National Science Foundation • Office of Inspector General
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MEMORANDUM

Date: March 31, 2015

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. 15-1-014
University of Wisconsin at Madison

This memo transmits Cotton & Company's (C&C) report for the audit of costs totaling $270 million charged by the University of Wisconsin at Madison (UWM) to its sponsored agreements with NSF during the period April 1, 2010 through March 31, 2013. The objectives of the audit were to (1) identify and report on instances of unallowable, unallocable, and unreasonable costs from the transactions tested; (2) to identify and report on instances of noncompliance with regulations, federal financial assistance requirements, and provisions of the NSF award agreements as they relate to the transactions tested; and (3) determine the reasonableness, accuracy, and timeliness of the awardee's ARRA quarterly reporting, including reporting of jobs created under ARRA and grant expenditures for the most recent quarters.

The auditors determined that $1,669,588 in costs that UWM charged to its NSF sponsored agreements did not always comply with applicable NSF and Federal requirements. Specifically, the auditors questioned $1,276,668 in senior personnel salary that exceeded NSF's two-month limit; $192,707 of unreasonably allocated leave accrual payouts; $70,189 of inappropriately allocated equipment expenses; $56,965 of expenses incurred after the award period had expired; $35,592 of unreasonable consulting expenses; $30,107 of unallowable relocation expenses; and $7,360 of unreasonable travel expenses.

The auditors also found that UWM properly accounted for and segregated NSF ARRA funded awards in its accounting system. Additionally, UWM's ARRA reports were reasonable, accurate, and timely. For the quarters ending December 31, 2012 and March 31, 2013, expenditures and jobs creation were verified without significant exceptions. However, the auditors found that $260,926 in unallowable costs (of the $1,669,588 in total questioned costs) were charged to ARRA awards.

The auditors recommended that NSF address the findings by requiring UWM to resolve the questioned costs of $1,669,588 and strengthen administrative and management processes and controls. UWM did not agree with the majority of the findings and recommendations. UWM's response, described in the report, is included in its entirety in Appendix B.

Appendices A and D contain summaries of the unallowable items that were questioned. Additional information concerning the questioned items was provided separately by the OIG to the Division of Institution and Award Support, Cost Analysis and Audit Resolution Branch. Please coordinate with our office during the six month resolution period, as specified by OMB Circular A-50, to develop a mutually agreeable resolution of the audit findings. Also, 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.

OIG Oversight of Audit

To fulfill our responsibilities under generally accepted government auditing standards, the Office of Inspector General:

- Reviewed C&C'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 C&C officials, as necessary, to discuss audit progress, findings, and recommendations;
- Reviewed the audit report, prepared by C&C to ensure compliance with generally accepted government auditing standards; and
- Coordinated issuance of the audit report.

C&C is responsible for the attached auditor's report on UWM and the conclusions expressed in the report. We do not express any opinion on the conclusions presented in C&C's audit report.

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 Louise Nelson at 303-844-4689 or Ken Lish at 303-844-4738.

Attachment

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UNIVERSITY OF WISCONSIN AT MADISON

PERFORMANCE AUDIT OF INCURRED COSTS FOR NATIONAL SCIENCE FOUNDATION AWARDS FOR THE PERIOD APRIL 1, 2010, TO MARCH 31, 2013

NATIONAL SCIENCE FOUNDATION
OFFICE OF INSPECTOR GENERAL

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NATIONAL SCIENCE FOUNDATION
PERFORMANCE AUDIT OF INCURRED COSTS
UNIVERSITY OF WISCONSIN AT MADISON

I. BACKGROUND

The National Science Foundation (NSF) is an independent federal agency whose mission is "to promote the progress of science; to advance the national health, prosperity, and welfare; and to secure the national defense." Through grant awards, cooperative agreements, and contracts, NSF enters into relationships with non-federal organizations to fund research and education initiatives and to assist in supporting its internal financial, administrative, and programmatic operations.

Most federal agencies have an Office of Inspector General (OIG) that provides independent oversight of the agency's programs and operations. Part of the NSF OIG's mission is to conduct audits and investigations to prevent and detect fraud, waste, and abuse. In support of this mission, the NSF OIG may conduct independent and objective audits, investigations, and other reviews to promote the economy, efficiency, and effectiveness of NSF programs and operations, as well as to safeguard their integrity. The NSF OIG may also hire a contractor to provide these audit services.

The NSF OIG issued a solicitation to engage a contractor to conduct a performance audit of incurred costs for the University of Wisconsin at Madison (UW-Madison). This performance audit entailed evaluating UW-Madison's quarterly American Recovery and Reinvestment Act (ARRA) reporting, as well as testing a sample of expenditures that UW-Madison allocated to NSF awards during the audit period. Our audit of UW-Madison, which covered the period from April 1, 2010, through March 31, 2013, encompassed more than $270 million of expenditures that UW-Madison claimed on Federal Financial Reports (FFRs) related to 1,146 NSF awards.

Cotton & Company LLP (referred to as "we") conducted a performance audit of expenditures that UW-Madison reported on the FFRs that it filed with NSF for cost reimbursement under its grant awards. We evaluated the accuracy, reasonableness, and timeliness of UW-Madison's quarterly American Recovery and Reinvestment Act (ARRA) reporting. We also evaluated whether the costs claimed were allocable, allowable, reasonable, and in conformity with NSF award terms and conditions, as well as with applicable federal financial assistance requirements. This performance audit, conducted under Contract No. [redacted], was designed to meet the objectives identified in the "Objectives, Scope, and Methodology" section of this report.

We conducted this performance audit in accordance with generally accepted government auditing standards, issued by the Government Accountability Office. We communicated the results of our audit and the related findings and recommendations to UW-Madison and the NSF Office of Inspector General.

