show the significance of the timeliness issue. Our audit noted that the timely review and approval of effort reports are important control procedures that help ensure labor costs are appropriately charged to Federally sponsored projects and recognized that OMB had not established a specific timeliness standard. Furthermore, certifying officials generally do not use reports, lab notebooks, and records of lab meetings when validating effort reports. Certifying officials, as stated in the report, generally rely on their memory when validating effort reports. In addition, the supplementary documentation would still not provide the amount of time spent working on each project or whether all work activities are included in the supplemental documentation. Finally, we evaluated UPENN's policy requiring effort reports be signed and returned within 45 working days and concluded this

was an adequate period of time to review and approve effort reports, especially with the advent of e-mail.

**Other UPENN Comments**

The business manager is not required to increase the cost of labor charged to federal awards when the actual time spent on research is significantly more than the predetermined estimates of the time. The actual time spent above the predetermined estimates of time is voluntary uncommitted effort; and, OMB provided guidance that universities do not have to account for the excess labor costs.

**OIG Response**

UPENN is correct in their statement that business managers are not required to make accounting adjustments to increase the labor costs on a grant when actual time exceeds predetermined estimates of time. We modified the sentence in the final report to address UPENN's comment. However, the effort report should correctly represent the amount of time that the staff member worked on projects or other activities.

**SECTION III**

**APPENDIXES**

**Statistical Methodology**

We used a package of statistical software tools designed by the Office of the Inspector General, Department of Health and Human Services, to assist auditors in selecting random samples and evaluating the audit results. The Office of the Inspector General, Health and Human Services has used this package of statistical software tools since the early 1970s.

The statistical software tools included a single stage random number module to generate random numbers, and a variable-unrestricted module to estimate audit results. The random number software in this module was tested with thirteen certification programs from the National Bureau of Standards to test for various aspects of randomness. The software passed all thirteen of the tests. In addition, the appraisal program was independently reviewed and certified.

The audit population is UPENN salary and wage costs charged to NSF awards in fiscal years 2002 through 2004 less salary and wages of educational fellows and any employee or student with salary and wages charged to an award of \$100 or less in a fiscal year. The sampling frame is the collection of UPENN salary records representing an employee or student salary and wage costs charged to a specific NSF award greater than \$100 in a fiscal year. The sampling unit is each individual salary record included in the sampling frame.

We obtained UPENN's complete salary records relating to NSF awards for fiscal years 2002 through 2004 and we deleted any salary record with salary expenditures of \$100 or less in a fiscal year and we numbered the remaining population of 3,322 salary records that totaled \$25,979,581. We used the statistical software tools single stage random number module to generate 50 single stage random numbers with salary records that totaled \$404,781.

During the audit, we learned that our sample included salary records of educational fellows. Educational fellows are not required to conduct research so we eliminated these individuals from our sample and population. As a result, the population was revised to 3,161 salary records that totaled \$24,901,568 and the sample was revised to 46 salary records that totaled \$371,081. Each salary record could have one to four effort reports associated with them depending on type of employee or student and amount of time employee worked in a fiscal year. We determined that the 46 salary records had 65 effort reports associated with them. We also used the variable, unrestricted appraisal module of the statistical software tool at the 90 percent confidence level to estimate salary and wage costs that UPENN charged NSF during fiscal years 2002 through 2004 supported by effort reports that were signed by business managers who did not use suitable means of verification that the work was performed or signed effort reports too

late after the effort reporting period to be considered reliable or did not date effort reports. The appraisal module estimated that labor costs supported by effort reports signed by a person not in a position to know whether the work was actually performed or effort reports signed after the 45 day turnaround period or not dated is between \$9.2 million and \$21.7 million with a midpoint estimate of \$15.4 million. Using the same information, we could state that we are 95 percent confident that at least \$9.2 million of labor costs UPENN charged NSF in fiscal years 2002 through 2004 were supported with effort reports signed by a person not in a position to know whether the work was actually performed or effort reports were signed after the 45 day turnaround period or not dated.

