

NATIONAL SCIENCE FOUNDATION
4201 Wilson Boulevard
ARLINGTON, VIRGINIA 22230



OFFICE OF
INSPECTOR GENERAL

MEMORANDUM

Date: **MAR 4 - 2011**

To: Mary F. Santonastasso, Director
Division of Institution and Award Support

Karen Tiplady, Director
Division of Grants and Agreements

From: Dr. Brett M. Baker 
Assistant Inspector General for Audit

Subject: Audit Report No. OIG-11-01-002
William Marsh Rice University

Attached is the final audit report, prepared by Mayer Hoffman McCann P.C., an independent public accounting firm, on the audit of NSF Award Numbers EEC-0647452, DGE-0504425, HRD-0450363, and OISE-0530220 awarded to William Marsh Rice University (Rice University). The audit covers NSF-funded costs claimed from October 1, 2004 to September 30, 2009, totaling approximately \$13.8 million in costs claimed and \$4 million in claimed cost share for these four awards.

Rice University was selected for audit because of large amounts of NSF funding that are passed-through to other organizations; high dollar value and number of NSF awards; collaborative nature of many of the NSF awards; deficiencies reported in NSF's 2006 Desk Review and Rice University's past OMB Circular A-133 single audits; and because NSF is Rice University's cognizant federal agency, responsible for ensuring that costs are claimed in accordance with NSF and federal regulations.

Overall, the auditors determined that the costs claimed by Rice University and its subawardees under the NSF award numbers EEC-0647452, DGE-0504425, HRD-0450363, and OISE-0530220 appear fairly stated and are allowable, allocable, and reasonable for the NSF awards. In addition, the issues and findings identified in NSF's 2006 Desk Review Report and Rice University's 2007 and 2008 OMB Circular A-133 single audit reports, concerning the need to improve accounting policies and equipment records, have been resolved. However, the auditors

noted two compliance and internal control deficiencies in Rice University's financial and award management practice that could impact current and future NSF awards. Specifically:

- Rice University did not adequately monitor subaward costs, which included four subawards amounting to over \$1.3 million in claimed costs. Although Rice University established written subaward monitoring policies and procedures prior to the fall of 2009, Rice University did not document the results of its risk assessments on potential subawardees at the pre-subaward stage. In addition, Rice University did not have a formal process that would provide risk assessments on subawardees on an on-going basis at the post-subaward stage and no rationale was documented to support the level of monitoring activities to be conducted on the subawardees. Rice University's policies and procedures should be strengthened to provide greater oversight in the post-subaward stage to ensure that the subaward costs claimed are reasonable, allowable, and allocable to its current and future NSF awards.
- Rice University did not fully comply with the reporting requirements of the Bayh-Dole Act and NSF for invention disclosure and patent application. The auditors reviewed the invention disclosures and patent applications of six inventions developed under NSF Award No. EEC-0647452. One invention was disclosed to NSF 104 days late and one provisional patent application did not indicate the NSF award number or NSF as the federal funding agency. Rice University has established policies and procedures on invention disclosure and patent application. However, due to personnel turnover and miscommunication between departments, the policies and procedures could not be effectively implemented to ensure compliance with the relevant provisions. As a result of the non-compliance, NSF may not have current information regarding all inventions and patents developed, which is important for evaluating award progress and reporting research highlights to Congress.

While we did not assess the impact of these noncompliance and internal control deficiencies on Rice University's other NSF awards, we believe the same deficiencies may exist under those programs and, if not corrected, could impact future NSF awards.

To address these compliance and internal control deficiencies, the auditors recommend that the Director of NSF's Division of Institution and Award Support (DIAS) address and resolve the following recommendations made to Rice University. It is recommended that Rice University (1) develop and implement a formal on-going post-subaward risk assessment process, which will include an on-going risk-based monitoring approach to better ensure that costs charged to NSF awards are reasonable, allowable, and allocable; and (2) ensure that its revised policies and procedures on invention disclosure and patent application are adequate, comply with NSF and Federal regulations, and are properly implemented. In addition, Rice should take a proactive role to educate research personnel on federal awards with potential inventions regarding the Bayh-Dole Act and NSF invention reporting and disclosure requirements.

Rice University, in its response to the draft report dated January 25, 2011, generally agreed with the findings, but stated that, while there are areas for improvement in its subaward monitoring processes, the University does not agree with the level of the finding as a significant deficiency,

because there were no questioned costs. Rice University listed specific post-award actions its personnel can undertake to raise the level of subawardee oversight it performs and indicated it was preparing new policies and procedures to inform personnel of when additional subawardee monitoring activities are warranted. The University agreed with the Bayh-Dole finding, and is revising its training to educate research personnel on the requirements. Rice University's response is included in its entirety in Appendix A.

The findings should not be closed until NSF determines that all recommendations have been adequately addressed and the proposed corrective actions have been satisfactorily implemented.

We are providing copies of this memorandum to the Office Director of the Office of International Science and Engineering (OISE), the Division Director of Human Resources Development (HRD) and Graduate Education (DGE), and the Division Director of Engineering, Education, and Centers (EEC). The responsibility for audit resolution rests with the Division of Institution and Award Support, Cost Analysis and Audit Resolution Branch (CAAR). Accordingly, we ask that no action be taken concerning the report's findings without first consulting CAAR at 703-292-8244.

OIG Oversight of Audit

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

- Reviewed Mayer Hoffman McCann's approach and planning of the audit;
- Evaluated the qualifications and independence of the auditors;
- Monitored the progress of the audit at key points;
- Coordinated periodic meetings with Mayer Hoffman McCann and NSF officials, as necessary, to discuss audit progress, findings, and recommendations;
- Reviewed the audit report, prepared by Mayer Hoffman McCann to ensure compliance with Government Auditing Standards; and
- Coordinated issuance of the audit report.

Mayer Hoffman McCann is responsible for the attached auditor's report on Rice University and the conclusions expressed in the report. We do not express any opinion on the Schedules of Award Costs, internal control, or conclusions on compliance with laws and regulations.

We thank your staff for the assistance that was extended to our auditors during this audit. If you have any questions regarding this report, please contact Jannifer Jenkins at 703-292-4996.

Attachment

cc: Larry H. Weber, Office Director, ENG/OISE
James H. Lightbourne, Division Director, EHR/DGE and HRD
Theresa Maldonado, Division Director, ENG/EEC

WILLIAM MARSH RICE UNIVERSITY
6100 MAIN STREET
HOUSTON, TEXAS 77005

NATIONAL SCIENCE FOUNDATION
AWARD NUMBERS
EEC-0647452; DGE-0504425; HRD-0450363 AND OISE-0530220

FINANCIAL AUDIT OF FINANCIAL SCHEDULES AND
INDEPENDENT AUDITORS' REPORT
FROM OCTOBER 1, 2004 TO SEPTEMBER 30, 2009

MAYER HOFFMAN McCANN P.C.
Certified Public Accountants
2301 Dupont Drive, Suite 200
Irvine, California 92612

EXECUTIVE SUMMARY

The National Science Foundation (NSF) Office of Inspector General (OIG), engaged Mayer Hoffman McCann P.C. to perform an audit on \$13,858,056 in costs claimed as reported on the September 30, 2009 Federal Financial Report (FFR) submitted to NSF by William Marsh Rice University ("Rice University") on NSF award numbers EEC-0647452, DGE-0504425, HRD-0450363 and OISE-0530220 and \$4,087,762 of claimed cost share for these awards.

Rice University, located in Houston, Texas, is a private not-for-profit higher education research institution. As of September 2009, Rice University had approximately 203 active NSF awards totaling over \$109 million. Nineteen of those awards are funded at amounts over \$1 million each. Rice University was selected for audit because of large amounts of NSF funding that are passed-through to other organizations; high dollar value and number of NSF awards; collaborative nature of many of the NSF awards; deficiencies reported in NSF's 2006 Desk Review and Rice University's past OMB Circular A-133 single audits; and because NSF is Rice University's cognizant federal agency, responsible for ensuring that costs are claimed in accordance with NSF and federal regulations.

The purpose of this engagement was to determine whether the costs and cost share claimed by Rice University and its subawardees for the NSF awards audited appear fairly stated in the Schedules of Award Costs and to identify weaknesses in Rice University's internal control over financial reporting that could have a direct and material effect on Rice University's ability to properly administer, account for, and monitor its NSF awards. In addition, we were to determine whether Rice University adequately monitors its subawardees and ensures that previously identified audit recommendations have been satisfactorily addressed and implemented.