II. AUDIT RESULTS

The objectives of this audit included determining the reasonableness, accuracy, and timeliness of the awardee's quarterly ARRA reporting, as well as identifying and reporting on instances of unallowable, unallocable, and unreasonable costs charged to various NSF awards through transaction-based testing.

While evaluating the reasonableness, accuracy, and timeliness of UW-Madison's ARRA reporting, we found that the universe of NSF ARRA-funded awards included approximately $13.5 million in expenditures across 67 NSF awards. We determined that UW-Madison properly accounted for and segregated NSF ARRA-funded awards in its accounting system, and that the ARRA reports were reasonable, accurate, and timely. For the quarters ending December 31, 2012, and March 31, 2013, we verified expenditures and jobs creation without significant exceptions. We also tested the allowability of expenditures reported for ARRA awards in conjunction with the other NSF awards, and found $260,926 of questioned costs related to expenses charged to ARRA-funded awards, as discussed in the findings below.

To identify and report on instances of unallowable, unallocable, and unreasonable costs, we performed transaction-based testing on the entire universe of expenditures that UW-Madison claimed on its FFRs during our audit period. This universe encompassed $270,130,383 in costs claimed on 1,146 NSF awards. Based on the results of our testing, we found a number of instances in which UW-Madison did not comply with all federal, NSF, and university-specific award requirements. As a result, we questioned $1,669,588 of costs claimed by UW-Madison during the audit period. Specifically we found:

- $1,276,668 of salary costs for senior personnel that exceeded NSF's two-month maximum for salary allocation
- $192,707 of unreasonably allocated leave accrual payouts
- $70,189 of inappropriately allocated equipment expenses
- $56,965 of expenses incurred after the NSF award period had expired
- $35,592 of unreasonable consulting expenses
- $30,107 of unallowable relocation expenses
- $7,360 of unreasonable travel expenses

Exhibit A of this report provides a breakdown of the questioned costs by finding.

Finding 1: Salary Costs for Senior Personnel That Exceeded NSF's Two-Month Maximum for Salary Allocation

UW-Madison employees that were identified as senior personnel on NSF grants allocated more than two months (or the maximum number of approved months) of their salaries to NSF awards without receiving specific approval to do so.

The NSF Award and Administration Guide, Chapter V, Section B.1.a.(ii)(a) states that NSF normally limits the amount of salary that senior project personnel may allocate to NSF awards to no more than two months of their regular salary in any one year. The guidelines specifically assert that if the grantee anticipates the need to allocate senior personnel salary in excess of two

months, the excess compensation must be requested in the proposal budget, justified in the budget support documentation, and specifically approved by NSF in the award notice. In instances in which the grantee specifically requests to allocate more than two months of a senior personnel member's salary to NSF, the total amount of salary allocable is limited to the maximum number of months that NSF specifically approves within the applicable budget documents.

To evaluate compliance with the NSF Award and Administration Guide, we obtained the university's general ledger and extracted all payroll charged to NSF for employees identified as senior personnel. We summarized the payroll data by employee ID and academic year (AY)[1] and compared it to each employee's approved salary in order to determine what proportion of the employee's salary was allocated to NSF during each AY tested. We then reviewed the NSF budgets for each grant that employees allocated effort to during the AY and evaluated whether the proportion of each employee's salary allocated and charged to the grant was greater than the proportion allowable. We found 45 instances in which the proportion of an employee's salary charged to NSF-funded projects was more than the allowable proportion per NSF policies, as follows:

Instance No.	Employee Ref No.	AY	AY Salary	Allocated to NSF	Allowable Months	Allowable Salary[2]	Unallowable Salary
1	1	2010-2011	$195,000	$44,298	2	$43,333	$965
2	2	2010-2011	171,609	108,436	4.07	77,605	30,831
3	2	2011-2012	171,609	110,696	4.07	77,605	33,091
4	2	2012-2013	188,770	65,211	2	41,948	23,263
5	3	2012-2013	190,000	64,388	2	42,222	22,166
6	4	2009-2010	162,929	44,148	2	36,206	7,942
7	4	2010-2011	162,929	53,754	2	36,206	17,548
8	5	2011-2012	101,359	27,150	2	22,525	4,625
9	6	2011-2012	137,964	31,770	2	30,659	1,111
10	7	2010-2011	104,752	35,205	2.13	24,792	10,413
11	8	2011-2012	101,689	72,030	4.25	48,020	24,010
12	9	2009-2010	181,799	50,452	2	40,400	10,052
13	9	2010-2011	191,799	67,269	2	42,622	24,647
14	9	2011-2012	199,299	48,718	2	44,289	4,429
15	10	2010-2011	90,337	25,094	2	20,075	5,019
16	11	2010-2011	122,995	40,579	2	27,332	13,247
17	12	2010-2011	104,742	110,587	4.07	47,366	63,221
18	12	2011-2012	140,000	87,304	2	31,111	56,193
19	13	2009-2010	80,107	26,157	2	17,802	8,355
20	14	2011-2012	139,844	43,469	2	31,076	12,393
21	15	2009-2010	87,918	26,265	2	19,537	6,728
22	15	2010-2011	87,819	26,076	2	19,515	6,561

[1] UW-Madison monitors salary activity using an academic year that begins on September 1 of one year and ends on August 31 of the following year.

[2] Each employee identified was classified as Academic Year Faculty, meaning that their AY salary amount was based on a nine-month appointment. We therefore calculated the allowable salary by dividing each employee's AY salary by nine and multiplying the resultant monthly salary by the number of allowable months.