## Appendix B

### Schedule of Salaries & Wages Charged to NSF Awards Without Timely Completion of Effort Reports or Suitable Means of Verification For the Period July 1, 2001 through June 30, 2004

Sample Number	Award Number	Effort Report Period	No Suitable Means of Verification Work Actually Performed	Timeliness- Completed after 45 day Turnaround Period	No Verification Work Performed & Timeliness	No Date On T&E Reports
1	CHE-9900436	Fall 2003	\$1,667	\$0	\$0	\$0
2	HRD-9976527	Oct – Dec 2003	0	300	0	0
6a	DMR-0079909	Fall 2003	0	0	818	0
6b	DMR-0079909	Spring 2004	0	766	0	0
7	DMR-0079909	Spring 2004	0	8,400	0	0
8a	DMR-0079909	Fall 2003	14,991	0	0	0
8b	DMR-0079909	Spring 2004	0	9,993	0	0
9	DMR-0079909	Jul – Sep 2003	0	0	2,400	0
10	DMR-0079909	Apr – Jun 2004	750	0	0	0
12a	IBN-0130804	Jul – Sep 2003	0	1,189	0	0
12b	IBN-0130804	Oct – Dec 2003	0	0	0	672
12c	IBN-0130804	Jan – Mar 2004	0	842	0	0
14a	EIA-0205448	Oct – Dec 2003	0	637	0	0
14c	EIA-0205448	Apr – Jun 2004	0	143	0	0
15	EIA-0205448	Jul – Sep 2003	3,732	0	0	0
18a	IIS-0325739	Oct – Dec 2003	0	0	12,712	0
18b	IIS-0325739	Jan – Mar 2004	6,650	0	0	0
19	BCS-8920230	Fall 2001	0	0	2,583	0
20a	BCS-8920230	Fall 2001	0	0	5,555	0
20b	BCS-8920230	Spring 2002	0	0	6,944	0
24	SES-9818662	Fall 2001	1,000	0	0	0
25	DMS-9971756	Spring 2002	0	0	6,750	0
29a	IIS-9910603	Oct – Dec 2001	0	0	0	666
29b	IIS-9910603	Apr – Jun 2002	0	0	0	343
30a	DMR-0079909	Fall 2001	0	1,667	0	0
31	DEB-0105021	Jul – Sep 2001	0	0	0	1,101
33	SES-99733739	Summer 2002	25,778	0	0	0
34	IIS-9900297	Fall 2002	0	0	3,500	0
35	MCB-9816411	Jul – Sep 2002	0	0	1,718	0
36	DMR-9974366	Jul – Sep 2002	0	0	1,971	0
37a	CCR-9820885	Fall 2002	0	0	13,575	0
37b	CCR-9820885	Spring 2003	0	11,700	0	0
38	IIS-0083240	Summer 2002	8,900	0	0	0
39	IIS-9982201	Jul – Sep 2002	0	0	0	320
40	SES-0095768	Summer 2002	25,500	0	0	0
42a	REC-0115676	Fall 2002	23,100	0	0	0
43	REC-0115676	Jul – Sep 2002	300	0	0	0
47	EIA-0205456	Spring 2003	0	6,250	0	0
48a	EIA-0205448	Fall 2002	0	0	7,000	0
48b	EIA-0205448	Spring 2003	0	1,750	0	0
		Total	\$112,368	\$43,637	\$65,526	\$3,102
			A	B	C	D
					Grand Total	\$224,633

Notes:

1. Columns A & C totals \$177,894 and represents the labor costs supported by Effort Reports with No Suitable Means of Verification work was actually performed.
2. Columns B & C totals \$109,163 and represents the labor costs supported by Effort Reports that were not approved within 45 day turnaround period.