We determined that the costs and cost share claimed by Rice University and its subawardees under the NSF award numbers EEC-0647452, DGE-0504425, HRD-0450363 and OISE-0530220 appear fairly stated and are allowable, allocable, and reasonable for the NSF awards. In addition, the issues/findings identified in NSF's 2006 Desk Review Report and Rice University's 2007 and 2008 OMB Circular A-133 single audit reports, concerning the need to improve accounting policies and equipment records, have been resolved. However, we noted two compliance and internal control deficiencies in Rice University's financial and award management practice that could impact current and future NSF awards. Specifically:

- Rice University did not adequately monitor subaward costs, which included four subawards amounting to over \$1.3 million in claimed costs. Although Rice University established written subaward monitoring policies and procedures, prior to the Fall of 2009, Rice University did not document the results of its risk assessments on potential subawardees at the pre-subaward stage. In addition, Rice University did not have a formal process that would provide risk assessments on subawardees on an on-going basis at the post-subaward stage and no rationale was documented to support the level of monitoring activities to be conducted on the subawardees. Rice University's policies and procedures should be strengthened to provide greater oversight in the post-subaward stage to ensure that the subaward costs claimed are reasonable, allowable, and allocable to its current and future NSF awards.
- Rice University did not fully comply with the reporting requirements of the Bayh-Dole Act and NSF for invention disclosure and patent application. We reviewed the invention disclosures and patent applications of six inventions developed under NSF Award No.

EEC-0647452. We noted that one invention was disclosed to NSF 104 days late and one provisional patent application did not indicate the NSF award number or NSF as the federal funding agency. Rice University has established policies and procedures on invention disclosure and patent application. However, due to personnel turnover and miscommunication between departments, the policies and procedures could not be effectively implemented to ensure compliance with the relevant provisions. As a result of the non-compliance, NSF may not have current information regarding all inventions and patents developed, which is important for evaluating award progress and reporting research highlights to Congress. In addition, failure to comply with the Bayh-Dole Act and implement provisions requiring disclosure of inventions to NSF could lead to the University's forfeiture of title of inventions developed under the NSF awards under some circumstances.

While we did not assess the impact of these noncompliance and internal control deficiencies on Rice University's other NSF awards, we believe the same deficiencies may exist under those programs and, if not corrected, could impact future NSF awards.

To address these compliance and internal control deficiencies, the auditors recommend that the Director of NSF's Division of Institution and Award Support (DIAS) address and resolve the following recommendations made to Rice University. It is recommended that Rice University (1) develop and implement a formal on-going post-subaward risk assessment process, which will include an on-going risk-based monitoring approach to better ensure that costs charged to NSF awards are reasonable, allowable, and allocable; and (2) ensure that its revised policies and procedures on invention disclosure and patent application are adequate, comply with NSF and Federal regulations, and are properly implemented. In addition, Rice should take a proactive role to educate research personnel on federal awards with potential inventions regarding the Bayh-Dole Act and NSF invention reporting and disclosure requirements.

Rice University responded to the draft report on January 25, 2011. In its response, Rice University agreed that there are opportunities to improve the documentation of its subaward policies and procedures and monitoring steps and agreed to take steps to strengthen the documentation of the monitoring activities.

[REDACTED] Rice University stated that its subaward monitoring policies and procedures in effect during the audit period met the requirements of OMB Circular A-133 and did provide reasonable assurance that Rice University's subawardees administered Federal awards in compliance with laws, regulations and the provisions of the subaward agreements. Rice University concurred with the finding on non-compliance with the Bayh-Dole Act and NSF provisions on invention disclosure and patent application, and agreed to implement our recommendations.

The findings in this report should not be closed until NSF has determined that all the recommendations have been adequately addressed and the proposed corrective actions have been satisfactorily implemented. Rice University's response to each finding is summarized within the report and included in its entirety in Appendix A of this report.

For a complete discussion of audit findings, refer to the Report on Internal Control Over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Schedules Performed in Accordance with *Government Auditing Standards*.

WILLIAM MARSH RICE UNIVERSITY

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Acronyms

CFR	Code of Federal Regulations
NSF	National Science Foundation
OIG	Office of Inspector General
OMB	Office of Management and Budget
OSR	Office of Sponsored Research
RCA	Research and Cost Accounting
Rice University	William Marsh Rice University
PI	Principal Investigator
OTT	Office of Technology Transfer

INTRODUCTION

BACKGROUND

We audited funds awarded by the National Science Foundation (NSF) to William Marsh Rice University (“Rice University”) under award numbers EEC-0647452, DGE-0504425, HRD-0450363 and OISE-0530220 for the period October 1, 2004 to September 30, 2009. Rice University, as a Federal awardee, is required to follow the cost principles specified in 2 CFR 220, *Cost Principles for Educational Institutions* (formerly Office of Management and Budget (OMB) Circular A-21), and the Federal administrative requirements contained in 2 CFR 215 - *Uniform Administrative Requirements for Grants and Agreements with Institutions of Higher Education, Hospitals, and Other Non-Profit Organizations* (formerly OMB Circular A-110).

Rice University, located in Houston, Texas, is a private not-for-profit higher education institution under Section 501(c) (3) of the Internal Revenue Code. According to its website, Rice University is a private research university aspiring to path breaking research, unsurpassed teaching, and contributions to the betterment of the world. It seeks to fulfill this mission by cultivating a diverse community of learning and discovery that produces leaders across the spectrum of human endeavor.

Rice University was selected for audit because of large amounts of NSF funding that are passed-through to other organizations; high dollar value and number of NSF awards; the collaborative nature of many of the NSF awards; deficiencies reported in NSF’s 2006 Desk Review and Rice University’s OMB Circular A-133 single audits for FYs 2007 and 2008; and because NSF is Rice University’s cognizant federal agency, responsible for ensuring that costs are claimed in accordance with NSF and federal regulations.

As of September 2009, Rice University had 203 active NSF awards totaling over \$109 million. Rice University’s NSF portfolio of awards includes groups of universities, non-profit organizations, and contractors working together on a common initiative with one or more of the organizations functioning as the coordinator of all financial administration. All four awards selected for audit are funded at amounts over \$1 million and three of them have subawards with other higher education institutions, where Rice University is the principal management entity to ensure that the programmatic objectives are accomplished and the financial award terms and conditions are met.

Description of the NSF awards we audited is as follows:

Award EEC-0647452 – NSEC: Center for Biological and Environmental Nanotechnology (CBEN). NSF awarded Cooperative Agreement Award No. EEC-0647452 to Rice University for the period October 1, 2006 to September 30, 2011 in the amount of \$9,753,646, with a cost sharing requirement of \$1,176,075. NSF funds are used for the Nanoscale Science and Engineering Center (NSEC), the Center for Biological and Environmental Nanotechnology (CBEN) and support the goal to discover and develop nanoparticles that enable new medical and environmental technologies. Located at Rice University, CBEN engages in collaborative, interdisciplinary research activities with more than 20 participants from diverse departments. There is one subawardee, Georgia Institute of Technology (budgeted amount: \$205,833), under the award. The award has patents and inventions reported and Rice University is required to comply with the Bayh-Dole Act and NSF reporting requirements.

Rice University is responsible for overall management of the project. Cumulative disbursements for award number EEC-0647452 reported to NSF through September 30, 2009 were \$6,797,525. Cost share claimed totaled \$987,147.

Award DGE-0504425 – IGERT: Nanophotonics: Fundamental and Applications in Emerging Technologies (IGERT). NSF awarded Grant Award No. DGE-0504425 to Rice University for the period June 15, 2005 to May 31, 2010 in the amount of \$3,086,640, with a cost sharing requirement of \$485,100. This Integrative Graduate Education and Research Training (IGERT) award supports the establishment of a unique multidisciplinary graduate training program in Nanophotonics at Rice University.

Cumulative disbursements for award number DGE-0504425 reported to NSF through September 30, 2009 were \$2,053,383. Cost share claimed totaled \$447,776.

Award HRD-0450363 – Rice-Houston Alliance for Graduate Education and the Professoriate (AGEP). NSF awarded Cooperative Agreement Award No. HRD-0450363 to Rice University for the period October 1, 2004 to September 30, 2010 in the amount of \$5,290,293, with a cost sharing requirement of \$1,599,370. Rice University and 6 other colleges formed an alliance, the Rice-Houston Alliance for Graduate Education and the Professoriate (Rice-Houston AGEP), with a common mission of significantly increasing the number of underrepresented minority students earning Ph.D.s and positioning them to become leaders in science, technology, engineering and mathematics (STEM) fields. There is one subawardee, University of Houston (budgeted amount: \$2,325,000), under the award.

Rice University is responsible for overall management of the project. Cumulative disbursements for award number HRD-0450363 reported to NSF through September 30, 2009 were \$3,413,278. Cost share claimed totaled \$2,652,839.