Instance No.	Employee Ref No.	AY	AY Salary	Allocated to NSF	Allowable Months	Allowable Salary[2]	Unallowable Salary
23	15	2011-2012	103,242	28,678	2	22,942	5,736
24	16	2010-2011	89,573	27,375	2.13	21,199	6,176
25	16	2011-2012	89,573	27,419	2.13	21,199	6,220
26	17	2009-2010	85,901	23,276	2	19,089	4,187
27	18	2011-2012	62,995	20,998	2	13,999	6,999
28	19	2010-2011	120,608	31,417	2	26,802	4,615
29	20	2009-2010	85,216	23,613	2	18,937	4,676
30	20	2010-2011	90,216	53,410	2	20,048	33,362
31	20	2011-2012	90,216	38,740	2	20,048	18,692
32	21	2010-2011	105,000	24,529	2	23,333	1,196
33	22	2011-2012	90,975	64,289	2	20,217	44,072
34	23	2010-2011	103,815	40,328	3.13	36,105	4,223
35	24	2009-2010	85,000	27,283	2.13	20,117	7,166
36	25	2011-2012	82,000	47,833	4.25	38,722	9,111
37	26	2011-2012	120,000	40,000	2	26,667	13,333
38	27	2010-2011	101,729	24,929	2	22,606	2,323
39	28	2010-2011	101,729	24,656	2	22,606	2,050
40	29	2011-2012	96,000	32,000	2	21,333	10,667
41	30	2011-2012	92,000	30,667	2	20,445	10,222
42	31	2011-2012	93,793	28,659	2	20,843	7,816
43	32	2011-2012	76,000	25,333	2	16,889	8,444
44	33	2011-2012	75,000	20,833	2	16,666	4,167
45	34	2011-2012	87,000	29,000	2	19,333	9,667

UW-Madison understands that NSF generally limits the allocation of salaries for senior project personnel to no more than two months of their regular salary in any one year; however, it believes that the NSF Grant Proposal Guide (GPG) allows grantees to allocate more than two months of a senior personnel member's salary when the allocation is justified and disclosed in the budget and in the "Current and Pending Support" documents provided to NSF as part of the grant proposal. The university also believes that these GPG instructions only apply in the event that a need for extra salary allocation is recognized at the time of the proposal; it noted that some of the questioned salary costs identified relate to situations in which a need for increased effort was recognized after award and therefore would not have required prior approval based on its interpretation of the GPG. The university contends that NSF's Award and Administration Guide does not require grantees to obtain prior approval for senior personnel to allocate more than two months' compensation to an award, as this requirement was not included in the approval matrix, and that the university is therefore not required to request approval from NSF to re-budget funding in this situation. UW-Madison specifically references the Proposal Preparation and Award Administration Frequently Asked Questions (FAQ) document available on NSF's website, which states that NSF does not require prior approval to re-budget senior personnel salary in this manner.

The NSF OIG contends that simply including information on budgeted salary for other sponsored projects within the "Current and Pending Support" document provided to NSF does not fulfill the NSF Award and Administration Guide's requirement that any compensation for senior personnel in excess of two months of their regular AY salary must be disclosed in the

proposal budget, justified in the budget support documentation, and specifically approved by NSF in the award notice. While we agree that the *Grantee Notifications to and Requests for Approval from the National Science Foundation* matrix included in NSF's Award and Administration Guide does not specifically require grantees to obtain approval before allocating more than two months of a senior personnel member's compensation to an award, the matrix also states, "This listing of Notifications and Requests for Approval is not intended to be all-inclusive." As this requirement was not specifically waived, UW-Madison should have followed the guidance in Chapter V, Section B.1.a(ii)(a). In addition, while the FAQ referenced by UW-Madison does indicate that grantees are not required to obtain prior approval from NSF to exceed the two-month salary limit, the FAQ responses do not represent authoritative guidance and therefore do not overrule the Award and Administration Guide requirements.

UW-Madison was not able to provide any documentation to verify that NSF had given express permission, either through grant budgets or through subsequent approvals, for the identified employees to allocate more than two months (or the maximum number of months identified) of their salary to NSF. We are therefore questioning $1,276,668[3] of salary, fringe, and indirect expenses charged to NSF that exceeded the allocation limits.

Recommendations

We recommend that NSF's Director of the Division of Institution and Award Support request that UW-Madison:

1. Repay NSF the $1,276,668 of questioned costs.

2. Strengthen the administrative and management controls and processes over the amount of senior personnel salaries charged to NSF awards.

3. Implement university-wide procedures to ensure that all departments are monitoring the allocation of senior personnel salaries.

University of Wisconsin at Madison Response: UW-Madison believes that salaries for all 45 employees are appropriately allocated to NSF awards. The university claims that its senior personnel salary needs were identified at the time of the proposal in each of the cases identified above, and that it included the salary to be paid within the budget and budget justification. UW-Madison believes that this information, combined with information in the Current and Pending Support document, provides a complete snapshot of intended and potential effort and the time period over which the expended effort may occur.

In addition, UW-Madison noted that the NSF GPG's instructions on the inclusion of salary in excess of the two-month limit are provided only in the event that a need for such compensation is recognized at the time of proposal. The university stated that several of the questioned salary costs involved situations in which a need for increased effort was recognized post-award, and as NSF policy provides re-budgeting authority without prior NSF approval, these costs should not be questioned.

[3] See Appendix D for details regarding how this amount was calculated.

UW-Madison also referred to the NSF Proposal Preparation and Award Administration Guide FAQ published in November 2010, an updated FAQ document released in January 2013, recent changes to the NSF GPG, and a January 27, 2015, NSF webinar, all of which state that under normal re-budgeting authority, an awardee can internally approve an increase of person-months devoted to the project, even if doing so results in salary support for senior personnel exceeding the two-month salary rule. UW-Madison emphasizes that, as the recipients of federal funds, it must be able to rely on the oral and written interpretations provided by staff in the NSF Policy Office in order to manage awards responsibly. As the clarifications provided referred to existing policy rather than to a change in policy, UW-Madison asserts that the senior personnel costs are allowable.