## Appendix C

### Schedule of Salaries and Wages Charged to NSF Awards Without Suitable Means of Verifying Work Was Actually Performed For the Period July 1, 2001 through June 30, 2004

Sample Number	Award Number	Effort Report Period	Responsible Official's Title	Salary Costs	Totals
<i>Monthly Financial Reports<sup>8</sup>:</i>					
1	CHE-9900436	Fall 2003	Business Administrator	\$ 1,667	
8a	DMR-0079909	Fall 2003	Business Administrator	14,991	
24	SES-9818662	Fall 2001	Business Administrator	1,000	
25	DMS-9971756	Spring 2002	Business Administrator	6,750	
33	SES-9733739	Summer 2002	Business Administrator	25,778	
34	IIS-9900297	Fall 2002	Business Administrator	3,500	
37a	CCR-9820885	Fall 2002	Business Administrator	13,575	
38	IIS-0083240	Summer 2002	Business Administrator	8,900	
40	SES-0095768	Summer 2002	Business Manager	25,500	
42a	REC-0115676	Fall 2002	Business Administrator	23,100	
48a	EIA-0205448	Fall 2002	Business Administrator	7,000	\$131,761
<i>Weekly Timesheets<sup>9</sup>:</i>					
15	EIA-0205448	Jul – Sep 2003	Manager, Admin. & Finance	\$ 3,732	
18a	IIS-0325739	Oct – Dec 2003	Manager, Admin. & Finance	12,712	
18b	IIS-0325739	Jan – Mar 2004	Manager, Admin. & Finance	6,650	
35	MCB-9816411	Jul – Sep 2002	Business Administrator	1,718	
36	DMR-9974366	Jul – Sep 2002	Business Administrator	1,971	
43	REC-0115676	Jul – Sep 2002	Manager, Admin. & Finance	300	27,083
<i>Final Technical Reports<sup>10</sup>:</i>					
9	DMR-0079909	Jul – Sep 2003	Business Manager	\$2,400	
10	DMR-0079909	Apr – Jun 2004	Business Manager	750	3,150
<i>Other Methods:</i>					
6a	DMR-0079909	Fall 2003	Manager, Admin. & Finance	\$ 818	
19	BCS-8920230	Fall 2001	Business Administrator	2,583	
20a	BCS-8920230	Fall 2001	Manager, Admin. & Finance	5,555	
20b	BCS-8920230	Spring 2002	Manager, Admin. & Finance	6,944	15,900
					\$177,894

<sup>8</sup> Monthly financial reports were issued to principal investigators but business managers received no responses back from principal investigators confirming the reports.

<sup>9</sup> Hours on the weekly timesheets were not related to specific projects (awards).

<sup>10</sup> Business manager did not receive after-the-fact confirmations from the principal investigator.

**Appendix D**

Schedule of Salaries and Wages Not Approved  
 Within The 45-day Turnaround Period  
 For the Period July 1, 2001 through June 30, 2004

Sample Number	Award Number	Effort Report Period	Number of Days Late / Salary & Wage Costs				
			1 - 30	31 - 60	61 - 120	121 - 180	No Date
2	HRD-9976527	Oct - Dec 2003	\$ 300	\$ 0	\$ 0	\$ 0	\$ 0
6a	DMR-0079909	Fall 2003	0	818	0	0	0
6b	DMR-0079909	Spring 2004	0	766	0	0	0
7	DMR-0079909	Spring 2004	0	8,400	0	0	0
8b	DMR-0079909	Spring 2004	9,993	0	0	0	0
9	DMR-0079909	Jul - Sep 2003	2,400	0	0	0	0
12a	IBN-0130804	Jul - Sep 2003	1,189	0	0	0	0
12b	IBN-0130804	Oct - Dec 2003	0	0	0	0	672
12c	IBN-0130804	Jan - Mar 2004	0	842	0	0	0
14a	EIA-0205448	Oct - Dec 2003	637	0	0	0	0
14c	EIA-0205448	Apr - Jun 2004	0	143	0	0	0
18a	IIS-0325739	Oct - Dec 2003	12,712	0	0	0	0
19	BCS-8920230	Fall 2001	0	2,583	0	0	0
20a	BCS-8920230	Fall 2001	0	0	0	5,555	0
20b	BCS-8920230	Spring 2002	6,944	0	0	0	0
25	DMS-9971756	Spring 2002	0	6,750	0	0	0
29a	IIS-9910603	Oct - Dec 2001	0	0	0	0	666
29b	IIS-9910603	Apr - Jun 2002	0	0	0	0	343
30a	DMR-0079909	Fall 2001	1,667	0	0	0	0
31	DEB-0105021	Jul - Sep 2001	0	0	0	0	1,101
34	IIS-9900297	Fall 2002	3,500	0	0	0	0
35	MCB-9816411	Jul - Sep 2002	0	0	0	1,718	0
36	DMR-9974366	Jul - Sep 2002	0	0	1,971	0	0
37a	CCR-9820885	Fall 2002	13,575	0	0	0	0
37b	CCR-9820885	Spring 2003	11,700	0	0	0	0
39	IIS-9982201	Jul - Sep 2002	0	0	0	0	320
47	EIA-0205456	Spring 2003	6,250	0	0	0	0
48a	EIA-0205448	Fall 2002	7,000	0	0	0	0
48b	EIA-0205448	Spring 2003	1,750	0	0	0	0
			<u>\$79,617</u>	<u>\$20,302</u>	<u>\$1,971</u>	<u>\$7,273</u>	<u>\$3,102</u>