Award OISE-0530220 – PIRE: US-Japan Cooperative Research & Education: Ultrafast and Nonlinear Optics in 6.1 Angstrom Semiconductors (PIRE). NSF awarded Grant Award No. OISE-0530220 to Rice University for the period January 1, 2006 to December 31, 2010 in the amount of \$2,251,704. This Partnership for International Research and Education (PIRE) led by Rice University investigates the ultrafast and nonlinear optical properties of quantum structures based on the 6.1-angstrom (Å) III-V semiconductors. There are two subawardees, University of Florida (budgeted amount: \$281,770) and Texas A&M University (budgeted amount: \$241,035), under the award with a total budgeted amount of \$522,805.

Rice University is responsible for overall management of the project. Cumulative disbursements for award number OISE-0530220 reported to NSF through September 30, 2009 were \$1,593,870. There is no cost share requirement under this award.

AUDIT OBJECTIVES, SCOPE AND METHODOLOGY

At the request of the NSF Office of Inspector General, Mayer Hoffman McCann P.C. conducted an audit of NSF Award Numbers EEC-0647452, DGE-0504425, HRD-0450363 and OISE-0530220 granted to William Marsh Rice University (Rice University).

The objectives of the audit were to:

1. Determine whether Rice University has adequate systems of internal controls over administering its NSF awards to account for and ensure compliance with applicable OMB Circular and NSF award requirements.
2. Identify and report instances of noncompliance with laws, regulations and the provisions of the award agreements and weaknesses in Rice University's internal controls over compliance and financial reporting that could have a direct and material effect on the Schedules of Award Costs (Schedules A-1 through A-4) and Rice University's ability to properly administer, account for, and manage its NSF awards.
3. Determine and report on whether Rice University adequately monitors its subawards.
4. Follow-up on the issues/findings identified in NSF's 2006 Desk Review Report and Rice University's 2007 and 2008 OMB Circular A-133 single audits (see results of follow-up in Appendix B);
5. Determine and report on whether the Schedules of Award Costs (Schedules A-1, A-2, A-3 and A-4) of Rice University present fairly, in all material respects, the costs claimed on the *Federal Financial Report* (FFR) – Federal Share of Expenditures and cost sharing in conformity with NSF OIG's *Financial Audit Guide*, and Federal and NSF award terms and conditions.

We conducted our audit in accordance with auditing standards generally accepted in the United States of America, the standards applicable to financial audits contained in *Government Auditing Standards* (2007 Revision) issued by the Comptroller General of the United States, and the guidance provided in the *National Science Foundation OIG Audit Guide* (August 2007), as applicable. These standards and the NSF OIG Audit Guide require that we plan and perform the audit to obtain reasonable assurance about whether amounts claimed to NSF as presented in the Schedules of Award Costs (Schedules A-1 through A-4) are free of material misstatements. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the Schedules of Award Costs. An audit also includes assessing the accounting principles used and the significant estimates made by Rice University, as well as evaluating the overall financial schedule presentation. We believe that our audit provides a reasonable basis for our opinion.

FINDINGS AND RECOMMENDATIONS



Mayer Hoffman McCann P.C.

An Independent CPA Firm

2301 Dupont Drive, Suite 200
Irvine, California 92612
949-474-2020 ph
949-263-5520 fx
www.mhm-pc.com

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

REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING AND ON COMPLIANCE AND OTHER MATTERS BASED ON AN AUDIT OF FINANCIAL SCHEDULES PERFORMED IN ACCORDANCE WITH GOVERNMENT AUDITING STANDARDS

We have audited costs claimed as presented in the Schedules of Award Costs (Schedules A-1, A-2, A-3 and A-4), which summarize the financial reports submitted by William Marsh Rice University (Rice University) to the National Science Foundation (NSF) and claimed cost share, as applicable, for the awards and periods listed below and have issued our report thereon dated February 18, 2011.

Award Number	Award Period	Audit Period
EEC-0647452	10/01/06 – 09/30/11	10/01/06 – 09/30/09
DGE-0504425	06/15/05 – 05/31/10	06/15/05 – 09/30/09
HRD-0450363	10/01/04 – 09/30/10	10/01/04 – 09/30/09
OISE-0530220	01/01/06 – 12/31/10	01/01/06 – 09/30/09

We conducted our audit of the Schedules of Award Costs as presented in Schedules A-1, A-2, A-3 and A-4 in accordance with auditing standards generally accepted in the United States of America, the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States (2007 revision), and the guidance provided in the *National Science Foundation Audit Guide* (August 2007), as applicable.

INTERNAL CONTROL OVER FINANCIAL REPORTING

In planning and performing our audit of the Schedules of Award Costs (Schedules A-1, A-2, A-3 and A-4) for the period October 1, 2004 to September 30, 2009, we considered Rice University's internal control over financial reporting as a basis for designing our auditing procedures for the purpose of expressing our opinion on the financial schedules, but not for the purpose of expressing an opinion on the effectiveness of Rice University's internal control over financial reporting. Accordingly, we do not express an opinion on the effectiveness of Rice University's internal control over financial reporting.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct misstatements on a timely basis. A material weakness is a deficiency, or a combination of deficiencies, in internal control such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis.

Our consideration of internal control over financial reporting was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control over financial reporting that might be deficiencies, significant deficiencies or material weaknesses. We did not identify any deficiencies in internal control over financial reporting that we consider to be material weaknesses, as defined above. However, we identified a deficiency in internal control over financial reporting, as discussed as Finding No. 1 in the Schedule of Findings and Recommendations below, that we consider to be a significant deficiency in internal control over financial reporting. A significant deficiency is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

COMPLIANCE AND OTHER MATTERS

As part of obtaining reasonable assurance about whether Rice University's financial schedules are free of material misstatement, we performed tests of Rice University's compliance with certain provisions of applicable laws, regulations, and NSF award terms and conditions, noncompliance with which could have a direct and material effect on the determination of financial schedule amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests of compliance disclosed certain instances of noncompliance that are required to be reported under *Government Auditing Standards* and the *National Science Foundation OIG Audit Guide* and are described as Finding Nos. 1 and 2 in the Schedule of Findings and Recommendations below.

Rice University's response to the findings identified in our audit is described below after each finding and is included in its entirety in Appendix A. We did not audit Rice University's response and, accordingly, we express no opinion on it.

SCHEDULE OF FINDINGS AND RECOMMENDATIONS

Finding 1. Post-Subaward Fiscal Monitoring of Subawardees Should be Improved

Rice University did not adequately monitor subaward costs, which included four subawards amounting to over \$1.3 million in claimed costs. Although Rice University established written subaward monitoring policies and procedures, prior to the Fall of 2009, Rice University did not document the results of its risk assessments on potential subawardees at the pre-subaward stage. In addition, Rice University did not have a formal process that would provide an on-going risk assessment on subawards at the post-subaward stage and no rationale was given to identify the level of monitoring activities that should be conducted for the subawardees. Rice University's policies and procedures should be strengthened to provide greater oversight in the post-subaward stage to ensure that the subaward costs claimed are reasonable, allowable, and allocable to its current and future NSF awards.

To validate the costs claimed by the subawardees for the NSF awards, we performed on-site audit tests at the University of Houston, Rice University's subawardee, under Award No. HRD-0450363. We also reviewed a sample of invoices from the subawardees (Georgia Technical Institute, University of Florida and Texas A&M University) under Award Nos. EEC-0647452 and OISE-0530220 for the costs claimed and submitted to Rice University for reimbursement. Although no questioned subaward costs were identified from our audit tests, we noted that Rice University should perform additional routine subaward fiscal monitoring in the post-subaward stage to ensure that Rice University can more readily prevent or identify unallowable claimed subaward costs on its current and future NSF awards.

2 CFR 215, Administrative Requirements for Grants and Agreements with Institutions of Higher Education, Hospitals, and Other Non-Profit Organizations (OMB Circular A-110), Subpart C, §215.51(a), states: "Recipients are responsible for managing and monitoring each project, program, subaward, function or activity supported by the award. Recipients shall monitor subawards to ensure subrecipients have met the audit requirements as delineated in §215.26."

Further, OMB Circular A-133, Audits of States, Local Governments, and Non-Profit Organizations, Subpart D, §400(d.3) – Pass-Through Entity Responsibilities, states: "A pass-through entity shall perform the following for the Federal awards it makes:... (3) Monitor the activities of subrecipients as necessary to ensure that Federal awards are used for authorized purposes in compliance with laws, regulations, and the provisions of contracts or grant agreements and that performance goals are achieved." Although OMB Circular A-133 does not specifically state that an awardee is required to implement a risk-based subaward monitoring process, the OMB Circular A-133 Compliance Supplement, Part 3, Section M, requires the auditor to determine whether or not the awardee evaluated its subaward risk to determine the need for closer monitoring.

The NSF Grant Policy Manual, Section 301, also specifies that grantees are responsible for managing and monitoring subaward performance and exercising prudent management of all expenditures and actions affecting the grant.