Auditors' Additional Comments: Our position regarding the finding does not change. UW-Madison references guidance provided through a number of sources; however, the only source that was applicable during the majority of the audit's period of performance (POP) was the November 2010 FAQ, which did not expressly state that the two-month salary limit could be exceeded through normal re-budgeting authority. The rest of the guidance referenced was not available during the majority of the audit's POP and therefore would not have supported the allocation methodology used at the time these expenses were incurred. Additionally, while the referenced documents and presentations may interpret NSF policies that were effective during the audit's POP, the interpretations do not represent authoritative guidance and therefore do not overrule NSF's Award and Administration Guide, which requires specific approval to allocate more than two months of a senior personnel member's salary to NSF during a one-year period.

Finding 2: Leave Accrual Payouts Unreasonably Allocated to NSF Awards

UW-Madison unreasonably allocated $192,707 of accumulated leave to NSF awards. Full-year faculty employees[4] are permitted to save their unused vacation time within an Accumulated Leave Reserve Account (ALRA). The university's cost accounting policies state that these accumulated balances are expensed as incurred, as a direct cost to the source of the employee's funding. As a result, when an employee who has a positive balance within their ALRA account leaves the university, the lump-sum payment of all leave accumulated by the employee is charged to the funding source for the employee's final month of effort, regardless of when the leave was actually earned. Due to this methodology, the university is charging an unreasonable proportion of accumulated leave to NSF awards.

Per 2 Code of Federal Regulations (CFR) 220, Appendix A, Section J.10, compensation for personal services, including salaries and fringe benefits, covers all amounts paid currently or accrued by the institution for services that employees rendered during the POP under sponsored agreements. As a result of UW-Madison's accumulated leave methodology, however, we noted several instances in which the university charged expenses to grants despite the fact that the expenses were related to services rendered before the grant period became effective. Specifically, while each employee identified below did allocate a portion of their effort to the NSF awards to which their leave payouts were allocated, we found nine instances in which the accumulated

[4] Academic-year faculty at UW-Madison do not accrue vacation leave; this finding therefore relates solely to 12-month faculty.

leave that was charged to the grant may have been earned by the employee before the effective date of the award:

Employee Ref No.	Employee's Start Date	NSF Award No.	Award Effective Date	Lump-Sum Payout Date
51	03/01/1976	[redacted]	04/01/2006	12/27/2010
369	11/13/1978	[redacted]	10/01/2010	1/24/2013
371	03/02/1983	[redacted]	09/15/2010	08/26/2011
373	07/09/2001	[redacted]	04/01/2006	06/23/2010
378	08/08/1996	[redacted]	09/01/2011	11/15/2012
381	01/01/2007	[redacted]	09/01/2009	06/11/2011
382	09/01/2006	[redacted]	09/01/2009	10/21/2011
384	07/01/1978	[redacted]	04/01/2006	03/23/2011
386	09/01/1986	[redacted]	04/01/2006	09/24/2010

In addition, 2 CFR 220 Appendix A, Section J.10.b(1)(b) states that the apportionment of employees' salaries and wages chargeable to more than one sponsored agreement or other cost objective must be accomplished by methods that will produce an equitable distribution of charges for the employees' activities. Based on this criterion, we did not note any exceptions in cases in which lump-sum payments were provided to employees who allocated all of their effort to one award during their appointment at the university. In each of the nine instances identified above, however, the employees allocated their effort to more than one funding source during their appointment at the university, but the university did not apportion to each funding source its relative share of the associated expenses, as required.

UW-Madison claims that these lump-sum payments are calculated and allocated appropriately in accordance with its cost accounting policies, which have been approved by its cognizant federal agency, and therefore no exceptions should be noted. In response to our evaluation that the allocation methodology used was not proportional to the benefits received by NSF, UW-Madison personnel provided a spreadsheet detailing all salary earned by each of the identified individuals from July 1, 2004, through the date of their retirement. The data indicated that most of the employees were working on NSF projects for a large proportion of the time period identified, as follows:

Employee Ref No.	Employee Start Date	Percentage of Salary Paid by NSF Since July 1, 2004
51	03/01/1976	91%
369	11/13/1978	93%
371	03/02/1983	100%
373	07/09/2001	88%
378	08/08/1996	83%
381	01/01/2007	98%
382	09/01/2006	4%
384	07/01/1978	100%
386	09/01/1986	77%

While many of these employees spent the majority of their time on NSF projects, the detailed payroll data provided by the university shows that their time was not spent solely on the NSF projects to which their lump-sum payouts were charged, but on multiple NSF awards and/or other activities. It was therefore inappropriate to allocate all of the employees' accumulated leave to the award on which they were working at the end of their careers. In addition, seven of the nine employees identified began working at the university before July 2004; as a result, a summary of their payroll earned since July 1, 2004, does not provide an accurate depiction of where these employees allocated the majority of their effort while working at the university.

UW-Madison's cost accounting policies violate rules imposed by 2 CFR 220. We are therefore questioning $192,707 of salary-related expenses that were unreasonably allocated to NSF.