Schedule of Questioned Salaries and Wages  
For the Period July 1, 2001 through June 30, 2004

Sample Number	Award Number	Effort Report Period	Questioned Costs				Note
			Salary Costs	Fringe Benefits	Indirect Costs	Total	
42	REC-0115676	Spring 2003	\$11,550	\$3,372	\$8,730	\$23,652	1
7	DMR-0079909	Spring 2004	2,100	0	1,228	3,328	2
29	IIS-9910603	Oct – Dec 2001	81	8	52	141	3
		Total	<u>\$13,731</u>	<u>\$3,380</u>	<u>\$10,010</u>	<u>\$27,121</u>	

**Notes to Explain Questioned Costs.**

- Award Number REC-0115676.** We questioned \$23,652 because a cost transfer was not recorded in the general journal ledger to credit the NSF award when an effort report was changed from 100 percent effort to 50 percent effort. The Spring 2003 effort report for a research professional initially showed 100 percent effort for award REC-0115676. The research professional's salary during this six-month period from January through June 2003 was \$23,100 and it was charged entirely to the NSF award. On October 22, 2003, the business administrator, e-mailed the research professional to determine the percent of effort spent on the award that semester period prior to signing her effort report. The research professional responded via e-mail that 50 percent of her effort was spent on the NSF award and 50 percent was spent on a non-NSF award. While the business administrator modified the research professional's effort report accordingly, the cost transfer was not recorded in the general journal ledger to credit the NSF award \$11,550 in salary and wage costs and \$12,102 in applicable fringe benefits and indirect costs. The business administrator stated that this omission was an oversight on her part.
- Award Number DMR-0079909.** We questioned \$3,328 because a research fellow who charged 100 percent of her effort to the award actually spent 20 percent of her effort as a training assistant that was not award related.<sup>11</sup> The spring 2004 effort report for this research fellow showed 100 percent of her effort was on award DMR-0079909. The research fellow's salary during this six-month period from January through June 2004 was \$10,500 and it was charged entirely to the NSF award. While interviewing the research fellow, she informed us that approximately 20 percent of her effort was spent as a training assistant and about 80 percent of her effort was spent on the research award.
- Award Number IIS-9910603.** We questioned \$141 because an undergraduate student was paid twice for the same timesheet. A timesheet with the week ending on November 3, 2001 was paid on November 16, 2001 and a duplicate timesheet was paid on December 20, 2001. We were unable to determine when the timesheets were prepared because the supervisor did not date any of the timesheets that he signed and the student was not required to sign and date any of her timesheets.

<sup>11</sup> Research fellows do not receive fringe benefits.



Office of Research Services

Andrew B. Rudeczynski, Ph.D.  
*Associate Vice President for Finance*  
*Executive Director Research Services*

April 13, 2006

James J. Noeth  
Senior Audit Manager  
National Science Foundation  
4201 Wilson Blvd.  
Arlington, VA 22230

Dear Mr. Noeth:

We welcome this opportunity to respond to your letter dated February 16, 2006, transmitting the NSF's draft Report ("Report") on the audit of the University of Pennsylvania's ("University") Effort Reporting System.