Three out of the four NSF awards audited have four subawardees with total claimed subaward costs of \$1,330,714 for the audited period. According to Rice University's policies and procedures, subawardee fiscal monitoring responsibilities are performed by the Office of Sponsored Research (OSR), the Principal Investigator (PI) and the administrator of the department managing the award, and Research and Cost Accounting (RCA) of the Controller's

Office. The subawardee monitoring process is generally conducted in the pre-subaward and post-subaward stages.

Pre-subaward Stage:

In the pre-award stage, OSR develops and negotiates the subaward agreements. According to Rice University's policies and procedures, prior to issuing a subaward, OSR, with RCA's assistance, is responsible for assessing the risk of the subaward candidate. In order to perform the risk assessment, OSR checks to ensure that the subaward candidate is not suspended or barred from Federal contracting. OSR also reviews the subaward candidate's OMB Circular A-133 single audit reports, if applicable, to identify if the subaward candidate has any internal control deficiencies or non-compliance issues. If so, OSR will work with RCA to determine if additional requirements should be incorporated into the subaward agreement to monitor efforts to correct the deficiencies and non-compliance noted. In addition, OSR considers other factors in the risk assessment, such as the subaward candidate's past experience, financial competency, and the dollar amount of the subaward.

However, prior to the Fall of 2009, Rice University's policies and procedures did not require that the risk assessment results at the pre-subaward stage be documented. Rice University's officials stated that pre-subaward risk assessments were performed during our audit period but the results were not documented. Therefore, within our audit period, there was no document available to show what types of risks that Rice University had identified for the NSF awards we audited and whether the subawardees were considered "low risk," "moderate risk," or "high risk" to support the monitoring steps conducted to mitigate the risks.

According to Rice University officials, in September 2009, they began using a risk assessment matrix to document pre-subaward risk assessment results. This risk assessment is performed at the pre-subaward stage to determine if a subaward should be made.

Post-subaward Stage:

During the post-subaward stage, the PI, the administrator managing the award, and RCA are responsible for the fiscal monitoring of the subawards. Based on our interviews with the PIs and the administrators of the three NSF awards, fiscal monitoring activities are generally limited to on-going communication with the subawardees and review of subawardee invoices for mathematical accuracy and budgetary compliance. Our review indicates, with the exception of the subawardee under NSF award HRD-0450363, that subawardees under the audited NSF awards submit their invoices without any supporting documentation. For award no. HRD-0450363, the subawardee submits a listing of the expenses claimed, so that the PI and the administrator could perform more detailed review on the allowability of the expense items.

According to Rice University's policies and procedures, the PI and the administrator, based on their judgment, can adopt various monitoring techniques, such as communication with the subawardee, review of financial reports and invoices, and site visits to the subawardee work site. However, the policies and procedures do not indicate when these monitoring techniques would be used or how the officials adopting the monitoring techniques document how or why they are chosen. Based on our review, fiscal monitoring activities are generally limited to on-going communication with the subawardees and review of subawardee invoices for mathematical accuracy and budgetary compliance. No on-site fiscal monitoring visits at the subawardees were conducted for the NSF awards we audited. In addition, the policies and

procedures do not include a formal process to assess the risks of subawards on an on-going basis to determine if the current level of subawardee oversight is adequate.

The RCA of the Controller's Office is responsible for annually reviewing the A-133 single audit certifications submitted to Rice University by the subawardees during the post-subaward stage for any findings and questioned costs. If there are any findings or questioned costs noted for a subawardee, RCA will follow up with the subawardee to determine if the findings or questioned costs have been addressed by the subawardee. However, this review process does not include an assessment of whether the findings or questioned costs increase the risk of the subaward.

According to Rice University's officials the University primarily relies on the subawardees' own internal control system and OMB Circular A-133 single audits to ensure that the subawardees are in compliance with the terms and conditions of the subaward agreements and that subaward costs claimed are reasonable, allowable, and allocable in accordance with applicable Federal and NSF provisions.

Fiscal monitoring of subawardees at Rice University is inadequate because the rationale used to perform different monitoring techniques is not documented and there is no formal on-going post-subaward risk assessment process to ensure that the current level of subawardee oversight is adequate. This could lead to NSF funds being used for purposes other than those intended under the NSF awards. Thus, lack of adequate post-subaward subawardee fiscal monitoring increases the risk that some of the subawardee costs or cost sharing claimed by Rice University may be unallowable, unreasonable, or unallocable under the NSF awards. In addition, since the cost share reported by Rice University to NSF includes the cost share reported by the subawardees on their invoices, lack of adequate subawardee fiscal monitoring increases the risk that Rice University does not meet its cost share obligation to the NSF awards. Furthermore, without sufficient information from the subawardees, the PI and the administrator may not be able to identify any potential problems and questioned costs. A formal on-going documented subaward risk assessment process could better prevent or identify unallowable subaward costs or cost sharing claimed on NSF awards.

Recommendation 1:

We recommend that NSF's Director of the Division of Institution and Award Support address and resolve the following recommendation that:

- (a) Rice University enhance its subaward fiscal monitoring policy and procedures by developing and implementing a formal on-going post-subaward risk assessment process for subawardees that will cover the entire period of the subawards. The process should be a risk-based process to perform on-going assessment on the risk of its subawards to determine the level of subawardee oversight necessary. This process would determine the need for performing steps beyond a review of the OMB Circular A-133 single audit report results, such as performing desk reviews, site visits, and sampling of support documentation. Rice University's policies and procedures should also require that the assessment results and the rationale used to perform different monitoring techniques for each subawardee be documented.

Awardee's Comments

While Rice University agrees that documentation of its subaward monitoring activities can be enhanced, it disagrees with classifying this finding as a significant deficiency because there

were no questioned costs identified from the audit. In addition, Rice University believes that, taking into consideration of the materiality of its subaward expenditures, its subaward monitoring policies and procedures that were in place during the award period met the requirements of OMB Circular A-133 and did provide Rice University with reasonable assurance that Rice University's subawardees, the vast majority of whom are large universities that operate within a stable business environment, administered Federal awards in compliance with laws, regulations and the provision of the subaward agreements. However, Rice University stated that it is taking action to formalize and improve the subaward monitoring policies and procedures. The improved procedures will provide Rice University with additional guidance for subaward monitoring and documentation, require that the risk assessment for each issued subaward be performed and documented at appropriate intervals, and require that, based on pre-award and on-going risk assessment, appropriate subaward monitoring techniques be selected and that decisions regarding the techniques used be documented.

Auditor's Response

Rice University's comments are responsive to the finding and recommendation. However, we do not concur with Rice University that the finding is not a significant deficiency. As Rice University stated, it had \$1.7 million in NSF subaward expenditures in FY 2010 that this finding affects. A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct misstatements on a timely basis. A significant deficiency is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance. Although there were no questioned costs identified from our audit, it could be attributed to the subawardees' internal controls, but not Rice University's own internal controls.

This report finding should not be closed until NSF determines that the recommendation has been adequately addressed and the proposed recommendations have been satisfactorily implemented.

Finding 2. Non-compliance with Bayh-Dole Act and NSF Provisions on Invention Disclosure and Patent Application

Rice University did not fully comply with the reporting requirements of the Bayh-Dole Act and NSF, although Rice University has established policy and procedures on invention disclosure and patent application. Due to personnel turnover and miscommunication between departments, the policy and procedures could not be effectively implemented to ensure compliance with the relevant provisions. As a result, NSF may not have current information regarding all inventions and patents developed for evaluating award progress, and reporting research highlights to Congress. In addition, failure to comply with the Bayh-Dole Act and implement NSF provisions requiring disclosure of inventions to NSF could lead to forfeiture of title to inventions developed under the NSF awards under some circumstances.

Rice University's Patent and Software policies properly state, "[i]n case of the government-supported research, the Bayh-Dole Act and subsequent amendments and federal regulations provide the basis for current university technology transfer practices." Consistent with government-wide Bayh-Dole regulations (37 C.F.R. Part 401), NSF's funding agreements contain a standard patent rights clause (see NSF Grant Policy Manual (GPM) 731.3). The clause requires that the grantee discloses each subject invention to NSF within two months after

the inventor discloses it in writing to grantee personnel responsible for patent matters. The disclosure should be in the form of a written report and shall identify the grant under which the invention was made and the inventor(s). The clause also states that the grantee agrees to include, within the specification of any U.S. patent applications and any patent issuing thereon covering a subject invention, the following statement, "This invention was made with government support under (identify the grant) awarded by the National Science Foundation. The government has certain rights in this invention."

According to Rice University, a total of nine inventions have been developed under NSF award No. [REDACTED] as of September 30, 2009. We reviewed the relevant reporting documents of six inventions and noted two instances of noncompliance. Specifically, [REDACTED] was disclosed by the inventor to Rice University's Office of Technology Transfer (OTT) on September 21, 2007, but the invention was not reported to NSF until March 4, 2008, 104 days late. The invention should have been reported to NSF by November 20, 2007. In addition, the provisional patent application for [REDACTED] did not indicate NSF as the funding source or the NSF award number. Instances of late disclosure of inventions to the federal funding agency were also found in Rice University's OMB Circular A-133 single audit report for FYE 06/30/06.