Employee Ref No.	NSF Award No.	Fiscal Year	Direct	Fringe	Indirect	Total
51	[redacted]	2010-2011	[redacted]	[redacted]	[redacted]	$90,360
369	[redacted]	2012-2013	[redacted]	[redacted]	[redacted]	43,751
371	[redacted]	2011-2012	[redacted]	[redacted]	[redacted]	19,214
373	[redacted]	2010-2011	[redacted]	[redacted]	[redacted]	10,012
378	[redacted]	2012-2013	[redacted]	[redacted]	[redacted]	10,366
381	[redacted]	2010-2011	[redacted]	[redacted]	[redacted]	2,220
382	[redacted]	2011-2012	[redacted]	[redacted]	[redacted]	3,481
384	[redacted]	2010-2011	[redacted]	[redacted]	[redacted]	10,966
386	[redacted]	2010-2011	[redacted]	[redacted]	[redacted]	2,337
Total			[redacted]	[redacted]	[redacted]	**$192,707**

Recommendations

We recommend that NSF's Director of the Division of Institution and Award Support request that UW-Madison:

1. Repay NSF the $192,707 of questioned costs.

2. Develop and implement new policies and procedures related to allocating employee leave payouts that result in an equitable distribution of salary expenses on a basis that is consistent with the periods in which the salary was earned.

University of Wisconsin at Madison Response: UW-Madison believes that accumulated leave balances were reasonable and appropriate charges to NSF awards. The university refers to 2 CFR 220, Appendix A, Section C.3., *Reasonable costs*, which states that a factor in determining reasonableness is the extent to which the actions taken with respect to the incurrence of the cost are consistent with established institutional policies. UW-Madison also refers to 2 CFR 200.34 (a), which states that expenditures may be reported on a cash or accrual basis, as long as the methodology is disclosed and is consistently applied. As UW-Madison consistently applies an approach of treating accumulated leave on a cash basis as direct costs and discloses its treatment of leave accrual payouts in its Disclosure Statement, F&A Rate Agreement, and Effort Guidelines, the university believes that these costs are reasonable and allowable.

Auditors' Additional Comments: Our position regarding the finding does not change. While UW-Madison does consistently allocate accumulated leave payout in accordance with 2 CFR 220, Appendix A, Section C.3, this methodology does not represent an equitable distribution of the costs incurred on sponsored projects, as required by 2 CFR 220, Appendix A, Section J.10.b(1)(b). The university may use either a cash-basis or an accrual-basis methodology to account for accumulated leave payouts; however, in both cases the methodology must allocate an equitable portion of the employee's leave payout to each funding source the employee worked on while earning the accumulated leave. Based on our review, UW-Madison's current methodology resulted in NSF grants being allocated an unreasonable portion of employees' accumulated leave when they left the university. Our finding therefore does not change.

Finding 3: Methodology Used to Allocate Equipment Expenses Not Proportional to the Benefits Received

Equipment purchased by UW-Madison was used to achieve more than one cost objective; however, these costs were not allocated on a reasonable basis according to the benefits acquired. UW-Madison personnel did not maintain adequate documentation to justify the methodology used to allocate the expenses to NSF-funded awards. As the methodology appears to be unreasonable, we are questioning $70,189 in inappropriately allocated expenses.

Per 2 CFR 220, Appendix A, Section C.4.d(3), if a cost benefits two or more projects or activities in proportions that can be determined without undue effort or cost, the cost should be allocated to the projects based on the proportional benefit. If the relevant proportions cannot be determined due to the interrelationship of the work involved, the costs may be allocated or transferred to the benefited projects on any reasonable basis. UW-Madison did not allocate equipment expenses based on the proportional benefits received by the NSF-sponsored awards, nor did it use a reasonable basis relative to the projects that benefitted from the equipment purchase.

NSF Award No. 0628560 had a 5-year POP that began October 1, 2006, and ended September 30, 2011. On September 14, 2011, 16 days before the grant's POP expired, UW-Madison personnel ordered an Autonomous Underwater Vehicle (AUV) from [redacted] The total cost of this equipment was $71,015. Of this amount, $48,301 (68 percent) was allocated to this NSF award. A total of $21,888 (31 percent) was allocated to NSF Award No. 0941510, and $826 (1 percent) was allocated to general university funding sources. According to UW-Madison personnel, the costs were allocated based on the estimated benefit to the project; however, as this equipment was available for less than 1 percent of NSF Award No. 0628560's POP, the allocation of 68 percent of the equipment's price to this NSF award does not appear to have been based on the relative benefit this award received.

In addition, the methodology used to allocate the expense was not appropriately based on the benefits that each funding source received, as required by 2 CFR 220 Appendix A, Section C.4.d(3). According to the university, the equipment purchased was directly applicable in obtaining physical limnology measurements (NSF Award No. 0628560), advancing network science (NSF Award No. 0941510), and assisting in research funded by the National Oceanic and Atmospheric Administration (NOAA). Costs incurred to purchase the AUV were allocated

to NSF Award No. 0628560 and NSF Award No. 0941510; however, none of the incurred expenses were allocated to NOAA, even though NOAA-funded projects benefitted from the purchase of this equipment.

As the methodology used to allocate the AUV expenses was unreasonable, did not represent an equitable disbursement of the costs based on the benefits that each funding source would receive, and was not supported by adequate documentation, we were not able to verify the appropriate percentage of the cost that should have been allocated to NSF. We are therefore questioning all expenses related to the purchase of the AUV that were charged to NSF Award No. 0628560 and NSF Award No. 0941510.

NSF Award No.	Fiscal Year	Questioned Costs		
		Direct	Indirect	Total
0628560	2011-2012	$48,301	$0	$48,301
0941510	2011-2012	21,888	0	21,888
Total		**$70,189**	**$0**	**$70,189**

Recommendations

We recommend that NSF's Director of the Division of Institution and Award Support request that UW-Madison:

1. Repay NSF the $70,189 of questioned costs.

2. Strengthen the administrative and management controls and processes over allocating expenses for equipment and supplies to sponsored funding sources.

