

NATIONAL SCIENCE FOUNDATION
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OFFICE OF
INSPECTOR GENERAL

MEMORANDUM

Date: September 30, 2008

To: Mary F. Santonastasso, Director
Division of Institution and Award Support (BFA/DIAS)

Karen Tiplady, Director
Division of Grants and Agreements (BFA/DGA)

Thru: James J. Noeth, Deputy Associate Inspector General for Audits
Office of Inspector General *James J. Noeth*

From: Joyce N. Werking, Audit Manager *J. Werking*
Office of Inspector General

Subject: OIG Report Number 08-1-014
Audit of Labor Effort Reporting System, Vanderbilt University

Attached is the final report prepared by Regis Associates, P.C., an independent public accounting firm, on the audit of the payroll distribution and effort reporting system used by the Vanderbilt University to support labor charges to NSF grants. The University's comments to the draft report have been summarized after the recommendations for each audit finding and the auditor's response has been provided to these comments. The full text of the University's comments is included as Appendix C to the audit report.

The audit found that Vanderbilt generally has a well established Federal grants management program. However, the University needs to improve its internal controls over the labor effort certification process to ensure the reliability of the after-the-fact confirmation of actual salary charges to Federal awards. Without timely or appropriate controls for certifying labor effort confirmation reports, Vanderbilt has less assurance the labor effort confirmations are reliable and reasonably support salaries and wages charged to NSF sponsored projects.

We consider Vanderbilt's internal control procedural weaknesses identified in the audit findings to be significant. Accordingly, we request that your office work with the University and the cognizant audit agency, the Department of Health and Human Services (DHHS), to develop a written Corrective Action Plan detailing specific actions taken and/or planned to address each audit recommendation. Milestone dates should be provided for corrective actions not yet completed.

To help ensure the recommendations are resolved within six months of issuance of the audit report pursuant to Office of Management and Budget Circular A-50, please coordinate the development of the Corrective Action Plan with our office during the resolution period. Each audit recommendation should not be closed until NSF, in coordination with DHHS, determines that Vanderbilt has adequately addressed the recommendation and proposed corrective actions have been satisfactorily implemented. Please note that we have sent a copy of the audit report under separate cover to DHHS.

OIG Oversight of Audit

To fulfill our responsibilities under Generally Accepted Government Auditing Standards, the NSF Office of Inspector General:

- Evaluated the qualifications and independence of the auditors;
- Provided a detailed audit program for the labor effort review;
- Monitored progress of the audit at key points and accompanied Regis auditors onsite at the grantee;
- Conducted periodic meetings with Regis to discuss audit progress, findings, and recommendations;
- Reviewed the audit report and selected audit working papers, prepared by Regis, to ensure compliance with Generally Accepted Government Auditing Standards and the NSF Audit Program; and
- Coordinated issuance of the final audit report.

Regis Associates is responsible for the attached audit report on Vanderbilt's payroll distribution and effort reporting system and the conclusions expressed in the audit report. The NSF OIG does not express an opinion on the audit report's conclusions.

We appreciate the cooperation extended to us during our review. If you have any questions, please feel free to call me at 703-292-5005 or Joyce Werking at 703-292-8097.

Enclosure

cc: Gilbert Tran, Technical Manager, Office of Management and Budget
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Audit of Labor Effort Distribution and Reporting System

**Vanderbilt University
Nashville, Tennessee**

**National Science Foundation
Office of Inspector General**

**September 24, 2008
OIG 08-1-014**



MANAGEMENT CONSULTANTS &
CERTIFIED PUBLIC ACCOUNTANTS

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EXECUTIVE SUMMARY

This audit report provides the results of our review of the payroll distribution and effort reporting system used by Vanderbilt University (Vanderbilt) to record and charge salaries and wages to National Science Foundation (NSF) grants. In fiscal year 2006, Vanderbilt had total Federal grant expenditures of \$315 million,¹ of which \$13.8 million was directly funded by NSF. Of this amount, \$4.2 million or 30 percent was for labor costs directly charged to NSF grants. This audit is one of a series of Office of Inspector General's (OIG) reviews of the labor effort distribution systems being conducted at NSF's top-funded universities in order to assess the adequacy of internal controls to ensure salaries and wages claimed on NSF grants are properly managed, accounted for, and monitored.

Our audit found that Vanderbilt generally has a well established and sound Federal grants management system. Vanderbilt has updated its Federal grants management policies and procedures in 2002 to provide a general framework for after-the-fact confirmation of labor charges to Federal sponsored projects, uses a web-based effort reporting training module to educate personnel on the labor certification process, and is developing a new automated payroll distribution and effort reporting system to improve its labor certification process. Also, review of 30 sampled employees disclosed that the University's labor effort reports generally supported the FY 2006 NSF salaries of \$623,317 directly charged to NSF grants.

However, Vanderbilt needs to improve its internal controls for managing and administering its payroll distribution and effort reporting system to ensure after-the-fact labor certifications are timely and reliable. Due to inadequate internal controls, five of the 30 sampled employees interviewed reported 10 to 50 percent less actual effort worked on NSF grants than certified on their labor effort reports. In addition, certifying officials did not timely approve 12 of the 68 effort reports reviewed, representing 16 percent of total salaries tested, within six months after the end of the reporting period, ranging from 21 to 174 days late. Also, 41 of the effort reports reviewed, representing 60 percent of NSF salary charges, lacked documented certification dates.

Without timely or effective controls, Vanderbilt has less assurance that the labor certifications are reliable and reasonably support labor costs charged to NSF grants. Specifically, the University overcharged \$17,955 (3 percent) for employee activities not directly benefiting NSF projects and did not have "suitable means of verification" supporting another \$4,584 (1 percent) in FY 2006 salary charges reviewed. Furthermore, late certifications diminish the reliability of Vanderbilt's after-the-fact confirmation of NSF labor costs because certifying officials are relying on their memory, sometimes going back as long as one year, to validate the reported labor effort. Also, without documented certification dates, Vanderbilt cannot determine whether the labor effort confirmations were timely or not. The systemic nature of these control weaknesses raises concerns about the reasonableness and reliability of the remaining \$3.6 million in FY 2006 labor charges to NSF grants and the salary portion of Vanderbilt's other \$300 million of Federal grant expenditures.

¹ The \$315 million of Federal grant expenditures excludes flow-through funds of \$39 million and Department of Education student-aid funds of \$61 million.

Furthermore, Vanderbilt needs to provide for accurate reporting of voluntary committed labor effort devoted by faculty members on Federal sponsored projects. Specifically, the University did not appropriately track and report uncompensated faculty labor effort when funded principal investigator (PI) effort on NSF grants was replaced with cost shared effort by the faculty members. Our review of the 15 sampled faculty members disclosed that two individuals charged \$9,161 less salary to two NSF grants for funded labor effort than included in the award budget proposals. The FY 2006 salary costs associated with such unreported faculty effort is approximately 3 percent of the total NSF labor charges for the 15 faculty members reviewed. Further, for one of the two PIs, Vanderbilt did not estimate an amount of labor effort to include in the organized research base for computing its negotiated Federal indirect cost rate, as required by Federal regulations.

These weaknesses occurred because Vanderbilt has not established adequate internal controls to provide for proper administration and oversight of its payroll distribution and labor effort reporting system. Specifically, the University has not (i) established comprehensive effort reporting policies and procedures, (ii) provided adequate employee training to ensure clear campus understanding of the effort reporting process; and (iii) performed sufficient monitoring to ensure campus implementation and compliance with established University and Federal effort reporting policies and procedures. To address the weaknesses, recommendations made were primarily directed at the need to enhance Vanderbilt's written policies to improve the timeliness and reliability of the labor confirmation process.

A draft audit report requesting comments on the findings and recommendations was issued to Vanderbilt. In general, the University agreed to implement the audit recommendations and believed its new web-based Electronic Personnel Action Change (ePAC) system for labor effort reporting will address many of the control weaknesses identified in the audit findings. Vanderbilt's comments and proposed corrective actions were generally responsive to the audit recommendations. Therefore, NSF should work with the cognizant Federal audit agency to ensure the University develops an acceptable corrective action plan to resolve each recommendation. The corrective action plan should establish clear milestone dates for all proposed corrective actions; including updates to Vanderbilt's Effort Reporting Policy to reflect changes in its effort reporting process brought about by the recent implementation of the new ePAC system. Furthermore, it is essential for the University to establish written instructions and procedures to clearly define the role and responsibilities for all campus personnel involved in the new web-based effort reporting system. Written and current policies and procedures are the cornerstone to a sound Vanderbilt internal control structure.

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ACRONYMS	
NSF	National Science Foundation
OIG	Office of Inspector General
OMB	U. S. Office of Management and Budget
PAF	Personnel Action Form
PI	Principal Investigator
OCGA	Office of Contracts and Grants Accounting
DSR	Division of Sponsored Research

INTRODUCTION

Background

Approximately one-third of the National Science Foundation (NSF) award funds are provided for salaries and wages, amounting to about \$1.3 billion annually at universities. Also, in recent years, 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 (OIG) is undertaking a series of reviews of the labor effort distribution systems at NSF's top-funded universities in order to assess the adequacy of internal controls to ensure salaries and wages costs claimed on NSF grants are properly managed, accounted for, and monitored. This audit, involving Vanderbilt University (Vanderbilt), is one of several planned reviews of such labor effort distribution systems.