Rice University assigns the invention disclosure and patent application responsibilities to its Office of Technology Transfer (OTT). The Patent Manager (formerly known as Technology Transfer Coordinator) of OTT is responsible for reporting inventions and making sure that all required information is disclosed in a timely manner to the federal funding agency through an online system named "iEdison." A Licensing Associate or Manager is assigned to each invention, who works closely with the inventor to determine the patentability and market potential of the invention. If it is determined that a patent application is to be filed for an invention, the assigned Licensing Associate or Manager will instruct an outside patent counsel to prepare the application. The outside patent counsel is responsible to confirm the funding sources of the invention with the inventor, so that the relevant information can be listed on the patent application. As noted earlier, Rice University has patent and software policies to set forth the general policies and guidelines to define the obligations of Rice University's faculty, staff and students with regard to inventions that result from research activities. However, due to personnel turnover in OTT and miscommunication between OTT and the inventing department, such policies and procedures were not effectively implemented to ensure full compliance with the invention disclosure and patent application requirements of the Bayh-Dole Act and NSF.

According to OTT, the invention [REDACTED] was disclosed to OTT by the faculty inventor on September 21, 2007, a time of transition for OTT. On August 31, 2007, the Technology Transfer Coordinator, who was responsible for filing the invention reports with the granting agencies, resigned from the position. After carefully considering the job responsibilities for sponsor reporting, as well as the findings from the OMB Circular A-133 single audit for FYE 06/30/06, OTT decided to upgrade the Technology Transfer Coordinator position from one that reported to the Office's Business Manager to a Patent Manager position that would report directly to the Director of OTT. The Business Manager was assigned to temporarily cover the reporting duties until a new person was hired for the Patent Manager position. However, the Business Manager did not have all the inventions reported timely, and the new Patent Manager who began January 7, 2008 inherited a backlog. Shortly thereafter, the Business Manager left Rice University.

Invention [REDACTED] was created by a group of students for a senior design project. According to OTT, the invention was disclosed to OTT on March 31, 2007. Although the invention disclosure

noted that the invention was related to a [REDACTED] award, it did not indicate NSF as the federal funding agency or the award number. Since the students needed to perform a presentation of the invention, which is a public disclosure, on April 3, 2007, OTT sought to make a very quick turnaround to file a provisional patent application for the invention on April 2, 2007 to protect the intellectual property. On April 4, 2007, the Technology Transfer Coordinator sent an email to the students requesting the federal funding information and the students replied to OTT on April 5, 2007. However, OTT was not sure if this information was communicated to the patent counsel for immediate amendment to the application or if a decision was made to include the information later upon conversion of the application to a utility patent. The Technology Transfer Coordinator and the two Licensing Associates that worked on the application are no longer with OTT, and the patent counsel did not have any record of specific instructions regarding the timing to provide updated information on the application. The provisional patent application was never converted to a utility patent. It was abandoned and waived back to the government because of low commercial potential.

To strengthen its sponsored invention reporting and patent application system, Rice University engaged a consulting company in March 2009 to examine the system and provide suggestions for improvements. During our fieldwork in May 2010, a draft copy of a practices manual had been developed by the consulting company. Rice is in the process of reviewing and finalizing the practice manual.

As a result of the non-compliance, NSF may not have current information regarding all inventions and patents developed, which is important for the evaluation of progress and future funding decisions, as well as for reporting research results to Congress. In addition, failure to disclose inventions to NSF could result in the University's forfeiture of title and NSF obtaining title in certain circumstances.

Recommendation 2:

We recommend that NSF's Director of the Division of Institution and Award Support address and resolve the following recommendations that:

- (a) Rice University ensure that its revised policies on patent application are adequate, comply with NSF and federal regulations, and are properly implemented; and
- (b) Rice University's Office of Technology Transfer take a proactive role to educate research personnel on federal awards with potential inventions regarding the Bayh-Dole Act and NSF invention reporting and disclosure requirements.

Awardee's Comments

Rice University concurs with the finding and agrees to implement the recommendations. Rice University stated that it has been working with an outside consultant to ensure that its revised policies on invention disclosure and patent application are adequate, comply with NSF and Federal regulations and are properly implemented. Rice also stated that training on inventions regarding the Bayh-Dole Act will be provided to research personnel.

Auditor's Response

Rice University's comments are responsive to the finding and the recommendations.

This report finding should not be closed until NSF determines that the recommendation has been adequately addressed and the proposed corrective actions have been satisfactorily implemented.

This report is intended solely for the information and use of Rice University's management, the National Science Foundation - Rice University's cognizant federal audit agency, the Office of Management and Budget, and the Congress of the United States and is not intended to be, and should not be used by anyone other than these specified parties.

Mayer Hoffman McCann P.C.

Mayer Hoffman McCann P.C.
Irvine, California
February 18, 2011

**FINANCIAL SCHEDULES AND
SUPPLEMENTAL INFORMATION**



Mayer Hoffman McCann P.C.

An Independent CPA Firm

2301 Dupont Drive, Suite 200
Irvine, California 92612
949-474-2020 ph
949-263-5520 fx
www.mhm-pc.com

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

INDEPENDENT AUDITORS' REPORT ON FINANCIAL SCHEDULES

We have audited the costs claimed by William Marsh Rice University (Rice University) to the National Science Foundation (NSF) on the Federal Financial Reports (FFRs) for the NSF awards listed below. In addition, we have audited the amount of cost share claimed on the NSF awards, as applicable. The FFRs, as presented in the Schedules of Award Costs (Schedules A-1, A-2, A-3 and A-4), are the responsibility of Rice University's management. Our responsibility is to express an opinion on these Schedules of Award Costs based on our audit.

Award Number	Award Period	Audit Period
EEC-0647452	10/01/06 – 09/30/11	10/01/06 – 09/30/09
DGE-0504425	06/15/05 – 05/31/10	06/15/05 – 09/30/09
HRD-0450363	10/01/04 – 09/30/10	10/01/04 – 09/30/09
OISE-0530220	01/01/06 – 12/31/10	01/01/06 – 09/30/09

We conducted our audit in accordance with auditing standards generally accepted in the United States of America, the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States (2007 revision), and the guidance provided in the *National Science Foundation OIG Audit Guide* (August 2007), as applicable. These standards and the *National Science Foundation OIG Audit Guide*, require that we plan and perform the audit to obtain reasonable assurance about whether the amounts claimed to NSF as presented in the Schedules of Award Costs (Schedules A-1 through A-4) are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the Schedules of Award Costs. An audit also includes assessing the accounting principles used and the significant estimates made by Rice University's management, as well as evaluating the overall financial schedule presentation. We believe our audit provides a reasonable basis for our opinion.

In our opinion, the Schedules of Award Costs (Schedules A-1 through A-4) referred to above present fairly, in all material respects, the costs claimed on the FFRs and cost share claimed for the period October 1, 2004 to September 30, 2009 in conformity with the provisions of the *National Science Foundation OIG Audit Guide*, *NSF Grant Policy Manual*, terms and conditions of the NSF awards and on the basis of accounting described in the Notes to the Financial Schedules, which is a comprehensive basis of accounting other than generally accepted accounting principles. These schedules are not intended to be a complete presentation of financial position of Rice University in conformity with accounting principles generally accepted in the United States of America.

In accordance with *Government Auditing Standards*, and guidance provided in the *National Science Foundation OIG Audit Guide*, we have also issued our report dated February 18, 2011, on our consideration of Rice University's internal control over financial reporting and our tests of Rice University's compliance with certain provisions of laws, regulations, and NSF award terms and conditions and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* and should be considered in assessing the results of our audit.

This report is intended solely for the information and use of Rice University's management, the National Science Foundation - Rice University's cognizant federal audit agency, the Office of Management and Budget, and the Congress of the United States and is not intended to be, and should not be used by anyone other than these specified parties.

Mayer Hoffman McCann P.C.