3. Implement processes and procedures that require documentation of the methodology used to allocate expenses to sponsored projects, as well as a justification for how the methodology was determined.

University of Wisconsin at Madison Response: UW-Madison believes that the allocation of expenses for the AUV were appropriate. The university claims that the costs were reasonable, allocable, and required for the furtherance of both NSF grants charged, and that they were therefore allowable on both grants in accordance with the NSF Award and Administration Guide. UW-Madison contends that the methodology used to allocate the cost of this piece of equipment was based on the approximate percentage of estimated benefit to each project and is not flawed because 2 CFR Part 220 allows costs to be allocated on any reasonable basis if the precise proportion cannot be determined. UW-Madison's response states that the activities performed on each of the NSF grants were interrelated and the precise benefit could not be determined; however, its estimate was reasonable, and the costs should therefore be allowable.

Auditors' Additional Comments: Our position regarding the finding does not change. It was unreasonable for UW-Madison to allocate 68 percent of the costs incurred to purchase the AUV to an NSF grant that was expiring 16 days after the purchase was initiated. In addition, the methodology used to allocate the expenses among funding sources was flawed. UW-Madison

personnel stated that the AUV was used not only to support multiple NSF awards, but also to support a NOAA-funded grant. As none of the AUV expenses were allocated to NOAA, it is clear that the expenses incurred were not equitably distributed based on the benefits received, as required by 2 CFR 220, Appendix A, Section C.4.d(3).

Finding 4: Expenses Incurred After the Grant's Period of Performance Had Expired

Purchase orders for equipment and other supplies allocated to NSF grants were submitted after the grant's POP had expired. As a result, UW-Madison personnel inappropriately allocated to expired NSF awards $56,965 of expenses related to equipment and supplies.

Per 2 CFR 220, Appendix A, Section C.4.a, a cost is allocable to a particular cost objective if the goods or services involved are chargeable or assignable to such cost objective in accordance with relative benefits received or other equitable relationship.

In addition, the NSF Award and Administration Guide, Chapter V, Section A.2.c specifically states that NSF funds may not be expended subsequent to the expiration date of the grant, except to liquidate valid commitments that were made on or before the expiration date. As the commitments to incur the costs identified below were not made until after the NSF award periods had expired, these expenses are expressly unallowable per NSF policies and procedures.

NSF Award No. 0446017 had a POP of March 1, 2005, through February 28, 2011. On May 10, 2011, or 71 days after the grant's POP had expired, the university allocated to this award $20,816 of expenses incurred to purchase equipment that would provide measurements in support of modeling lake microbial dynamics. The invoice for these expenses was dated April 26, 2011, or 57 days after the grant's POP had expired. The associated purchase order was dated March 8, 2011, or 8 days after the POP had expired.

On March 29, 2011, or 29 days after the grant's POP had expired, the university allocated to this award $7,837 of supplies related to modeling lake microbial dynamics. The invoice for these expenses was dated March 14, 2011, or 14 days after the grant's POP had expired. The associated purchase order was dated March 4, 2011, or 4 days after the grant's POP had expired.

On April 1, 2011, or 32 days after the grant's POP had expired, the university allocated to this award $5,868 of supplies related to modeling lake microbial dynamics. The invoice for these expenses was dated March 16, 2011, or 16 days after the grant's POP had expired. The associated purchase order was dated March 3, 2011, or 3 days after the grant's POP had expired.

UW-Madison stated that it received specific permission to purchase the aforementioned supplies and equipment under NSF Award No. 0446017. The university submitted a re-budgeting request to NSF on February 11, 2011, in which it requested permission to reallocate funds initially budgeted for a sub-award and purchase the identified equipment instead. The re-budgeting request was reviewed by NSF when it was submitted; however, as the purchase orders were not created until after the grant's POP had expired, the expenses are unallowable per the NSF Award and Administration Guide.

NSF Award No. 0911559 had a POP of August 1, 2009, through July 31, 2012. On October 17, 2012, or 78 days after the grant's POP had expired, the university allocated to this award $17,017 of expenses incurred to purchase computer equipment. The invoice supporting this expense was dated September 27, 2012, or 58 days after the grant's POP had expired, and showed that the equipment was ordered on August 8, 2012, or 8 days after the POP had expired. The associated purchase order was dated August 2, 2012, or 2 days after the grant's POP had expired.

UW-Madison claimed that toward the end of the grant cycle, it became clear that the university's computational resources were not adequate to finish the project in the time remaining on the grant, and it therefore purchased these computers to eliminate this bottleneck. The university provided a purchase requisition form dated July 27, 2012 (4 days before the grant's POP expired) to support that the equipment was ordered within the grant's POP; however, a purchase requisition does not represent a valid commitment. The university also provided an e-mail dated July 27, 2012, in which an employee states that they placed the order for this equipment; however, the e-mail does not provide sufficient support to verify that the equipment was ordered on this date. We are therefore using the date provided on the purchase order. Additional computing power may have been necessary toward the end of the grant's POP; however, as the purchase order was not created until after the grant's POP had expired, the expenses are unallowable per the NSF Award and Administration Guide.

NSF Award No. 0840494 had a POP of August 1, 2009, through July 31, 2012. On October 17, 2012, or 78 days after the grant's POP had expired, the university allocated to this award $5,672 of expenses incurred to purchase computer equipment. The invoice supporting these expenses was dated September 27, 2012, or 58 days after the grant's POP had expired, and showed that the equipment was ordered on August 8, 2012, or 8 days after the POP had expired. The associated purchase order was dated August 2, 2012, or 2 days after the grant's POP had expired.