Vanderbilt University, founded in 1873, is a private nonsectarian institution devoted to research and teaching in liberal arts and sciences, engineering, music, education, and human development. The University is located in Nashville, Tennessee and is comprised of 10 schools, a public policy institute, and a medical center. It has approximately 2,689 faculty members, 17,567 administrative and support staff, 6,378 undergraduates, and 5,229 graduate and professional students. Generally, Vanderbilt faculty members in the non-medical area are awarded nine-month academic year appointments, thus dedicate a majority of their summer effort to Federal sponsored research projects.

In fiscal year 2006, Vanderbilt revenues totaled \$2.48 billion, of which \$278 million or 11 percent was received from Federal Government grants and contracts. A majority of the University's revenues, 64 percent, was derived from health care services provided by its medical center. Total Vanderbilt FY 2006 direct Federal grant expenditures totaled \$315 million, of which \$13.8 million (4 percent) was for NSF awards. Of the \$13.8 million in NSF expenditures, \$4.2 million or 30 percent was for salaries and wages.

Vanderbilt's management and oversight of Federal grant programs for its non-medical area is shared between the Office of Contracts and Grants Accounting (OCGA) and the Division of Sponsored Research (DSR). OCGA is responsible for financial administration and monitoring of active Federal awards and ensuring Vanderbilt's compliance with Federal grant regulations and sponsoring agency requirements. As such, OCGA develops Vanderbilt's policies and procedures for Federal grants management. DSR is primarily responsible for pre-award grant functions.

Within each Academic Department, Business Administrators are tasked with the management and oversight of sponsored projects by providing assistance to faculty members in administering their Federal grants. Typically, such Business Administrators are responsible for ensuring that awards and their budgets are created accurately in the University's financial systems, award expenditures are monitored on a monthly basis, and labor effort certification reports are reviewed and approved by the employee or project PI. Specifically, PIs, in conjunction with the Business Administrators, have primary responsibility for all aspects of the

sponsored projects including approval of all charges and ensuring that the research is conducted in accordance with the award terms and conditions.

Objectives, Scope, and Methodology

Review Objectives. Our review objectives were: (a) to evaluate whether Vanderbilt's internal controls are adequate to properly manage, account for, and monitor salary and wage charges to NSF grants in accordance with OMB and NSF grant requirements and (b) to determine whether the salaries and wages are allowable, allocable, and reasonable in accordance with Federal cost principles and NSF grant terms and conditions.

Scope and Methodology. The audit focused on Vanderbilt's payroll distribution and effort reporting system and, accordingly, we reviewed internal controls for ensuring that labor costs charged to NSF were (i) actually incurred; (ii) benefited NSF awards; (iii) were accurately and timely recorded; and (iv) were for allowable and allocable-type activities, as required by Federal and NSF grant requirements.

To address each of these control objectives, NSF-OIG engaged a statistician to provide assistance in selecting a statistical sample of employee salary records for testing. The use of statistical tools and methodology is to enable the NSF-OIG to project the audit results to the entire population of universities included in its planned reviews of payroll distribution and effort reporting systems nationwide. However, due to the small statistical sample size of 30 employees tested, we are not able to make any projections to the total Vanderbilt population of labor costs charged to NSF grants. Specifically, the FY 2006 salaries and wages costs for the 30 sample employees tested amounted to \$623,317 and were supported by 68 effort reports. The statistical sample was derived from a total population of 352 employees, who charged \$4,182,488 of salaries to NSF grants during FY 2006. This population excluded (a) any employee with total salary costs of \$100 or less, and (b) all salary charges for undergraduate students. These amounts were excluded because of their small dollar value and the difficulty in locating undergraduate students for personal interviews.

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

- Labor effort reports documenting 100 percent of each employee's compensation allocated to sponsored and non-sponsored projects for each reporting period.
- Appointment letters or other documents supporting the approved annual salary for employees.
- Payroll distribution information detailing the actual salaries and wages charged to sponsored projects and other activities for each employee during the fiscal year.

- Award documents to determine whether the grants had any terms and conditions that would affect allowable labor charges to the award.

To ensure that salaries and wages charged to NSF awards were incurred and benefited NSF awards, we corroborated the information on Vanderbilt's labor effort reports by interviewing the 30 sampled employees. We inquired whether (a) the labor charges documented were actually incurred on projects and activities, (b) the approximate percentage of effort actually worked on each sponsored project and/or activity was reasonably consistent with labor charges to NSF, and (c) the type of work performed on NSF projects was generally consistent with the scope of the awards. We also interviewed selected Business Administrators in Academic Departments to determine procedures for processing and monitoring employee salary charges to Federal grants. Additionally, we interviewed selected PIs to determine the number of projects and personnel they were responsible for, and their processes for verifying work performance prior to approving and signing labor effort reports.

To determine whether labor costs were accurately recorded and charged to NSF, we obtained appointment letters or other documentation supporting the authorized Vanderbilt salary rate for each employee in our selected sample. We recalculated labor costs charged to NSF projects by using the salaries shown on supporting documentation and apportioning it by the distribution percentage and period of time represented on the labor effort reports. We also reviewed labor transactions to determine whether Vanderbilt followed Federal, NSF, and University requirements for charging such costs to Federal sponsored projects.

We determined whether Vanderbilt officials approved and signed effort reports in a timely manner, by comparing the date the effort reporting period ended to the date the reports were approved and signed. Because Vanderbilt did not have an established time frame for effort certification, we used six months from the end of the reporting period as criteria during our review. Based on similar audits performed at other universities nationwide, the six month criteria is reasonable because all the universities had timeliness standards of less than six months from the end of the effort reporting period. Also, as required by Vanderbilt's policy, we determined whether the effort reports were properly reviewed and signed by the employee, the responsible project PI, or a cognizant individual with "suitable means of verification."

Also, we met with Vanderbilt's independent public auditors who performed the OMB Circular A-133 audit.² Selected audit working papers were reviewed to ascertain the actual audit scope and procedures used in order to (i) preclude any duplicative audit work and (ii) determine the specific audit procedures performed on the labor effort reporting system.

Onsite review work at Vanderbilt was performed for a 2-week period in May 2007 and a 3-week period in July 2007. The remainder of our review work was completed through phone interviews, emails, and documentation requests through June 2008. We were engaged to perform the review by the NSF-OIG and the audit was conducted in accordance with the Comptroller General's *Government Auditing Standards* and accordingly included such tests of accounting records and other auditing procedures, as we considered necessary, to fully address the audit objectives.

² OMB Circular A-133 is entitled *Audits of States, Local Governments, and Non-Profit Organizations*.

FINDINGS AND RECOMMENDATIONS

Finding 1: Internal Control Improvements Needed in Payroll Distribution and Effort Reporting System

Federal grant requirements provide that salaries and wages charged to sponsored projects be supported by labor effort reports signed and approved by the employees or officials who are in a position to know whether the work was performed. Such reports are required to 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 on sponsored projects. Although Federal requirements do not specify when a labor effort report should be completed, university officials should provide the after-the-fact confirmation as close to the end of the reporting period as possible to ensure its reliability.

Our review of 30 sampled employees disclosed that Vanderbilt's labor effort reports generally supported the FY 2006 NSF salaries of \$623,317 directly charged to NSF grants. However, Vanderbilt needs to improve its internal controls for managing and administering its payroll distribution and effort certification system to ensure after-the-fact labor certifications are timely, and reasonably reflect the actual work performed on sponsored projects. Review of 68 labor effort reports for the 30 sampled employees found the following control weaknesses:

- Twelve effort reports, representing 16 percent of total salaries tested, were not timely certified within six months after the end of the reporting period, ranging from 21 to 174 days late. In addition, 41 of the reports, representing 60 percent of NSF salary charges reviewed, lacked a certification date.
- Five employees reported 10 to 50 percent less actual effort worked on NSF grants during interviews than the labor effort certified on effort reports.
- One labor effort report was inappropriately certified by an individual without "suitable means of verification" to validate the reasonableness of the actual work performed on the NSF grant.

Without timely or effective controls, Vanderbilt has less assurance that the labor certifications are reliable and reasonably support labor costs charged to NSF grants. Specifically, the University overcharged \$17,955 (3 percent) for employee activities not directly benefiting NSF projects and did not have "suitable means of verification" supporting another \$4,584 (1 percent) in FY 2006 salary charges reviewed. Furthermore, late certifications diminish the reliability of Vanderbilt's after-the-fact confirmation of NSF labor costs because certifying officials are depending on their memory to validate the reported labor effort. Similarly, without documented certification dates, Vanderbilt cannot determine when the effort reports were reviewed and therefore, whether they were timely. The systemic nature of these control weaknesses raises concerns about the reasonableness and reliability of the remaining \$3.6 million in FY 2006 labor charges to NSF grants and the salary portion of Vanderbilt's other \$300 million of Federal award expenditures.