Mayer Hoffman McCann
Irvine, California
February 18, 2011

WILLIAM MARSH RICE UNIVERSITY
National Science Foundation Award Number EEC-0647452
Schedule of Award Costs
October 1, 2006 to September 30, 2009
Interim

Cost Category	Approved Budget	Claimed Costs (A)	Reclassification of Costs	Claimed Costs After Reclassification	Questioned Costs	Schedule Reference
Direct costs:						
Salaries and wages	\$ 4,212,235	2,719,771	-	2,719,771	-	
Fringe benefits	1,287,781	828,473	-	828,473	-	
Equipment	11,500	122,999	-	122,999	-	
Travel	211,692	141,723	-	141,723	-	
Participant support	277,758	262,727	-	262,727	-	
Other direct costs:						
Material and supplies	598,299	566,159	-	566,159	-	
Publication costs	31,000	66,333	-	66,333	-	
Consultant services	-	-	-	-	-	
Computer services	-	-	-	-	-	
Subawards	205,833	105,285	-	105,285	-	
Other direct costs	5,000	-	-	-	-	
Total direct costs	6,841,098	4,813,470	-	4,813,470	-	
Indirect costs	2,912,548	1,984,055	-	1,984,055	-	
Total	<u>\$ 9,753,646</u>	<u>6,797,525</u>	<u>-</u>	<u>6,797,525</u>	<u>-</u>	
Cost sharing	<u>\$ 1,176,075</u>	<u>987,147</u>	<u>-</u>	<u>987,147</u>	<u>-</u>	

(A) - The total claimed costs agree with the total expenditures reported by Rice University on the Federal Financial Report as of the quarter ended September 30, 2009. Claimed costs reported above are based on the cost ledgers prepared by Rice University from Rice University's books of accounts.

See accompanying *Notes to Financial Schedules*

WILLIAM MARSH RICE UNIVERSITY
 National Science Foundation Award Number DGE-0504425
 Schedule of Award Costs
 June 15, 2005 to September 30, 2009
 Interim

Cost Category	Approved Budget	Claimed Costs (A)	Reclassification of Costs	Claimed Costs After Reclassification	Questioned Costs	Schedule Reference
Direct costs:						
Salaries and wages	\$ 450,000	346,400	-	346,400	-	
Fringe benefits	119,500	88,545	-	88,545	-	
Equipment	112,100	58,560	-	58,560	-	
Travel	40,000	-	-	-	-	
Participant support	1,784,500	1,144,052	-	1,144,052	-	
Other direct costs:						
Material and supplies	32,250	25,626	-	25,626	-	
Publication costs	32,250	-	-	-	-	
Consultant services	-	-	-	-	-	
Computer services	-	-	-	-	-	
Subawards	-	-	-	-	-	
Other direct costs	<u>329,150</u>	<u>261,880</u>	-	<u>261,880</u>	-	
Total direct costs	2,899,750	1,925,063	-	1,925,063	-	
Indirect costs	<u>186,890</u>	<u>128,320</u>	-	<u>128,320</u>	-	
Total	<u>\$ 3,086,640</u>	<u>2,053,383</u>	-	<u>2,053,383</u>	-	
Cost sharing	<u>\$ 485,100</u>	<u>447,776</u>	-	<u>447,776</u>	-	

(A) - The total claimed costs agree with the total expenditures reported by Rice University on the Federal Financial Report as of the quarter ended September 30, 2009. Claimed costs reported above are based on the cost ledgers prepared by Rice University from Rice University's books of accounts.

See accompanying *Notes to Financial Schedules*

WILLIAM MARSH RICE UNIVERSITY
National Science Foundation Award Number HRD-0450363
Schedule of Award Costs
October 1, 2004 to September 30, 2009
Interim

Cost Category	Approved Budget	Claimed Costs (A)	Reclassification of Costs	Claimed Costs After Reclassification	Questioned Costs	Schedule Reference
Direct costs:						
Salaries and wages	\$ 1,363,774	1,219,292	-	1,219,292	-	
Fringe benefits	284,631	273,423	-	273,423	-	
Equipment	-	-	-	-	-	
Travel	397,526	229,672	-	229,672	-	
Participant support	582,843	414,510	-	414,510	-	
Other direct costs:						
Material and supplies	68,183	41,441	-	41,441	-	
Publication costs	-	-	-	-	-	
Consultant services	60,000	30,415	-	30,415	-	
Computer services	-	-	-	-	-	
Subawards	2,325,000	950,013	-	950,013	-	
Other direct costs	<u>45,000</u>	<u>116,768</u>	-	<u>116,768</u>	-	
Total direct costs	5,126,957	3,275,534	-	3,275,534	-	
Indirect costs	<u>163,336</u>	<u>137,744</u>	-	<u>137,744</u>	-	
Total	<u>\$ 5,290,293</u>	<u>3,413,278</u>	-	<u>3,413,278</u>	-	
Cost sharing	<u>\$ 1,599,370</u>	<u>2,652,839</u>	-	<u>2,652,839</u>	-	

(A) - The total claimed costs agree with the total expenditures reported by Rice University on the Federal Financial Report as of the quarter ended September 30, 2009. Claimed costs reported above are based on the cost ledgers prepared by Rice University from Rice University's books of accounts.

See accompanying *Notes to Financial Schedules*

WILLIAM MARSH RICE UNIVERSITY
National Science Foundation Award Number OISE-0530220
Schedule of Award Costs
January 1, 2006 to September 30, 2009
Interim

Cost Category	Approved Budget	Claimed Costs (A)	Reclassification of Costs	Claimed Costs After Reclassification	Questioned Costs	Schedule Reference
Direct costs:						
Salaries and wages	\$ 418,889	217,543	-	217,543	-	
Fringe benefits	134,158	67,966	-	67,966	-	
Equipment	-	12,881	-	12,881	-	
Travel	92,550	96,157	-	96,157	-	
Participant support	789,450	645,590	-	645,590	-	
Other direct costs:						
Material and supplies	53,376	67,572	-	67,572	-	
Publication costs	10,000	-	-	-	-	
Consultant services	-	-	-	-	-	
Computer services	-	-	-	-	-	
Subawards	522,805	275,416	-	275,416	-	
Other direct costs	-	33,059	-	33,059	-	
Total direct costs	2,021,228	1,416,184	-	1,416,184	-	
Indirect costs	230,476	177,686	-	177,686	-	
Total	<u>\$ 2,251,704</u>	<u>1,593,870</u>	<u>-</u>	<u>1,593,870</u>	<u>-</u>	

(A) - The total claimed costs agree with the total expenditures reported by Rice University on the Federal Financial Report as of the quarter ended September 30, 2009. Claimed costs reported above are based on the cost ledgers prepared by Rice University from Rice University's books of accounts.

See accompanying *Notes to Financial Schedules*

SCHEDULE B

WILLIAM MARSH RICE UNIVERSITY
 Summary Schedule of Awards Audited and Audit Results
 From October 1, 2004 to September 30, 2009

Summary of Awards Audited

<u>Award Number</u>	<u>Award Period</u>	<u>Audit Period</u>
EEC-0647452	10/01/06 – 09/30/11	10/01/06 – 09/30/09
DGE-0504425	06/15/05 – 05/31/10	06/15/05 – 09/30/09
HRD-0450363	10/01/04 – 09/30/10	10/01/04 – 09/30/09
OISE-0530220	01/01/06 – 12/31/10	01/01/06 – 09/30/09

<u>Award Number</u>	<u>Type of Award</u>	<u>Award Description</u>
EEC-0647452	Continuing Cooperative Agreement	NSF funds are used for the Center for Biological and Environmental Nanotechnology (CBEN) of Rice University and support the goal to discover and develop nanoparticles that enable new medical and environmental technologies.
DGE-0504425	Grant	This Integrative Graduate Education and Research Training (IGERT) award supports the establishment of a unique multidisciplinary graduate training program in nanophotonics at Rice University.
HRD-0450363	Continuing Cooperative Agreement	Rice University and 6 other colleges formed an alliance, the Rice-Houston Alliance for Graduate Education and the Professoriate (Rice-Houston AGEP), with a common mission of significantly increasing the number of underrepresented minority students earning Ph.D.s and positioning them to become leaders in science, technology, engineering and mathematics fields (STEM).
OISE-0530220	Grant	This Partnership for International Research and Education (PIRE) led by Rice University investigates the ultrafast and nonlinear optical properties of quantum structures based on the 6.1-angstrom (Å) III-V semiconductors.