NSF Award No. 0840494 was awarded to purchase a modern computer cluster for use by the entire departmental research and teaching community. UW-Madison stated that there was a small amount of money left at the end of the grant's POP, and it therefore combined this leftover amount with the funding remaining on NSF Award No. 0911559 to purchase additional servers for the computer cluster. UW-Madison provided a purchase requisition form dated July 27, 2012 (4 days before the grant's POP expired) to support that the equipment was ordered within the grant's POP; however, a purchase requisition does not represent a valid commitment. The university also provided an e-mail dated July 27, 2012, in which an employee states that they placed the order for this equipment; however, this e-mail does not provide sufficient support to verify that the equipment was ordered on this date. We are therefore using the date provided on the purchase order. While the purchase of this equipment appears to be related to the scope of the grant, the purchase order was not created until after the grant's POP had expired, and the expenses are therefore unallowable per the NSF Award and Administration Guide.

As the equipment/supplies identified were not purchased until after each award's POP had expired, they would not have been available to benefit the NSF awards charged and therefore were not allocable to those awards per 2 CFR 220, Appendix A, Section C.4.a. Additionally, as valid commitments to incur these expenses were not made on or before the expiration date of the

NSF awards identified, these expenses are expressly unallowable per the NSF Award and Administration Guide. We are therefore questioning $56,965 of expenses associated with equipment purchased under NSF awards after the awards had expired.

NSF Grant No.	Fiscal Year	Questioned Costs		
		Direct	Indirect	Total
0446017	2010-2011	[redacted]	[redacted][1]	$38,084
0911559	2012-2013	[redacted]	[redacted]	17,017
0840494	2012-2013	[redacted][2]	[redacted]	1,864
Total		[redacted]	[redacted]	**$56,965**

[1]*Indirect costs were applied to the expenses incurred for the supplies purchased at a rate of [redacted] percent. Indirect expenses were not applied to the $20,816 equipment purchase.*

[2]*The sampled expenditure was for [redacted]; however, [redacted] of this expense was transferred off NSF Award No. 0840494 on February 25, 2013. We are therefore only questioning the remaining $1,864 of the sampled expense.*

Recommendations

We recommend that NSF's Director of the Division of Institution and Award Support request that UW-Madison:

1. Repay NSF the $56,965 of questioned costs.

2. Strengthen the administrative and management controls and processes over charging expenses to federal grants near or after the grant's expiration date. Processes could include implementing policies and procedures to ensure that all expenses charged to federal grants within the final 90 days of the grant's POP are reviewed for allowability, allocability, and reasonableness.

University of Wisconsin at Madison Response: UW-Madison does not agree with our recommendation to disallow these costs, as the purchase requisitions were placed before the grant's POP had expired. The university claims that administrative processes delayed the finalization of paperwork for the purchase of the identified equipment/supplies; however, as the purchased equipment/supplies were reasonable in terms of the purposes of the grants, these costs should be allowable.

Auditors' Additional Comments: Our position regarding the finding does not change. The NSF Award and Administration Guide, Chapter V, Section A.2.c specifically states that NSF funds may not be expended subsequent to the expiration date of the grant, except to liquidate valid commitments that were made on or before the expiration date. As the identified purchases did not represent valid commitments made before the NSF grants expired, these costs are expressly unallowable. Additionally, as UW-Madison would not have received the purchased equipment and supplies until after the grant's POP had expired, the NSF grant would not have benefitted from these purchases, and it was therefore unreasonable to allocate the expenses to these awards.

Finding 5: Unreasonable Consulting Expenses

In two cases, consultants performed work for UW-Madison during the effective period of a grant, but UW-Madison did not enter into an agreement to pay these consultants until near or after the grant's expiration date. Consequently, UW-Madison inappropriately allocated more than $35,000 of consultant expenses to NSF awards.

Per 2 CFR 220, Appendix A, Section C.4.b, costs allocable to a particular sponsored agreement may not be shifted in order to meet deficiencies caused by overruns or other fund considerations, to avoid restrictions imposed by law, or for any other reasons of convenience; however, we identified payments that appear to have been made to consultant service providers inappropriately as a matter of convenience.

NSF Award No. [redacted] had a POP from August 1, 2007, through January 31, 2012. On March 12, 2012, or 41 days after the grant's POP had expired, the university allocated to this award $19,162 of consultant expenses for work that [redacted] performed at the university from January 1 through August 15, 2011. While the work was performed during the grant's POP, [redacted] the invoice requesting payment for these services was dated March 6, 2012, or approximately 14 months after the work began, 6 months after the work was completed, and 1 month after the grant's POP had expired.

UW-Madison stated that it received all invoices for this agreement long after the work was performed, and as it received all of the invoices at once, they were paid as a single transaction. The university contends that the work performed by [redacted] was structured in the original grant budget as [redacted]; however, [redacted] The department therefore agreed to restructure [redacted] as a consultant position [redacted]. While the work performed [redacted] does appear to be related to the purpose of the grant, it is clear that this agreement was not reached until significantly after the grant's POP had expired, and the payment therefore appears to be unreasonably allocated to the grant.

As the consultant fees were provided to [redacted] who had not previously been paid as a consultant, after the grant period had expired, for work completed almost 6 months prior to the invoice date, the principal investigator (PI)'s decision to retroactively request payment for [redacted] as a consultant was unreasonable. In addition to the fact that this represents an unreasonable allocation based on a matter of convenience, the NSF Award and Administration Guide, Chapter V, Section A.2.c. does not allow grantees to expend funding subsequent to the expiration date of the grant except to liquidate valid commitments that were made on or before the expiration date. As the service agreement with [redacted] was not signed until after the grant period had expired, the university does not appear to have made a valid commitment to expend these funds before the grant's POP expired, and these expenses would therefore be expressly unallowable.