These weaknesses occurred because Vanderbilt did not establish adequate internal controls to provide for proper administration and oversight of its payroll distribution and labor effort reporting system. Specifically, the University has not (i) established comprehensive written effort reporting policies and procedures; (ii) provided adequate employee training to ensure clear campus understanding of the effort reporting process; and (iii) performed sufficient monitoring to ensure campus compliance with established University and Federal effort reporting policies and procedures.

Labor Effort Reports Must Be Timely Certified as Accurate and Reflect Work Benefiting NSF Awards

OMB Circular A-21, *Cost Principles for Educational Institutions*, requires certification of labor effort/activity contributed by employees on Federal awards. Specifically, paragraph J10.b.(2) states a payroll distribution system is required that will "...reasonably reflect the activity for which the employee is compensated by the institution; and encompass both sponsored and all other activities on an integrated basis." Such a system must provide for after-the-fact confirmation of employee activity by a responsible person with "suitable means of verification that the work was performed." The Circular also requires that the University provide for periodic independent internal evaluations to ensure the system's effectiveness and compliance with the Federal standards.

Circular A-21 recognizes that labor charges may be made initially to sponsored agreements on the basis of estimates made before services are performed. But when "significant changes in the work activity" occur, such changes in employee salary distributions must be identified and entered into the system. Further, Circular A-21 recognizes that a precise allocation of labor effort is not always feasible and states that reliance can be placed on "estimates in which a degree of tolerance is appropriate." Furthermore, the Circular recognizes that each institution "should employ sound management practices" in applying the Federal cost principles for charging costs on sponsored projects."³ As such, Vanderbilt should have written procedures defining (1) what constitutes "significant changes in work activity" that are required to be entered into the payroll distribution system and (2) what level of "precision" is acceptable between *actual* effort and *reported* effort that is considered to be tolerable and does not have to be adjusted in the payroll distribution system.

Consistent with the Circular A-21 requirement for "sound business management practices," OMB Circular A-110, *Uniform Administrative Requirements for Grants and Agreements with Institutions of Higher Education, Hospitals, and Other Non-Profit Organization*,⁴ requires entities receiving Federal awards to establish and maintain internal controls that are designed to reasonably ensure compliance with Federal laws, regulations, and program requirements. Further, OMB Circular A-133, *Audits of States, Local Governments, and Non-Profit Organizations*, defines internal controls as a "process effected by an entity's

³ Paragraphs A.2.d. and A.2.e of OMB Circular A-21, *Cost Principles for Educational Institutions*.

⁴ Section .21 of OMB Circular A-110, requires that a grantee's financial management system provide for "Effective control over and accountability for all funds, property, and assets. . . Written procedures for determining the reasonableness, allocability and allowability of costs in accordance with the provisions of the applicable cost principles and terms and conditions of the award."

management and personnel, designed to provide reasonable assurance regarding the achievement of objectives in the following categories: (1) Effectiveness and efficiency of operations; (2) Reliability of financial reporting; and (3) Compliance with applicable laws and regulations.” Internal control is considered a major part of managing an organization and comprises the plans, methods, and procedures used to meet missions, goals, and objectives. Management sets the objectives, puts the control mechanisms in place, and monitors, and evaluates whether the control is operating as intended. People are what make internal control work, thus sufficiently trained personnel in an organization and clear job descriptions and responsibilities are critical elements of a successful internal control program.

Pursuant to OMB requirements, Vanderbilt has established three different effort reporting processes to provide for after-the-fact certification of the reasonableness of actual employee effort devoted to Federal sponsored projects: the Personnel Action Form (PAF) for exempt employees; a certification report for faculty summer salaries; and bi-weekly timesheet certification for non-exempt employees. The PAF is a multi-purpose document⁵ used to both allocate employee salaries to sponsored projects on a prospective basis and to provide for after-the-fact certification of the reasonableness of such salaries charges. Specifically, Vanderbilt procedures require the employee or the project PI to review and approve the certification section of the PAF at least once annually or whenever there is a change in an employee’s salary distribution. Each of the University’s Academic Departments is responsible for distributing the PAFs to the employee or project PI, obtaining the after-the-fact confirmation of salary charges to sponsored projects, and maintaining copies of the certified reports. In addition, Vanderbilt policy requires a separate labor certification report for faculty summer salary charges to Federal sponsored projects. The Office of Contracts and Grants Accounting (OCGA) is responsible for compiling, distributing, obtaining confirmation, and maintaining copies of the separate effort certification reports for faculty summer salaries.

Many Labor Effort Reports Not Timely Certified or Dated

Although Federal regulations do not specify when labor effort reports should be reviewed and certified, sound internal control dictates that University officials should provide the after-the-fact confirmation as close to the end of the reporting period as possible to ensure its reliability. However, Vanderbilt did not establish any specific time frames for review and approval of either of the two effort certification reports. Therefore, for audit purposes, we used six months from the end of the reporting period to evaluate the timeliness of the University’s labor effort certification process. The six-month time frame is reasonable because we found that the established turnaround time at the other universities reviewed to date have all been less than six months.

Therefore, using the six-month criteria, only 15 of the 68 FY 2006 labor effort reports for the 30 sampled employees were certified on time. The certifying officials did not timely approve 12 reports, representing \$98,415 (16 percent) of the total NSF labor charges reviewed. The number of days late beyond six months from the end of the reporting period ranged from 21 to 174 days. Specifically, all 12 late certifications were for the confirmation reports for faculty summer salaries charged to NSF grants. Furthermore, for the remaining 41 PAFs reviewed,

⁵ The PAF is also used to document other employee personnel and payroll information such as new hires, terminations, charges in personal data, salary increases, etc.

representing \$374,227 or 60 percent of the total FY 2006 NSF salary charges, we were unable to determine whether certifying officials approved the PAFs timely because the signature dates were not documented.⁶ The following table summarizes the number of days late beyond six months from the end of the reporting period that Vanderbilt officials took to review and approve the labor effort certifications as well as the number of reports that were not dated to permit an evaluation of timeliness.

Effort Reports Certified on Time, Late, or Not Dated				
Number of Days	# of Effort Reports	% of Effort Reports	Total Affected Salaries	% of Affected Salaries
Reports Certified Timely	15	22%	\$150,675	24%
1-50	11	16%	\$83,415	13%
51-100	0		0	
101-150	0		0	
150-200	1	2%	\$15,000	3%
Reports Certified Late	12	18%	\$98,415	16%
Reports Not Dated	41	60%	\$374,227	60%
SUBTOTAL – Reports Late or Not Dated	53	78%	\$472,642	76%
TOTAL	68	100%	\$623,317	100%

Timely approval of labor effort reports is essential to ensure labor charges to NSF grants are reliable because certifying officials are generally relying on their memory when approving reported work activity for themselves and the individuals that work for them. Vanderbilt employees or project PIs must at a minimum remember as far back as one year in many instances to confirm the reasonableness of reported employee activity since PAF certification are only required annually. Additionally, many PIs have multiple awards and many employees for whom they are responsible, which increases the risk that the PI’s memory of the amount and type of

⁶ Cognizant Vanderbilt officials believed that the dates other Department officials signed the multi-purpose PAF should be used to document the labor effort certification date. However, these other Department officials were reviewing and approving the PAF data for other purposes, thus it would not be valid to use such dates for labor effort certification purposes.

activities performed will be less reliable as time increases. For example, one PI had a dual appointment in the Departments of Radiology and Biomedical Engineering and was responsible for overseeing the research activities of two medical students and three graduate students on two NSF research projects as well as other Federal funded projects. Thus, limiting the review and certification of PAFs to the shortest amount of time possible helps ensure a more reliable certification of labor costs associated with such activities on Federal awards.

Salary Charges Did Not Directly Benefit NSF Grants

Interviews of 30 sampled employees found that the actual FY 2006 labor effort for five employees on NSF sponsored projects was less than what was reported and certified on their PAFs, with deviations ranging from 10 to 50 percent. The differences were for employee activities that did not directly benefit the NSF projects and totaled \$17,955. Specifically, while charging their salaries to NSF projects, (i) two employees were inappropriately working on other sponsored research projects and (ii) three employees were devoting time and effort to grant proposal writing and other administrative activities, which cannot be directly charged to Federal grants. The following table summarizes the impacted salary costs for the five subject Vanderbilt employees.

Employee Salary Costs Not Benefiting NSF Grants

Sample #	Employee Type	Employee Effort Spent on Other Research Activities		Employee Effort Spent on Administrative Activities and/or Grant Proposal Writing		Total Salary Costs Not Benefiting NSF Grants	
		Percent	Dollar Impact	Percent	Dollar Impact	# of employees	Dollar Impact
2	PI			10%	\$1,812		\$1,812
10	PI	34%	\$5,666				\$5,666
28	Grad. Student	50%	\$5,207				\$5,207
29	PI			20%	\$2,787		\$2,787
30	PI			10%	\$2,483		\$2,483
Total		2 employees	\$10,873	3 employees	\$7,082	5 employees	\$17,955

The following examples provide further details to illustrate that Vanderbilt's labor effort certifications did not always reasonably support the actual FY 2006 employee effort devoted to NSF projects.