SCHEDULE B

WILLIAM MARSH RICE UNIVERSITY
 Summary Schedule of Awards Audited and Audit Results
 From October 1, 2004 to September 30, 2009

(Continued)

Summary of Questioned and Unsupported Costs

<u>Award Number</u>	<u>Award Budget</u>	<u>Claimed Costs</u>	<u>Questioned Costs</u>	<u>Unsupported Costs</u>
EEC-0647452	\$ 9,753,646	6,797,525	-	-
DGE-0504425	3,086,640	2,053,383	-	-
HRD-0450363	5,290,293	3,413,278	-	-
OISE-0530220	2,251,704	1,593,870	-	-
Total	\$ 20,382,283	13,858,056	-	-
<u>Cost Share</u>	<u>Award Budget</u>	<u>Claimed Costs</u>	<u>Questioned Costs</u>	<u>Unsupported Costs</u>
EEC-0647452	\$ 1,176,075	987,147	-	-
DGE-0504425	485,100	447,776	-	-
HRD-0450363	1,599,370	2,652,839	-	-
Total	\$ 3,260,545	4,087,762	-	-

SCHEDULE B

WILLIAM MARSH RICE UNIVERSITY
 Summary Schedule of Awards Audited and Audit Results
 From October 1, 2004 to September 30, 2009

(Continued)

Summary of Non-Compliance and Internal Control Findings

<u>Findings</u>	<u>Non-Compliance and/or Internal Control</u>	<u>Significant Deficiency</u>	<u>Material Weakness</u>	<u>Amount of Questioned Costs Affected</u>	<u>Amount of Claimed/ Incurred Costs Affected</u>
Fiscal Monitoring of Subawardees Could be Enhanced	Non-Compliance and Internal Control	Yes	No	\$ -	\$ 1,330,714
Noncompliance with Bayh-Dole Act and NSF Provisions on Invention Disclosure and Patent Application	Non-Compliance	No	No	-	N/A

WILLIAM MARSH RICE UNIVERSITY
Notes to Financial Schedules

From October 1, 2004 to September 30, 2009

Note 1: Summary of Significant Accounting Policies

Accounting Basis

The accompanying financial schedules have been prepared in conformity with National Science Foundation (NSF) instructions, which are based on a comprehensive basis of accounting other than generally accepted accounting principles. Schedules A-1, A-2, A-3 and A-4 have been prepared by William Marsh Rice University (Rice University) from the Federal Financial Reports (FFRs) submitted to NSF and Rice University's accounting records. The basis of accounting utilized in preparation of these reports differs from generally accepted accounting principles. The following information summarizes these differences:

A. Equity

Under the terms of the awards, all funds not expended according to the award agreements and budgeted at the end of the award period are to be returned to NSF. Therefore, the awardee does not maintain any equity in the award and any excess cash received from NSF over final expenditures is due back to NSF.

B. Inventory

Minor materials and supplies are charged to expense during the period of purchase. As a result, no inventory is recognized for these items in the financial schedules.

C. Equipment

Equipment purchased with NSF funds is expensed at cost in the period during which it is purchased instead of being recognized as an asset and depreciated over its useful life. Accounting principles generally accepted in the United States of America require that equipment to be capitalized and depreciated over its useful life. As a result, the expenses reflected in the Schedules of Award Costs include the costs of equipment purchased during the period rather than a provision for depreciation. The capitalization and depreciation of the costs of equipment is reflected on Rice University's own financial statements which are not subject to our audit.

Except for awards with nonstandard terms and conditions, title to equipment under NSF awards vests in the recipient, for use in the project or program for which it was acquired, as long as it is needed. The recipient may not encumber the property without approval of the federal awarding agency, but may use the equipment for its other federally sponsored activities, when it is no longer needed for the original project.

WILLIAM MARSH RICE UNIVERSITY
Notes to Financial Schedules

(Continued)

Note 1: Summary of Significant Accounting Policies (Continued)

Income Taxes

The University is a Texas non-for-profit corporation under Section 501(c)(3) of the U.S. Internal Revenue Code and has received rulings from the Internal Revenue Service and the Texas State Government granting it exemption from income taxes.

The departure from generally accepted accounting principles allows NSF to properly monitor and track actual expenditures incurred by Rice University. The departure does not constitute a material weakness in internal controls.

Note 2: Indirect Cost Rates

<u>Award Number</u>	<u>Indirect Cost Rate For 10/01/04 – 09/30/09</u>	<u>Base</u>
EEC-0647452	[REDACTED]	[REDACTED] each
DGE-0504425	[REDACTED]	[REDACTED]
HRD-0450363	[REDACTED]	[REDACTED]

WILLIAM MARSH RICE UNIVERSITY

Notes to Financial Schedules

(Continued)

Note 2: Indirect Cost Rates (Continued)

OISE-0530220		
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* Rice University had an F&A rate of [REDACTED] approved by the U.S. Department of Health and Human Services. However, Rice University only claimed [REDACTED] as Federal Share. The remaining unclaimed [REDACTED] was used as part of the cost share contributions.

**APPENDIX A – AWARDEE’S COMMENTS TO
REPORT**



[REDACTED]
Vice President for Finance

January 25, 2011

[REDACTED]
Mayer Hoffman McCann, P.C.
2301 Dupont Drive, Suite 200
Irvine, California 92612

Dear [REDACTED]:

This letter provides Rice University's response to the draft findings of the NSF/OIG audit conducted of certain NSF awards made to Rice University, which we received electronically on January 5, 2011. You asked for comments back by January 26, 2011. I want to convey our appreciation for the professionalism and courtesy with which you and your fellow auditors conducted this audit.

Our major substantive concerns are explained below. Technical edits in the narrative and exhibits are addressed in Appendix A (attached).

Finding 1. Post-Subaward Fiscal Monitoring of Subawardees Should Be Improved

Response to Recommendation 1:

While we agree that there are opportunities to improve the documentation of our policies, procedures and monitoring steps, we respectfully disagree with the conclusion that this finding represents a significant deficiency in internal control over financial reporting. We request that, after reading our response, you remove the significant deficiency label. We believe that the policies and procedures in practice during the period of the audit provided reasonable assurance that Rice's subrecipients administered Federal awards in compliance with laws, regulations and the provisions of contracts or grant agreements and that performance goals were achieved, as specified in the OMB A-133 Compliance Supplement, page 3-M-1. Steps taken to achieve this reasonable assurance included, but were not limited to:

- The Office of Sponsored Research (OSR) performed risk assessments at the pre-award stage.
- Principal Investigators (PIs) maintained regular contact with subawardees regarding program activities.

- PIs, department administrators and Research and Cost Accounting (RCA) monitored invoices and requested additional invoice support documentation when deemed appropriate. The audit team saw specific evidence of this when reviewing our award to the University of Houston.

- RCA reviewed subrecipient OMB Circular A-133 audits and certifications to ensure that there were no findings related to Rice subawards. If there had been findings, Rice would have followed up with the subawardees as required by OMB Circular A-133 and implemented additional monitoring steps as warranted.

Furthermore, we note that, even after an extremely comprehensive and detailed audit that included a review of 10% of the costs incurred on these awards over periods that ranged from three to five years and a site visit to the largest subawardee, the auditors identified no questioned costs.

To put the materiality of Rice's subaward expenditures into proper perspective, during the fiscal year ended June 30, 2010, Rice administered 116 subawards under Federal agreements. Per our OMB Circular A-133 audit report for fiscal 2010, Federal award expenditures totaled over \$83 million. Approximately \$8.5 million of this amount was spent by subawardees, including \$1.7 million for NSF subawards. This \$1.7 million represented 6.1% of the total \$28 million in NSF expenditures in FY 2010. Subaward recipients included 52 colleges and universities subject to OMB Circular A-133 audits, one not-for-profit entity subject to A-133 audits, and 11 other entities not required to complete an A-133 audit. Expenditures through entities not subject to A-133 were \$1.2 million in fiscal 2010.

Hence, because of the procedures we have in place and our track record as described above, we believe that the designation of significant deficiency is not warranted. However, we agree that documentation of the subaward monitoring process can be enhanced and we are taking action to formalize and strengthen the subrecipient monitoring policy and procedures that were in place during the award period. Drafts of these documents are presently under review.

The improved procedures will:

- Provide the Rice research community with additional guidance for subrecipient monitoring and documentation, including examples of when additional monitoring or oversight, such as obtaining and additional financial support and performance reports, making site visits, or inquiring about program activities, might be warranted;
- Require that the risk assessment for each issued subaward be performed and documented at appropriate intervals, in accordance with our formalized policy and procedures; and

- Require that, based on preaward and on-going risk assessment, appropriate subaward and subrecipient monitoring techniques be selected and that decisions regarding the techniques used be documented.

These improvements will strengthen the current subrecipient monitoring process at Rice, which encompasses both pre- and post-subaward stages and includes the following:

At the pre-subaward and subaward stage

- OSR and the faculty maintain regular communication during the proposal and subaward execution phases. Prior to issuing renewals or extensions of subawards, OSR receives positive confirmation from the PI that programmatic goals are being met and that no fiscal concerns have been identified.
- OSR conducts pre-subaward risk assessments, including obtaining OMB Circular A-133 audit certifications and/or reports, although the assessments done during the audit period were not documented using the risk analysis form currently in use. The vast majority of the subawards Rice issues are to low risk, well-established universities with a good reputation. In many cases, Rice has previously had successful experience with the institution as a subawardee.
- In those situations where a subaward is made to other than a low risk university subawardee, the subaward agreement contains additional terms as needed to address potential financial risk identified as specific to the subawardee, such as requiring copies of supporting documentation with invoices or providing for scheduled payments based on milestones/deliverables.
- OSR regularly consults with RCA regarding invoicing support documentation requirements when negotiating agreements with organizations that do not require annual OMB Circular A-133 audits.