First and foremost, we appreciate that the Report expressly recognizes the significant steps the University has already taken to improve processes related to payroll certification required by OMB Circular A-21, Section J.10. The University has implemented its electronic Effort Reporting System, created and revised policies related to effort reporting as part of its examination of the practices and policies consonant with the implementation of a new electronic system, and implemented improved control procedures for payment of temporary employees. Many of these activities took place prior to the NSF audit. While they would not have been reflected in the NSF sample population, we are confident that they are already serving to enhance the quality of our Effort Reporting System.

A small number of factual inaccuracies exist in the Report, most of which do not constitute material items. These we have noted separately in Appendix A. In general, we do not disagree with the Report's findings of errors in accounting or procedures which resulted in two of the three questioned costs. As we will elaborate below, we do not agree with the finding in NSF Award No. DMR-0079909.

Our response is organized by what we believe are the major control issues raised by the report.

#### Timeliness and Reliability of Effort Reports

As the Report itself notes in paragraph 2 on page 7, OMB Circular A-21, Section J.10 does not establish a time frame for certification of effort reports to take place. Lacking such a government standard, the Report places reliance on the University's 45 working day return policy, concluding that any certification after the University deadline is inherently unreliable. Such reliance seems undue, in view of the fact that the University could legitimately have instead established a 60 or even a 90 day policy, and the majority of the late effort reports missed the University deadline by

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less than 30 days. For this reason, we must respectfully take issue with the Report's conclusion that substantial costs could be questioned on the basis of the University timeliness policy alone.

We believe that the Report's premise also fails to adequately take into account the extent to which faculty, staff and students have a number of means of "memory recall" that can be used in verifying that effort has been expended on a sponsored project. These include reports, lab notebooks and lab meetings, for example. Although none of this supplementary documentation is required by the OMB Circular, it provides additional corroboration for the reliability of even untimely effort reports.

In noting the above, we certainly do not mean to question the advisability of completing the certifications in as timely a manner as possible, and we are confident that the new University procedures will help to promote that goal. Unless and until OMB establishes a specific timeliness standard, however, we believe it is not reasonable to quantify an institution's theoretical liability upon the mere basis of the University's failure to meet its own timeliness policies.

#### Suitable Means of Verification

Paragraph 2, page 8 of the Report indicates that 3 faculty effort reports were not signed by the faculty, as required by University policy. The revised University policy requiring faculty to certify their own effort reports (Sponsored Projects Policy No. 2114) did not become effective until November 2003. All three cited effort reports (for \$60,178) were for periods prior to that time, at a time when it was permissible for someone else to sign those reports. In view of this lack of federal or University guidance, we believe it is unduly harsh to nullify the validity of the effort reports for purposes of an error calculation.

Similarly, neither then-University policy nor OMB Circular A-21 define what a suitable means of verification is. In that context, it was not unreasonable for business administrators to have used either written or oral means of verification. Indeed, in many instances in which the Report concluded that the signing official lacked a "suitable means of verification," the Principal Investigators verified to NSF auditors that the charges were correct.

Recognizing that oral verification is more difficult to establish after the fact, the University now requires (Sponsored Projects Policy No. 2134, effective October 2004) written after-the-fact verification. We believe, however, that the Report should exclude historical effort reports judged not to have had suitable means of contemporary, written verification in the Report's assessment of the theoretical liability.

#### Independent Internal Evaluation of Payroll Distribution system

OMB Circular A-21, Section J.10.b.(2)(f) states "... the system will provide for (emphasis added) independent internal evaluations to ensure the system's effectiveness and compliance with the above standards..." The relevant standards referred are 1) the payroll distribution system will be incorporated into the official records of the institution..." 2) the method must recognize the principle of after-the-fact confirmation or determination so that the costs distributed represent actual costs..." 3) "...payroll distribution system will allow confirmation of activity allocable to each sponsored agreement..." 4) "...the payroll distribution system may reflect categories of activities expressed as a percentage distribution to total activities." 5) "...direct and F&A charges may be made initially to sponsored agreements on the basis of estimates made before services are performed..."