- During three summer months in 2005, a PI spent approximately 66 percent of her research effort working on three NSF projects and 22 percent on a Vanderbilt project. However, the PI improperly charged \$16,667 or two-thirds (67 percent) of her total summer salary to two NSF grants even though she had only devoted 44 percent actual effort; an overcharge of \$5,666.
- For the nine-month academic year from September 2005 to May 2006, a graduate student divided his research effort equally between a NSF project and a related privately-funded project. According to the student, the NSF-funded portion of the project was for the theoretical side of the research, while the privately-funded portion was for the practical application aspect of the research. However, from September 2005 to January 2006, the graduate student improperly charged 100 percent of his salary, totaling \$10,415, to the NSF grant; resulting in an overcharge of 50 percent or \$5,207.
- During the summer months of 2005 and 2006, a PI worked on a NSF grant and charged salary totaling \$13,936 during FY 2006. During an interview, the PI stated he spent approximately 80 percent of his time on NSF research activities and 20 percent writing grant proposals during the summer months. However, he improperly charged 100 percent of his summer salary to the NSF project; resulting in an overcharge of 20 percent or \$2,787.

Certifying Official Lacked Suitable Means to Verify Effort Report

A Vanderbilt certifying official inappropriately approved the labor effort report for one sampled employee without "suitable means of verification" to validate the reasonableness of the NSF salary charges. Specifically, a Department Chair certified the labor effort report for a PI, representing \$4,585 of the PI's NSF salary charges, without having any first hand knowledge of the work performed on the NSF project or obtaining any documentary evidence to validate the NSF charges were for actual work performed on the sponsored projects. Since the Department Chair was not directly supervising or involved in the subject NSF project, he would not have had a valid basis to certify the PI's labor effort to the research project.

Potential Excess Labor Charges

Without timely or appropriate controls for certifying labor effort reports, Vanderbilt can provide less assurance to NSF that the University's after-the-fact confirmation of labor charges is reliable and reasonably supports actual effort on NSF sponsored projects. As discussed in the above report sections, control weaknesses resulted in the University (a) overcharging NSF \$17,955 (3 percent) of FY 2006 salary charges for activities of five employees not directly benefiting the sponsored projects (see Appendix A) and (b) not having adequate documentation to support another \$4,585 (1 percent) in salary charges. Furthermore, late certifications for 16 percent of NSF salary charges reviewed increases the risk that such certification are not reliable because employees are depending on their memory to validate the reported labor effort. For

example, one PI interviewed could not confirm the reasonableness of \$13,209 charged to two NSF grants because she could not remember how much effort she had devoted to the projects during FY 2006. Also, without a certification date for an additional 60 percent or \$374,227 of NSF salary costs reviewed, Vanderbilt could not document when officials certified the associated effort reports; thereby raising questions about the reliability of its after-the-fact confirmation process for a significant portion of the sampled NSF labor charges. The systemic nature of these control weaknesses raises concerns about the reasonableness and reliability of the remaining \$3.6 million of FY 2006 labor charges to NSF grants as well as the salary portion of Vanderbilt's other \$300 million of direct Federal grant expenditures.

Several Factors Contributed to Effort Reporting Weaknesses

These weaknesses occurred because Vanderbilt did not establish adequate internal controls to provide for proper management and oversight of its payroll distribution and labor effort reporting system to mitigate the risk of the University's decentralized organizational structure for Federal grants management. Because each of Vanderbilt's Academic Departments is assigned primary responsibility for management of its own effort reporting process, it is important that the University (i) establish detailed written labor effort reporting policies, procedures, and implementation guidance, (ii) provide adequate training to all cognizant personnel to ensure clear understanding of its labor effort reporting process, and (iii) enhance monitoring to ensure proper implementation and campus compliance with University and Federal requirements.

Comprehensive Effort Reporting Policy and Procedures Needed to Improve Timeliness and Reliability of Labor Certification Process

While Vanderbilt's Effort Reporting Policy, issued in January 2002, provided a general framework for the after-the-fact confirmation of labor charges to Federal sponsored projects, the University's policy lacked detailed procedures for ensuring timely and reliable certification of labor charges to Federal sponsored projects. Specifically, the University's policy required faculty and other employees to utilize the certification section of the multi-purpose PAF document to provide after-the-fact confirmation of salary charges to Federal projects at least once annually. However, neither the policy nor the PAF itself required the certifying official to date the required certification statement. In addition, while the policy required separate certifications for faculty summer salaries, it did not establish any specific time frames for compilation, distribution, and approval of either the PAF certification reports or the separate summer salary certification reports. Consequently, Vanderbilt did not have any quantifiable standards to ensure timely review and approval of the reasonableness of salary charges to Federal projects to help ensure the reliability of the effort certification process. OCGA officials indicated that draft policies and procedures were being developed to address timeliness issues with the University's labor effort certification process.

Furthermore, Vanderbilt's policy did not establish any standard effort reporting periods and lacked detailed guidance explaining the use of the multi-purpose PAF for labor certification purposes. Specifically, PAF effort certifications were performed annually for all employees at the time the University awarded its salary increases each year. In addition, the employee or project PI was also required to certify reported labor effort whenever a new PAF was submitted to change an employee's status and/or salary distribution. As such, PAF effort certifications

were performed at different times throughout the year and covered different reporting periods for different employees. As a result, certifying officials did not always clearly understand the PAF effort certification process and/or their certification responsibilities because they were confused with receiving multiple labor effort reports at various times during the year.

For example, a graduate student was working on a NSF and industry-funded research project during the 2005-06 academic year upon returning from a summer internship in August 2005. The following multi-purpose PAFs were processed to document the student's personnel actions, salary distributions, and labor effort certifications.

- Upon returning from his summer internship, a PAF was processed to re-hire the student on August 29, 2005. The effort certification section of the PAF was signed by the PI confirming the student's 100 percent actual effort to the NSF grant. However, the purpose of this certification was unclear because the student did not work on the NSF grant during the summer months since his departure for internship on May 17, 2005, as documented on a prior termination PAF.
- On February 1, 2006, a PAF was processed to change the graduate student's salary allocation from 100 percent on the NSF grant to 50 percent on the NSF project and 50 percent on an industry-funded project. The PAF effort certification section was appropriately signed confirming the individual's 100 percent actual effort on the NSF grant for the 5-month period from the prior PAF, effective August 29, 2005.
- On May 1, 2006, a PAF was processed to award the student his annual salary increase. The PAF effort certification section was signed confirming the 50% split allocation to the NSF and industry projects for the 2-month period from the prior PAF, effective February 1, 2006. However, the primary purpose of the PAF was to process the student's annual salary increase in the University's payroll system, not to confirm the labor charges to the sponsored projects; yet Vanderbilt procedures required the labor certification to be completed.

During our audit, several certifying officials interviewed stated that they confirmed the reasonableness of the PAF reported labor effort under the assumption that only annual certifications were required and did not give any consideration to any changes in effort performed. As illustrated in the above example, the PI's certification of labor effort on the PAF to rehire the graduate student after his summer internship indicates that the PI did not have a clear understanding of what exactly he was certifying to when he signed the various PAFs. This occurred because Vanderbilt lacked detailed written guidance clearly explaining the process for using the multi-purpose PAF for both employee personnel actions, such as changes in home department codes and increases in salary rates, as well as to provide for payroll distribution and labor effort certifications on Federal sponsored projects.

In addition, the University did not provide formal training to certifying officials and other cognizant campus officials to promote a comprehensive understanding of the University's labor effort reporting processes and requirements to fully comply with Federal regulations. Vanderbilt officials believed that its web-based effort reporting training module was adequate to educate campus personnel on the labor certification process. However, given the lack of standard PAF labor effort reporting periods, it is particularly important that Vanderbilt provide formal

employee training explaining the different aspects of its effort reporting processes to help ensure the reliability of its certifications of salary charges to Federal sponsored projects.

Currently, Vanderbilt is in the process of developing a new automated payroll distribution and effort reporting system to improve its labor certification process. The new system will allow certifying officials to review and certify the labor effort reports electronically. Therefore, Vanderbilt officials believe the time period for review and approval will be shortened since the effort reports will no longer be required to be physically distributed to certifying officials. Also, it believes the new automated system will be more transparent and will assist both Department and central OCGA staff in monitoring the timely certification of effort reports by readily identifying any delinquent reports for prompt resolution.