At the post-subaward stage

- PIs maintain regular contact with their collaborators throughout the performance period, which may include site visits to assess technical progress when appropriate. This on-going contact assists the PIs in their review of the invoiced costs and allows them to understand the subcontractor's environment and react to changes that could jeopardize successful completion of the programmatic goals.
- Rice subawardees are required to provide the same or greater level of expenditure detail than that normally required by the Federal agencies from their awardees.
- Invoice Review:
 - 1) RCA sends a written reminder to the PI with each subawardee invoice listing PI responsibilities when reviewing subrecipient invoices.
 - 2) The PI or his/her designee reviews and approves subawardee invoices before payment to insure that costs incurred are appropriate and reasonable in relation to the technical progress on the award and the budget.

3) If the PI or department administrator determines that a more detailed explanation of expenditures is needed, he/she may request a list of detailed transactions and/or supporting documentation. As indicated in the audit report, this option was exercised for the largest subaward that was audited and, as described by the PI during the interview with the auditors, on one occasion inappropriate charges were identified and a revised invoice was requested.

- **Internal Control Review:** The OMB Circular A-133 Compliance Supplement requires that awardees monitor subrecipient activities to provide reasonable (emphasis added) assurance that the subrecipient administers Federal awards in compliance with Federal requirements. As a part of our subawardee monitoring process, we rely on the OMB Circular A-133 audits performed at these institutions when assessing the internal controls of our subawardees. We believe this to be both an appropriate and cost effective monitoring method and in accordance with OMB Circular A-133 requirements.

- **Audit Review:** RCA reviews OMB Circular A-133 single audit certifications submitted by subawardees and/or the actual A-133 audit reports and/or their filings with the Federal Audit Clearinghouse, as authorized in the OMB Circular A-133 Compliance Supplement, page 3-M-4. RCA reviews these documents to identify any findings or questioned costs. If any are identified, RCA would follow up as appropriate, including notifying OSR of findings on awards made by Rice (if any) so that any changes to the risk assessment could be made and appropriate monitoring actions could be determined.

In summary, we believe that the policies and procedures in effect during the audit period met the requirements of OMB Circular A-133 and did provide us with reasonable assurance that Rice's subrecipients, the vast majority of whom are large universities that operate within a stable business environment, administered Federal awards in compliance with laws, regulations and the provisions of contracts or grant agreements and that performance goals were achieved. We believe that documentation of the monitoring activities could be better and we are taking steps to improve that in the future. However, we do not believe that this lack of documentation could have resulted in material non-compliance or improper expenditures of subaward funds by subawardees. Therefore, we believe that this finding does not warrant classification as a significant deficiency.

Finding 2: Non-compliance with the Bayh-Dole Act and NSF Provisions on Invention Disclosure and Patent Application

We agree with the finding.

Response to Recommendation 2(a): Rice has been working with an outside consultant to ensure that our revised policies on patent application are adequate, comply with NSF and federal regulations and are properly implemented. Internal training for Office of Technology Transfer (OTT) staff was conducted in November 2009. A draft copy of the revised procedures manual was provided to the auditor for review.

Response to Recommendation 2(b): Rice agrees to take a proactive role to create training to educate research personnel on federal awards with potential inventions regarding the Bayh-Dole Act and NSF invention reporting and disclosure requirements. This will be done by OTT staff. We anticipate offering the training beginning in the last quarter of calendar 2011.

We appreciate this opportunity to review your report in draft form. Please let me know if you have any questions about our response. We would be happy to discuss it with you.

Sincerely,



Appendix A: Technical Edits

P 7, first paragraph, pre-subaward stage - The statement that the risk assessment is one-time only ignores the on-going activities conducted during the audit period. Risk assessment continued via A-133 report reviews, invoice reviews and faculty input, such as authorizing invoices and subaward increases. We view risk assessment as an on-going, continuous process and not as a discrete action with a specific label.

Suggested revision: "This pre-subaward assessment is supplemented by reviews of subawardee A-133 reports and invoices and by obtaining faculty input on performance before incremental subaward funding is authorized."

P 7, third paragraph - we are not sure who might have said "we usually will not make a subaward to a high-risk candidate". We might issue a subaward, but only if we can identify ways to mitigate the potential risks. The erroneous statement that the risk assessment is performed on a one-time basis is repeated here.

Suggested revision: "...if a subaward candidate is assessed as high risk, they stated that Rice will only make the subaward if the potential risks can be adequately mitigated. Rice rarely makes subawards to high risk entities."

P 8, third paragraph - similar issue to the previous one. Rice does not issue subawards only to low risk and well-established universities.

Suggested revision: "... since Rice University predominately issues subawards to low risk and well-established universities...."

Notes to financial schedules, p 22, last paragraph - This seems to imply that Rice does not comply with GAAP. We suggest adding: While the award expenditure schedules appropriately show equipment purchases as expenditures, Rice University's financial statements reflect the correct treatment of these purchases as capital assets depreciated over their useful lives.

**APPENDIX B – PRIOR REVIEW AND AUDIT
FINDINGS**

PRIOR REVIEW AND AUDIT FINDINGS

NSF Desk Review 2006

The Desk Review Report states that “Although Rice University was able to articulate its procedures for accounting for unallowable costs, it has not adequately documented those policies and procedures so as to provide effective guidance for employees responsible for administering NSF-funded awards.”

Status: Resolved. Based on our review, we noted that Rice University has established accounting policies and procedures to account for unallowable costs to federal awards. These policies and procedures are posted on the university’s website so as to provide effective guidance for employees responsible for administering NSF-funded awards. Based on our interviews with the PIs and program administrators for the four NSF awards we audited, they are aware of such policies and procedures being posted on the university’s website.

Special account codes are set up to record all types of unallowable costs stated in OMB Circular A-21 – *Costs Principles for Higher Education Institutions*. In addition, sensitive account codes are set up for certain types of expenses which required special attention to ensure compliance with the award agreement and budget. These types of expenses include travel expenses, professional fees, equipment costs, subaward costs, administrative related costs, interest, fines and bad debt costs. Once an expense item coded with these special account codes is entered into the accounting system, *Banner*, it will be automatically routed to Research and Cost Accounting (RCA) for special review and approval before the transaction could finally be posted into *Banner*. If it is determined that the item is not allowable to the award, RCA will not allow the transaction to be posted into the award but will record the transaction into the Other Institutional Activities Unallowable Pool.

OMB Circular A-133 Single Audit FYE 06/30/07

Rice University’s OMB Circular A-133 single audit report for FYE 06/30/07 included a finding stating that three out of the 30 equipment transactions tested did not have the “vests with” and “condition” fields completed in the fixed asset system. The Property Assistant failed to input such information and the Property Administrator failed to identify the omissions in his review.

Status: Resolved. The three pieces of equipment in question are not related to NSF awards. Based on our review and test of control, we noted that Rice University has well established policies and procedures on property management. We also noted that the fixed asset system of Rice University maintains all the necessary information for each piece of equipment under the four NSF awards we audited in accordance with OMB Circular A-110. Per review of Rice’ University’s single audit report for FYEs 06/30/08 and 06/30/09, the finding had been resolved and no findings of the same nature were noted.

PRIOR REVIEW AND AUDIT FINDINGS

OMB Circular A-133 Single Audit FY 06/30/08

Rice University's OMB Circular A-133 single audit report for FYE 06/30/08 included a compliance finding stating that two out of the 33 equipment transactions tested had wrong locations recorded in the fixed asset system and one item did not have an asset identification tag. The departmental personnel did not follow the university's procedures that require tags to be affixed to the equipment and for location records to be updated when the equipment is moved.

Status: Resolved. The three pieces of equipment in question are not related to NSF awards. Based on our review and testing, we noted that Rice University has well established policies and procedures on property management. We also noted that the fixed asset system of Rice University maintains all the necessary information of each piece of equipment under the four NSF awards we audited in accordance with OMB Circular A-110. Per review of Rice University's single audit report for FYE 06/30/09, the finding had been resolved and no similar findings were noted. During our fieldwork, we performed physical observation on a sample of equipment and reviewed the required identification asset tag and determined if the location information in Rice University's fixed asset system is accurate without exception.

APPENDIX C – EXIT CONFERENCE

EXIT CONFERENCE

We conducted an exit conference on May 14, 2010 at Rice University in Houston, Texas. We discussed preliminary findings and recommendations noted during the audit. Representing Rice University were:

Name	Title
[REDACTED]	[REDACTED]

Representing Mayer Hoffman McCann P.C. were:

Name	Title
[REDACTED]	[REDACTED]

HOW TO CONTACT
THE OFFICE OF INSPECTOR GENERAL

Internet

www.oig.nsf.gov

Email Hotline

oig@nsf.gov

Telephone

703-292-7100

Toll-free

1-800-428-2189

Fax

703-292-9158

Mail

Office of Inspector General
National Science Foundation
4201 Wilson Blvd., Suite 1135
Arlington, VA 22230