We have not understood the University to be required to have an independent internal evaluation of the payroll distribution system, on either a periodic or non-periodic basis, which goes beyond our independent external A-133 audit or our internal audits of individual sponsored projects or other system audits. We believe that in order to meet the requirements of Section J.10.b.(2)(f), the system must be such that the system can be measured against the standards enumerated in Section J.10.b.(1) and (2). Because we believed that our A-133 audit, as well as our targeted audits of sponsored projects described below, each can measure the validity of payroll distributions and effort expended, the University's payroll system meets the criteria for an independent internal evaluation as required by the OMB Circular.

In University internal audits of awards, wherein personnel charges are made, the following testing procedures are conducted:

- Agree summary of salary expenditures/transactions to BEN (i.e., general ledger) report. If amounts do not agree request Business Administrator to reconcile and explain the difference.
- Compare personnel data per summary to the grant proposal budget and inquire as to any significant variances of named personnel. Compare percentage/amount of budgeted effort and salary to actual.
- Review effort reports for all periods under review. Note any missing reports.
- Determine whether reports are appropriately signed.
- Agree effort reported on submitted reports to the payroll distribution for the same period by reference to salary management reports (or other reporting sources).

On page 11, the draft Report states, "UPENN did not conduct independent evaluations of its payroll distribution system." In fact, such evaluation occurred as part of our examination of the practices and policies consonant with the implementation of a new electronic system. Outcomes of that exercise included the creation and revision of policies related to effort reporting and implementation of improved control procedures for payment of temporary employees.

In our view, our ability to test these elements thus supports that the Effort Reporting System, as required by OMB Circular A-21, did provide for an independent internal evaluation.

#### Specific Questioned Costs

Page 12 of the draft Report contains a statement to the effect that a graduate student on DMR-0079909 spent 20% of her effort as a teaching assistant while being paid 100% from the NSF award. We believe that this is consistent with the obligations of students in the PhD program in the School of Engineering and Applied Sciences. As part of a graduate student's obligations, s/he must spend time in teaching and other educational activities. The student in question spent 100% of her compensated effort (limited to 20 hrs/week) working on the NSF award. All other activities including acting as a teaching assistant are uncompensated but still required as part of the Ph.D. program.

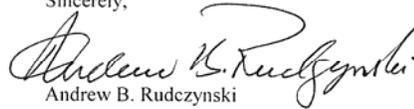
#### Recommendations

The draft Report makes a number of recommendations for improved internal controls that the University has already implemented, or believes are already inherent in our procedures and systems.

- The University's electronic Effort Reporting System provides for monitoring of the effort reporting process and timelines that are available to both central administration and School and Department level academic and business administration;
- The University promulgated Sponsored Projects Policy No. 2134 in October 2004 indicating what a suitable means of verification is and updated Sponsored Projects Policy No. 2114 in November 2003 requiring faculty to certify their own effort reports;
- In October 2005, the University required the use of a new standard temporary hourly timesheet to include information necessary to readily associate hours worked to specific projects and to require contemporaneous certification of effort by individuals using a suitable means of verification.
- The University already has accountability for effort reports in place at the departmental and school levels as part of the electronic Effort Reporting System. We have begun internal discussions to determine whether additional accountability measures are necessary, including NSF's suggestion that Department Chairs be held accountable for the timely completion of effort reports.

Thank you for the opportunity to respond to your draft report. Should you have any questions please do not hesitate to contact me.

Sincerely,



Andrew B. Rudczynski

cc: Scott Douglass  
Vice President for Finance and Treasurer  
Perry Molinoff, MD  
Vice Provost for Research

## APPENDIX A

### TECHNICAL CORRECTIONS

#### Background Materials

Penn's annual external funded research budget approximates \$750 million. For other information on Penn, please see <http://www.upenn.edu/about/facts.php>

#### Other

Paragraph 3 of page 7 states that business managers are responsible for making accounting adjustments "...if the actual time spent on research is significantly different from the predetermined estimates of time..." In actuality, adjustments need to be made only if the actual amount of time is significantly *less*. Time spent over and above the committed proposed effort is voluntary uncommitted effort and need not be accounted for (OMB Memo of Clarification, January 6, 2001).