While we agree that the automated system should allow for easier monitoring of timely labor effort report certifications, it is essential that Vanderbilt establish formal written policies and operating procedures for proper administration of the new system and provide formal training to all campus personnel in such procedures. Such written guidance should establish an explicit monitoring process and assign clear responsibilities to both the Academic Departments and a central University oversight office, such as OCGA, for campus compliance with timely certification of labor effort reports. The monitoring process should include periodic reminder notices for late effort reports using an increasingly graduated scale to higher levels of Vanderbilt management officials, such as the Department Chair, the Dean, and the Provost, as the period of delinquency increases.

Furthermore, we do not see the issue being resolved until Vanderbilt holds senior management officials, such as Department Chairs, accountable for timely labor effort report certification. Such senior officials have more leverage than Department grant administrative staff in ensuring employees or project PIs review and certify effort reports timely. Because such senior officials would have the responsibility for securing and retaining Department staff and faculty members and recommending salary increases, tenure, and promotion. Hence, they would have more influence in getting certifying officials to respond positively to timely review and certification of labor effort reports.

Comprehensive Written Standards and Better Understanding of Certification Responsibilities Will Preclude Salary Overcharges to Federal Awards

Vanderbilt certifying officials approved labor effort reports reflecting more effort than actually worked on NSF awards because of the lack of detailed University written guidance and inadequate employee training provided for its labor effort certification process. Specifically, Vanderbilt's effort reporting policy did not define the types of employee activities included in *institutional base salary*, such as grant proposal writing or university committee meetings, which should not be charged to Federal projects. It also did not establish quantifiable standards for properly certifying the reasonableness of employee work activity on Federal sponsored projects. The lack of such written guidance and formal training resulted in University certifying officials not clearly understanding and properly executing their effort certification responsibilities. In particular, the certifying officials did not appropriately consider all of an employee's work activities and whether such activities were allowed to be directly charged to Federal grants. In addition, officials did not have any guidance defining "significant change" in estimated labor

effort required to be entered into the payroll distribution system and/or acceptable “precision” or “tolerance” limits for after-the-fact certification of such estimated labor effort.

Explicit written guidance and formal training are essential to clearly define the various classes of employees charging salaries to sponsored projects; their different job activities related to instruction, research, and general administration; and which of those activities should be charged to University funds versus Federal grant funds. Without such guidance and knowledge, certifying officials did not take the necessary steps to carefully consider all employee work activities, particularly proposal writing time and administrative type tasks, when approving the labor effort reports for themselves or employees working on sponsored research projects for which they were responsible. Pursuant to OMB grant regulations, activities that do not directly benefit a sponsored project are not allowable as direct grant charges.

Furthermore, Vanderbilt has not established quantifiable standards for certifying the reasonableness of employee work activity on Federal sponsored projects. While the University’s PAF system provides for initiating prospective changes in labor estimates to ensure “reasonable distributions to sponsored projects and other departmental centers,” its Effort Reporting Policy does not quantitatively define what constitutes “significant changes in work activity” that must be identified and entered into the payroll distribution system, as required by OMB Circular A-21. Similarly, Vanderbilt’s policy has not addressed or defined what level of “precision” or “tolerance” is expected between actual labor effort and the estimated effort that officials review and approve when certifying labor effort reports. Without a specific range or variance within which the University expects the documented labor effort to fall, Vanderbilt certifying officials lack a basis to determine how much an employee’s actual effort can differ from their estimated effort before a cost transfer is required to be processed in the labor effort reporting system. At some universities, the acceptable variance has been established at five percent.⁷

Similarly, without written Vanderbilt guidance and formal employee effort reporting training, a Department Chair inappropriately certified a labor effort report for a PI because he was not aware that he was required to have suitable means of verifying that the employee actually performed the reported labor effort. Cognizant Department grants management staff were not aware that without direct oversight and management of the subject NSF project, the Department Chair did not have first hand knowledge of the PI’s actual research activities in order to properly validate the reported labor effort. Furthermore, Vanderbilt policy did not define the specific steps an official should take to obtain documentation to demonstrate that “suitable means of verification” was used to certify the reported labor effort.

Formal Policy and Procedures Needed for Internal Evaluation of Effort Reporting System

While Vanderbilt’s Internal Audit Department performed the Federally-mandated independent evaluation of its payroll distribution and effort reporting system in 2005, the audit report recommendations did not properly require the University to establish formal written

⁷ A March 2007 report entitled “Policies and Practices: Compensation, Effort Commitments, and Certification,” issued by the Council on Governmental Relations, stated that the 5-percent standard used by some universities was based on a 1979 interpretation by the prior Department of Health, Education, and Welfare stating “As a general rule of thumb, a change applicable to a given project or activity of 5% or more of an employee’s total effort would warrant an adjustment by the employee or the official.”

standards for the labor effort certification weaknesses identified. Comprehensive written policies and procedures are a critical element of a sound internal control structure for properly managing Vanderbilt's business functions, including its effort reporting systems and ensuring that those systems operate effectively and efficiently. This occurred because Vanderbilt's effort reporting policy did not include any formal procedures for the required OMB Circular A-21 evaluation. Thus, there was no guidance which clearly defined the required scope and objectives for evaluating Vanderbilt's effort reporting system to ensure its effectiveness and compliance with Federal standards.

Other Audit Matters:

Vanderbilt Lacks Adequate Segregation of Duties and Access Controls Within the Payroll Distribution System

While Vanderbilt has established policy and procedures for its labor effort reporting system, its internal control activities were not always sufficient to ensure that risks were minimized in achieving the University's goals and objectives for efficient and effective operations and full accountability for labor costs charged to Federal sponsored projects. Specifically, the audit identified a lack of segregation of duties over the Human Resources and Payroll functions for the payroll distribution and labor effort reporting system. The current payroll distribution system allows employees within the Payroll Department to make changes to payroll data such as salary rate, chargeable cost centers, and associated labor allocations; without proper independent review and approval. In addition, the risk is increased that inappropriate changes in such payroll information, most importantly employee salary rates, could go undetected due to a lack of edit controls and exception reports, which would aid in identifying improper or erroneous changes.

In addition, we found a lack of adequate controls over access and security of data maintained in Vanderbilt's payroll distribution and labor effort reporting system. Specifically, the University has not established policy and/or automated controls requiring routine password changes by Human Resources and Payroll Department personnel to access the system. Given the sensitive nature of human resource data and the high risk associated with payroll transactions, it is imperative for Vanderbilt to establish automated controls requiring all employees to periodically change their security codes to access such electronic information. The lack of periodic password changes increases the risk that unauthorized entry to the system could occur and result in sensitive personnel and payroll information being improperly changed and/or compromised.

Questioned Fringe Benefit Costs Charged

Vanderbilt overcharged a NSF grant \$518 for a graduate student's fringe benefit costs for the months of February, March, and June of 2006. Upon the University's subsequent review of the student's salary charges, the individual's status was retroactively changed to exempt the student's salary from FICA taxes. While the FICA tax withholding was reimbursed to the graduate student, the \$518 was never appropriately credited to the subject NSF grant. (see Appendix A)

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:

- 1.1 Work with the Vanderbilt officials to enhance its internal control structure to provide for an effective and timely labor certification system that reasonably reflects the actual effort/activity employees devote on sponsored projects. At a minimum, Vanderbilt should take the following corrective actions:
 - a. Institute formal written standards to improve the timeliness for review and approval of labor effort reports as follows:
 - i. Establish the maximum number of days after the end of the labor effort reporting period to compile and distribute the labor effort reports to certifying officials for review and approval.
 - ii. Establish the maximum number of days, after labor effort reports are distributed for certifying official review and approval.
 - iii. Establish a clear requirement for certifying officials to date the certification statement on PAF labor certifications.
 - iv. Establish procedures and time frames for reminder notices to follow-up on delinquent labor effort reports using an increasingly graduated scale to higher level management officials.
 - v. Assign specific Vanderbilt senior management officials, such as Department Chairs, accountability for timely PI review and approval of labor effort reports.

Vanderbilt Response

In the spring of 2008, Vanderbilt deployed a new Electronic Personnel Action Change (ePAC) system, a web-based effort reporting system developed by the University. Accordingly, Vanderbilt plans to update its Effort Reporting Policy to reflect the changes in the labor effort reporting process brought about by its ePAC implementation. The updated Policy will reflect a reasonable time frame for distributing and certifying effort reports and prescribe the protocol for follow-up on any delinquent effort certifications. As part of this process, central administration will work with senior research management officials, Department Chairs, and Business Officers to develop and implement accountability measures to enhance the effort reporting process on campus and to ensure Vanderbilt's compliance on effort reporting. Regarding the dating of certifications, the deployment of ePAC will automatically date stamp all certifications in the system when reviewed and approved.

Auditor's Comments

Once fully implemented, Vanderbilt's proposed corrective actions to formally update its Effort Reporting Policy should address the audit recommendations.

- b. Develop detailed written procedures and guidance documenting the process for using the multi-purpose PAF to both estimate the allocation of salary charges to sponsored projects on a prospective basis and to provide for the after-the-fact certification of the reasonableness of such salary charges.

Vanderbilt Response

With its new ePAC application, Vanderbilt no longer uses the PAF document to capture labor effort certifications. Thus, it is not necessary at this time to develop any procedures addressing the effort process in relation to the other functions performed by the PAF form.

Auditor's Comments

We agree that procedures are no longer required for the PAF document. However, Vanderbilt needs to develop clear written instructions for its new web-based ePAC system to ensure all users clearly understand their responsibilities for the different applications replacing the multi-purpose PAF document.

- c. Develop written procedures and guidance defining the typical instructional, research, and administrative work responsibilities included in the *institutional base salary* for various types of Vanderbilt employees, and which of those activities do not directly benefit Federal Awards and should not be charged to them.
- d. Develop written policy defining what percentage difference constitutes a "significant change" in work activity that is required to be entered into the payroll distribution system on a prospective basis.
- e. Develop written policy establishing a quantifiable "precision" or "tolerance" range of accuracy to be used for certifying the reasonableness of reported effort on labor confirmation reports versus actual effort worked on Federal projects.

Vanderbilt Response

As the OIG audit was in process, Vanderbilt's Provost Office issued written guidance in July 2007 that defined work responsibilities included in institutional base salary, what constituted a significant change in work activity, and what tolerance range of accuracy was acceptable for effort report certifications. The University will continue to work with the faculty, departments, and schools to ensure their understanding of these basic concepts so that sound effort certifications are collected.

Auditor's Comments

Vanderbilt actions taken were responsive to the audit recommendations. The guidance issued provides clarification on the work activities included in employee institutional base salaries and what activities should and should not be charged to Federal sponsored projects. Also, a 2.5 percent threshold was established for what constitutes a significant change in work activity requiring a change in the payroll distribution system and the tolerance range of accuracy for effort report certification. However, such important guidance clarifying Vanderbilt's effort report procedures and processes must be formally incorporated into its Effort Reporting Policy as part of the University's planned update, as discussed in recommendation 1.1.a. above.

- f. Define what steps a certifying official should perform to document that he/she had "suitable means of verification" to confirm that the work was actually performed and require that such documentation be maintained in award files.

Vanderbilt Response

Vanderbilt's policy allows for the supervisors to certify in those rare instances that the individual is not available and have the requisite knowledge to confirm the work performed. With ePAC implementation, the instances of someone other than the individual actually certifying their own effort is further decreased due to ePAC being a web-based application.

Auditor's Comments

We agree that only in rare instances is Vanderbilt senior-level supervisors required to certify labor effort reports when an employee and/or principal investigator is not available. However, in those instances, it is important that Vanderbilt have a process for documenting that the supervisor did, indeed, have requisite or first-hand knowledge to confirm the work performed. We believe that such a process is equally important in the new ePAC application; where documentation must be maintained to support an override of system controls to allow an alternate individual to certify an individual's labor effort report. Therefore, we re-affirm our audit recommendation.

- 1.2 Work with Vanderbilt officials to ensure that an adequate labor effort training program is established and provided to all officials involved in the effort reporting process. Such training should include a thorough discussion of the different aspects and requirements of the University's two different certification processes, specific responsibilities of certifying officials, and the various types of employee activities that do not directly benefit Federal Awards and should not, therefore, be charged to them.

Vanderbilt Response

Since the audit was conducted, Vanderbilt has engaged in numerous faculty and departmental administrator meetings around campus and presented sessions on compliance with Federal regulations as it relates to effort reporting rules and provided

details on the specifics of how labor effort is certified. These meetings will continue on an ongoing basis to emphasize the importance of the critical process for those working on Federal projects. Other training materials are also being developed to support the rollout of ePAC and to create several different types of mediums to house key information related to effort reporting to ensure that all impacted audiences are reached either by face-to-face meetings, web-based training tutorials, campus-wide memos, or policy updates and changes

Auditor's Comments

Vanderbilt's actions are responsive to the audit recommendation. We agree that it is essential that appropriate training materials, as well as instruction manuals, be developed to support the recent implementation of its new ePAC application so that all users clearly understand their labor effort responsibilities.

- 1.3 Establish formal monitoring policies and procedures and assign clear responsibility to a central Vanderbilt oversight office, such as the Office of Contract and Grant Administration, to ensure Academic Departments and other cognizant campus offices are administering their effort reporting responsibilities to ensure effective and timely certification of labor charges to sponsored projects that are fully compliant with established University and Federal requirements.

Vanderbilt Response

Vanderbilt will continue to develop and fine-tune the monitoring procedures for the oversight of effort reporting to reflect the change brought about with the deployment of ePAC. Reports are being designed and tested that will provide the central offices with tools to allow them oversight of the status of all effort reports generated. These reports will also provide the departments and schools the ability to monitor effort reports and to work with the central offices to ensure that all faculty and staff paid from Federal sources are in compliance with Vanderbilt's effort reporting policy.

Auditor's Comments

Vanderbilt's proposed corrective actions are generally responsive to the audit recommendation and its plans to develop ePAC management reports to oversee the timeliness of labor effort reports generated and certified will be an excellent monitoring tool. However, given the decentralized organizational structure of the University's labor effort reporting process, it is essential for a central Vanderbilt office to be assigned clear oversight responsibility to ensure University-wide compliance with its effort reporting policy, thus we reaffirm our audit recommendation in this regard.

- 1.4 Establish a formal written requirement for an independent internal evaluation of the payroll distribution and labor effort reporting system to ensure its effectiveness and full compliance with Federal, NSF, and University standards. Such a requirement should include procedures to ensure a systematic review that will identify reasons for any deficiencies and make appropriate recommendations, identify the specific Vanderbilt

office responsible for performing the evaluation, and how often such an evaluation should be conducted.

Vanderbilt Response

Vanderbilt's Internal Audit department performs assurance services to assist the University in meeting its oversight and operating responsibilities. Audit resources are generally allocated using a risk-based approach. Annually, Internal Audit selects a sampling of departments across campus for review, and part of the departmental reviews involve the labor effort process for those individuals paid from Federal sources. Vanderbilt will continue to include the payroll distribution and labor effort reporting system in the annual risk assessment process performed by Internal Audit. The frequency of the audit will be based on criteria reviewed during the process such as changes to the effort or payroll systems, changes in regulations, changes in key personnel, feedback received from senior management, and the amount of time elapsed since the last review.

Auditor's Comments

We agree that it is appropriate for Vanderbilt's Internal Audit department to perform independent evaluations of the effectiveness of the University's labor effort reporting system and to use a risk-based approach in determining the periodic need for such reviews. However, Vanderbilt needs to establish a formal written requirement in its Effort Reporting Policy for such an evaluation with assigned responsibility to the Internal Audit department, as specified in the audit recommendation.

- 1.5 Establish appropriate internal control procedures to ensure adequate segregation of duties and mandatory periodic password changes within the Human Resource and Payroll functions.

Vanderbilt Response

With the full implementation of the ePAC system, payroll data such as salary rate, chargeable cost centers, and associated labor allocations will be electronically entered at the department level with electronic approvals as needed to achieve the proper controls. This should eliminate the need for the Payroll department making such changes. Within the next year, Vanderbilt will implement a new electronic security password system which will require periodic password change requirement.

Auditor's Comments

When fully implemented, Vanderbilt's proposed corrective actions should address the audit recommendation.

- 1.6 Resolve the \$31,325 in total questioned salaries costs and associated fringe and indirect costs for improper charges for employee activity not directly benefiting NSF grants. (see Appendix A)

Vanderbilt Response

Vanderbilt management will coordinate with NSF to resolve all questioned costs. The costs related to the FICA Tax overcharge have already been removed and the costs refunded to the appropriate NSF entity.

Auditor's Comments

NSF's Office of Institution and Award Support should work with Vanderbilt to resolve the subject questioned costs.

Finding 2: Improvements Needed to Properly Report Uncompensated Faculty Labor Effort on Sponsored Projects

Federal regulations require a payroll distribution system that will “reasonably reflect the activity for which individuals are compensated by the institution.” The system must encompass the time and effort expended by employees on both sponsored projects and all other activities on an integrated basis. Further, a January 2001 OMB Clarification Memorandum⁸ provides additional guidance for cost sharing requirements for faculty effort on sponsored projects. Specifically, the OMB Memorandum clarifies that faculty effort on organized research includes: (i) PI salary and wages directly charged to sponsored projects, (ii) PI effort required as mandatory cost sharing, and (iii) PI effort pledged and quantified as “voluntary committed cost sharing” in a proposal. Voluntary committed cost sharing is defined as effort not required by the sponsor, but proposed in the sponsored project narrative and/or budget with no corresponding funding requested. [REDACTED]

Consistent with the OMB Clarification Memorandum, our review of the 15 faculty members, included in our 30 sample employees, found that Vanderbilt’s labor effort reporting system properly tracked and reported voluntary committed cost shared effort pledged by PIs in NSF grant proposals. However, the University did not appropriately report committed cost sharing when NSF funded PI effort on grants was replaced with cost shared effort. Specifically, two of the 15 faculty members reviewed (13 percent) charged \$9,161 less salary to two NSF grants for funded PI effort than included in the award budget proposals (see Appendix B). Such “uncharged PI labor effort” represented voluntary committed cost sharing and must be properly accounted for in Vanderbilt’s labor effort reporting system. The unreported amount of such committed cost sharing represented about 3 percent of the total FY 2006 salaries of \$298,646 charged by the 15 faculty members to NSF grants. Also, one of the two PIs had an additional NSF grant, with no faculty salary support, where Vanderbilt did not properly estimate or impute an amount of PI effort to [REDACTED].

The following example illustrates where Vanderbilt did not properly report committed cost sharing of PI effort on NSF grants, as required by the OMB Clarification Memorandum:

- A PI had four NSF grants active during the summer of 2005. [REDACTED] summer labor effort report showed one month’s salary charged to each of two NSF awards and the third summer month’s salary charged to a University-funded research project. For the remaining two NSF awards, the faculty member had one summer month committed in

⁸ OMB Memorandum M-01-06, dated January 5, 2001, *Clarification of OMB A-21 Treatment of Voluntary Uncommitted Cost Sharing and Tuition Remission*.

⁹ [REDACTED]. Paragraph B.1.b., *Definition of terms*, of OMB Circular A-21 states that “Organized research means all research and development activities of an institution that are separately budgeted and accounted for.”

the budget proposal, but did not charge any summer salary to this award. The uncharged PI effort of one month's salary or \$5,556 should have been reported as committed cost sharing. In addition, for the fourth NSF grant, without any direct or cost shared PI effort, an imputed amount should have been calculated and included in the organized research base.

Without accurate reporting of committed cost sharing of PI effort, Vanderbilt is unable to validate to NSF that the two PIs provided the level of effort explicitly committed in the two grant proposals to accomplish project objectives. NSF expected these faculty members to provide the amount of effort that the individuals have agreed to contribute in their original grant proposals. It is important for the Federal Government to be able to validate that a sufficient level of PI effort was committed to a sponsored project that is commensurate with the complexity and nature of the research and dollar amount of grant funding. As such, accurate labor effort reports are essential to document both direct Federally-funded and voluntary committed effort devoted by faculty members to sponsored projects.

In addition, the lack of accurate reporting of committed cost sharing of PI effort and the absence of properly imputing an amount for donated PI effort to sponsored projects, resulted in NSF potentially assuming a disproportionate share of Vanderbilt's indirect costs. Specifically, when such amounts are not accurately quantified and included in the organized research base, the indirect cost rate charged to Federal grants would be higher because [REDACTED]

Specifically, for the 15 faculty members reviewed, we found that at least \$9,161 of additional faculty voluntary committed cost sharing for two PIs should have been reported and [REDACTED]. Given that (i) the two PIs represented 13 percent of the PIs reviewed and (ii) the \$9,161 constituted 3 percent of their total FY 2006 NSF salary charges, the total potential PI salary [REDACTED] research base could be significant for the over 2,800 full-time Vanderbilt faculty members.

These weaknesses occurred because Vanderbilt's Policy for Cost Sharing on Sponsored Projects did not provide guidance on how to address situations when Federal funded PI effort on sponsored grants was replaced with cost shared effort. Specifically, it did not establish procedures addressing how PI effort should be documented in its labor effort reporting system when faculty members originally committed a certain amount of effort in their grant proposal submission, but subsequently decided only to charge partial or no salary directly to the sponsored projects. However, NSF and other sponsoring agencies have an expectation that the PIs would fulfill such effort commitments necessary to accomplish the projects' research objectives. If the

University cannot document that such committed PI effort was actually provided, then Federal regulations require Vanderbilt to obtain sponsoring agency approval in advance when there is more than a 25 percent reduction¹⁰ in PI time devoted to the grants.

In addition, Vanderbilt had not performed adequate monitoring and oversight to ensure that PIs and Co-PIs were complying with the University's requirement, specified in its cost sharing policy, that some level of committed faculty effort must be provided to all Federal sponsored projects; either in the form of a direct salary charge or voluntary committed cost sharing. As such, Vanderbilt had not established a process to identify Federal awards without some level of committed faculty effort [REDACTED]

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 ensure that Vanderbilt implements the following recommendations:

- 2.1 Establish formal policy and institutional processes to provide for proper tracking and reporting of cost sharing commitments created by replacing funded PI effort on sponsored projects with cost shared effort.

Vanderbilt Response

Vanderbilt will amend its cost sharing policy to provide for the proper tracking and reporting of cost share commitments created by replacing funded PI effort on sponsored projects with cost shared effort.

Auditor's Comments

Vanderbilt's proposed corrective action is responsive and when implemented should fully address the audit recommendation.

- 2.2 Establish formal policy and institutional processes for estimating the amount of faculty effort to include in the organized research base for Federally-sponsored projects without some level of committed faculty effort. Ensure the methodology for calculating the estimated amount is supported by adequate documentation.

Vanderbilt Response

Vanderbilt will provide guidance and monitor to ensure faculty include some level of effort over the life of any Federally- sponsored research project, either in the form of a direct charge to the project or as committed cost sharing. It will also require that PIs include a minimum percentage of effort on all Federally-sponsored research proposals. This effort will be tracked in accordance with our effort reporting policy.

Auditor's Comments

Vanderbilt's alternate proposed action to require PIs to include a minimum level of effort in all Federal research proposals and monitor such effort commitments during the life of the grant appropriately addresses the intent of the audit recommendation. When such guidance is issued and properly implemented, such actions should fully address the audit recommendation.

Appendix A

Schedule of FY 2006 Questioned Salaries and Wages

Employee Effort Spent on Other Research Activities					
Sample Number	Award Number	Salary Costs	Fringe Benefits	Indirect Costs	Total
10	████████	\$2,833	\$590	\$1,780	\$5,203
10	████████	\$2,833	\$590	\$1,780	\$5,203
28	████████	\$5,207	\$0	\$2,708	\$7,915
	<u>Subtotal</u>	\$10,873	\$1,180	\$6,268	\$18,321
Employee Effort Spent on Unallowable Administrative or Grant Proposal Writing Activities					
Sample Number	Award Number	Salary Costs	Fringe Benefits	Indirect Costs	Total
2	████████	\$1,812	\$377	\$1,138	\$3,327
29	████████	\$2,787	\$580	\$1,751	\$5,117
30	████████	\$2,483	\$516	\$1,560	\$4,559
	<u>Subtotal</u>	\$7,082	\$1,473	\$4,449	\$13,004
Employee FICA Tax Overcharged					
Sample Number	Award Number	Salary Costs	Fringe Benefits	Indirect Costs	Total
9	████████	\$0	\$518	\$269	\$787
TOTAL QUESTIONED COSTS		\$17,955	\$2,653	\$10,717	\$31,325

Note: Vanderbilt does not assess fringe benefits to graduate student salaries charged to Federal awards.

Appendix B

Schedule of Faculty with Uncompensated Effort on NSF Grants Not Properly Reported in FY 2006

Sample Number	NSF Award #	PI Person Months Committed in Budget Proposal		Uncharged PI Labor Effort	NSF Grants With No PI Effort Reported
		Academic	Summer		
10	██████████	0	1	\$5,556	
	██████████	0	0		X
21	██████████	0	2	\$3,605	
			TOTAL	\$9,161	1 grant

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September 4, 2008

Mr. [REDACTED]
Regis Associates, PC
Management Consultants and
Certified Public Accountants
1400 Eye Street, Suite 425
Washington, D.C. 20005

Dear [REDACTED]

Below are Vanderbilt's comments on the Draft Audit Report of Labor Effort Accounting and Reporting System of Vanderbilt University for your consideration and inclusion in the final report.

Finding 1: Internal Control Improvements Needed in Payroll Distribution and Effort Reporting System

Federal grant requirements provide that salaries and wages charged to sponsored projects be supported by labor effort reports signed and approved by the employees or officials who are in a position to know whether the work were performed. Such reports are required to 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 on sponsored projects. Although federal requirements do not specify when a labor effort report should be completed, university officials should provide the after-the-fact confirmation as close to the end of the reporting period as possible to ensure its reliability.

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:

- 1.1 Work with the Vanderbilt officials to enhance its internal control structure to provide for an effective and timely labor certification system that reasonably reflects the actual effort/activity employees devote on sponsored projects. At a minimum, Vanderbilt should take the following corrective actions:
 - a. Institute formal written standards to improve the timeliness for review and approval of labor effort reports as follows:
 - i. Establish the maximum number of days after the end of the labor effort reporting period to compile and distribute the labor effort reports to certifying officials for review and approval.
 - ii. Establish the maximum number of days after labor effort reports are distributed for certifying official to review and approval.
 - iii. Establish a clear requirement for certifying officials to date the certification statement on PAF labor certifications.
 - iv. Establish procedures and time frames for reminder notices to follow-up on delinquent labor effort reports using an increasingly graduated scale to higher level management officials.
 - v. Assign specific Vanderbilt senior management officials, such as Department Chairs, accountability for timely PI review and approval of labor effort reports.

VU Response to 1.1a i-v

Vanderbilt's Policy will be updated to reflect the changes in the effort reporting process brought about by the campus deployment of ePAC, the web-based effort reporting system developed at Vanderbilt. The updated policy will reflect a reasonable time frame for distributing and certifying effort reporting periods and prescribe the protocol for follow-up on any delinquent effort certifications. As part of this process, central administration will work with senior research management officials, department chairs and business officers to develop and implement accountability measures to enhance the effort reporting process on campus to ensure and enhance Vanderbilt's compliance on effort reporting. Regarding the dating of certifications, the deployment of ePAC will automatically date stamp all certifications in the system when certified by the individual.

- b. Develop detailed written procedures and guidance documenting the process for using the multi-purpose PAF to both estimate the allocation of salary charges to sponsored projects on a prospective basis and to provide for the after-the-fact certification of the reasonableness of such salary charges.

VU Response to 1.1b

Vanderbilt no longer uses the PAF document to capture the effort certifications so it is not necessary at this time to develop any procedures addressing the effort process in relation to the other functions performed by the PAF form. For monthly paid individuals, they will certify their effort via the ePAC web-based system going forward.

- c. Develop written procedures and guidance defining the typical instructional, research, and administrative work responsibilities included in the *institutional base salary* for various types of Vanderbilt employees and which of those activities do not directly benefit Federal Awards and should not be charged to them.
- d. Develop written policy defining what percentage difference constitutes a “significant change” in work activity that is required to be entered into the payroll distribution system on a prospective basis.
- e. Develop written policy establishing a quantifiable “precision” or “tolerance” range of accuracy to be used for certifying the reasonableness of reported effort on labor confirmation reports versus actual effort worked on Federal projects.

VU Response to 1.1c - e

Vanderbilt’s Provost Office issued written guidance on defining work responsibilities included in the institutional base salary, what constitutes a significant change in work activity, and the tolerance range of accuracy on July 24, 2007. This document was submitted to the audit team once it was available and also resides on the Office of Contract and Grant Accounting website. Vanderbilt will continue to work with the faculty, departments and schools to ensure their understanding of these basic concepts so that sound effort certifications are collected.

- f. Define what steps a certifying official should perform to document that he/she had “suitable means of verification” to confirm that the work was actually performed and require that such documentation be maintained in award files.

VU Response to 1.1f

Vanderbilt’s policy allows for the supervisors to certify in those rare instances that the individual is not available and have the requisite knowledge to confirm the work performed. With the implementation of ePAC, the instances of someone other than the individual him/herself actually certifying their own effort is further decreased due to ePAC being a web-based application.

- 1.2 Work with Vanderbilt officials to ensure that an adequate labor effort training program is established and provided to all officials involved in the effort reporting process. Such training should include a thorough discussion of the different aspects and requirements of the University's two different certification processes, specific responsibilities of certifying officials, and the various types of employee activities that do not directly benefit Federal Awards and should not, therefore, be charged to them.

VU Response to 1.2

Since the audit was conducted, Vanderbilt has engaged in numerous faculty and departmental administrator meetings around campus and presented sessions on compliance with federal regulations as it relates to effort reporting rules and provided details on the specifics of how effort is certified here at Vanderbilt. These meetings will continue on an ongoing basis to emphasize the importance of the critical process for those working on federal projects. Other training materials are also being developed to support the rollout of ePAC and to create several different types of mediums to house key information related to effort reporting to ensure that all impacted audiences are reached either by face-to-face meetings, web-based training tutorials, campus-wide memos or policy updates and changes.

The Vanderbilt Medical Center has implemented a formal effort compliance program in March 2006. This included hiring additional staff to provide an increased formal program for effort training of faculty and staff. This program also included the creation of Faculty Research Compliance Officers for each major department who went through a series of training sessions with faculty and staff, including lab personnel, on a variety of compliance issues.

- 1.3 Establish formal monitoring policies and procedures and assign clear responsibility to a central Vanderbilt oversight office, such as the Office of Contract and Grant Administration, to ensure Academic Departments and other cognizant campus offices are administering their effort reporting responsibilities to ensure effective and timely certification of labor charges to sponsored projects that are fully compliant with established University and Federal requirements.

VU Response to 1.3

Please note 1.2 includes the oversight process and central support for federal compliance. In addition, Vanderbilt will continue to develop and fine-tune the monitoring procedures for the oversight of effort reporting to reflect the change brought about with the deployment of ePAC. Reports are being designed and tested that will provide the central offices with tools to allow them oversight of the status of all effort reports generated.

These reports will also provide the departments and schools the ability to monitor effort reports and to work with the central offices to ensure that all faculty and staff paid from federal sources are in compliance with Vanderbilt's effort reporting policy.

- 1.4 Establish a formal written requirement for an independent internal evaluation of the payroll distribution and labor effort reporting system to ensure its effectiveness and full compliance with Federal, NSF, and University standards. Such a requirement should include procedures to ensure a systematic review that will identify reasons for any deficiencies and make appropriate recommendations, identify the specific Vanderbilt office responsible for performing the evaluation, and how often such an evaluation should be conducted.

VU Response to 1.4

Vanderbilt's Internal Audit department performs assurance services to assist the University in meeting its oversight and operating responsibilities. Audit resources are generally allocated using a risk-based approach. Annually, Internal Audit selects a sampling of departments across campus for review and part of the departmental reviews do involve the labor effort process for those individuals paid from federal sources. As part of the Internal Audit plan, reviews of payroll distributions and effort reporting are conducted with individuals every year which entail interviews on their effort components, such as course load, committee work, sponsored projects, etc. and then they compile the data to be able to reconcile and confirm the accuracy of the 100% effort of each individual. Vanderbilt will continue to include the payroll distribution and labor effort reporting system in the annual risk assessment process performed by Internal Audit. The frequency of the audit will be based on criteria reviewed during the process such as changes to the effort or payroll systems, changes in regulations, changes in key personnel, feedback received from senior management, and the amount of time elapsed since the last review.

- 1.5 Establish appropriate internal control procedures to ensure adequate segregation of duties and mandatory periodic password changes within the Human Resource and Payroll functions.

VU Response to 1.5

With the full implementation of the ePac system, payroll data such as salary rate, chargeable cost centers and associated labor allocations will be electronically entered at

the department level with electronic approvals as needed to achieve the proper controls. This should eliminate the need for Payroll making such changes.

Within the next year, Vanderbilt will implement a new electronic security password system which will require periodic password change requirement.

- 1.6 Resolve the \$31,325 in total questioned salaries costs and associated fringe and indirect costs for improper charges for employee activity not directly benefiting NSF grants.

VU Response to 1.6

Vanderbilt management will coordinate with NSF Division of Grants and Agreements to resolve all questioned costs. The costs related to the FICA Tax overcharge have already been removed and the costs refunded to the appropriate NSF entity.

Finding 2: Improvements Needed to Properly Report Uncompensated Faculty Labor Effort on Sponsored Projects

Federal regulations require a payroll distribution system that will “reasonably reflect the activity for which individuals are compensated by the institution.” The system must encompass the time and effort expended by employees on both sponsored projects and all other activities on an integrated basis. Further, a January 2001 OMB Clarification Memorandum provides additional guidance for cost sharing requirements for faculty effort on sponsored projects. Specifically, the OMB Memorandum clarifies that faculty effort on organized research includes: (i) PI salary and wages directly charged to sponsored projects, (ii) PI effort required as mandatory cost sharing, and (iii) PI effort pledged and quantified as “voluntary committed cost sharing” in a proposal. Voluntary committed cost sharing is defined as effort not required by the sponsor, but proposed in the sponsored project narrative and/or budget with no corresponding funding requested.



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 ensure that Vanderbilt implements the following recommendations:

- 2.1 Establish formal policy and institutional processes to provide for proper tracking and reporting of cost sharing commitments created by replacing funded PI effort on sponsored projects with cost shared effort.

VU Response to 2.1

Vanderbilt will amend our cost sharing policy to provide for the proper tracking and reporting of cost share commitments created by replacing funded PI effort on sponsored projects with cost shared effort.

- 2.2 Establish formal policy and institutional processes for estimating the amount of faculty effort to include in the organized research base for Federally-sponsored projects without some level of committed faculty effort. Ensure the methodology for calculating the estimated amount is supported by adequate documentation.

VU Response to 2.2

Vanderbilt will monitor and provide guidance to ensure that faculty includes some level of effort over the life of any federally sponsored research project, either in the form of a direct charge to the project or as committed cost sharing. Vanderbilt will also require that PI's include a minimum percentage of effort on all federally sponsored research proposals. This effort will be tracked in accordance with our effort reporting policy. The Medical Center currently requires that PI's include a minimum percentage of effort on all federally sponsored research proposals.

Thank you for the opportunity to respond to the findings that were identified in your audit. If you have any questions related to the responses provided, please contact me at 615-343-6658.

Sincerely,



Kathy Leone, NSF OIG Audit Manager
Michael Kuklok, NSF OIG Supervisory Auditor