NSF Award No. 0822189 had a period of performance from September 15, 2008, through December 31, 2012. On January 16, 2013, or 16 days after the grant's POP had expired, the university charged to this grant $4,999 of consultant expenses for services provided by Rutgers

University. The invoice was dated December 27, 2012, and was purportedly for [redacted] project services provided from January 1 through December 15, 2012.

While one of the objectives of this NSF award was to prepare a video for [redacted] the budget did not contain any funding for consultant services to be performed at Rutgers. The PI stated that as the research unfolded, they relied on technical assistance from Rutgers to a greater extent than originally anticipated, and he therefore hired Rutgers to perform the invoiced work. While UW-Madison provided an invoice to support the amount of the expense, it did not provide any support to verify that UW-Madison and Rutgers had a service agreement in place for the work that was performed, or provide a description of how the PI determined the amount of the invoice. The PI stated, "The amount paid was the agreed upon amount between the PI and Rutgers to perform this service. The purchase was below $5,000 and made in accordance with UW-Madison Purchasing Policy and Procedure 3."

As these consultant fees were provided without an academic support services agreement in place, to a university that had not previously received funding from the NSF grant, the PI's decision to provide funding to Rutgers appears unreasonable per 2 CFR 220, Appendix A, Section C.4.b. In addition, 2 CFR 215, Subpart C § 215.21 (b)(7) states that a recipient's financial management system must include accounting records that are supported by source documentation. While UW-Madison was able to provide an invoice, it was unable to provide support for the agreement reached between Rutgers and UW-Madison. The lack of a services agreement, coupled with the fact that the amount of this expense is $1 below the purchasing threshold that would require additional approval, implies that the amount of the invoice was not calculated based on the work performed, but rather was determined by the university's purchasing policies.

As a result of the analysis shown above, we are questioning $35,592 associated with unreasonable consulting fees paid to university service providers at the end of NSF award periods.

NSF Award No.	Fiscal Year	Questioned Costs		
		Direct	Indirect	Total
[redacted]	2011-2012	[redacted]	[redacted]	[redacted]
0822189	2012-2013	[redacted]	[redacted]	[redacted]
Total		[redacted]	[redacted]	**$35,592**

Recommendations

We recommend that NSF's Director of the Division of Institution and Award Support request that UW-Madison:

1. Repay NSF the $35,592 of questioned costs.

2. Strengthen the administrative and management controls and processes over charging consultant expenses to federally sponsored awards. Processes could include:

a. Implementing new policies and procedures that require a more stringent review of all costs allocated to federally sponsored awards within the final 90 days of the grant's POP.

b. Ensuring that all payments made to consultants are supported by an academic services support agreement that is signed before the services are provided.

University of Wisconsin at Madison Response: UW-Madison believes that these consulting expenses were reasonable and allocable to these awards. It refers to 2 CFR 215, Section 215.2, which defines obligations as "the amounts of orders placed, contracts and grants awarded, services rendered and similar transactions during a given period that require payment by the recipient during the same or a future period." UW-Madison contends that the work performed by the consultants created an obligation during the POP that the university was required to liquidate. As UW-Madison was required to pay for such services, which were incurred during the project's POP and related to the project objectives, and did so within the 90 calendar days allowed per 2 CFR 215, the consultant expenses should be allowable.

Auditors' Additional Comments: Our position regarding the finding does not change. As UW-Madison did not enter into agreements to pay these consultants until near or after the grant's expiration date, it does not appear that these expenses represented valid commitments that the university intended to incur until the grant was set to expire. These expenses therefore do not represent reasonable, allowable costs and should not have been allocated to the NSF grant.

Finding 6: Unallowable Relocation Expenses

While NSF policies allow grantees to directly charge relocation expenses to NSF grants, the relocation fees must be charged in accordance with NSF's Award and Administration Guide. Relocation expenses that UW-Madison charged to one NSF grant were not in accordance with the applicable governing cost principles. As a result, UW-Madison inappropriately allocated more than $20,000 of relocation expenses to an NSF grant during our audit period.

In April 2012, UW-Madison hired a new [redacted] to work on NSF Award No. [redacted] "[redacted] The university agreed to cover the moving expenses that this employee incurred in relocating from [redacted] to Madison, Wisconsin. The university reimbursed more than $20,000 in relocation expenses, including costs to move the employee's personal possessions, as well as all insurance, storage, and delivery expenses associated with the move. As this employee was hired to fulfill a position related to NSF Award [redacted] the university allocated all of the reimbursed relocation expenses to this grant.

The NSF Proposal and Award Policies and Procedures Guide, Chapter V, Section C.4 states that relocation costs may be charged to an NSF award in accordance with the applicable governing cost principles, provided that the proposal for NSF support indicates that the grantee intends to hire a specific, named individual to perform full-time work on the project, and that such recruitment action is not disapproved by the grant terms.

While this position was identified in the grant budget, the budget did not specifically indicate that the university intended to hire this individual for work on the project. These expenses were therefore not appropriate per NSF's Award and Administration Guide.

UW-Madison agreed that this individual had not been identified in the NSF award budget, but claimed that, as the individual was not considered key personnel, the university was not required to notify NSF of the individual's recruitment and relocation. UW-Madison also noted that relocation costs are not among the items that require prior approval from NSF per the prior approval cost matrix provided in NSF's Award and Administration Guide. While we agree that relocation costs are not specifically identified in the prior approval cost matrix, we also noted that prior approval requirements are not specifically waived for relocation expenses. As the matrix states that the "listing of Notifications and Requests for Approval is not intended to be all inclusive," grantees should follow the relocation guidance available in Chapter V, Section C.4 of the Award and Administration Guide.

As the relocation fees applied to this NSF grant were not for named individuals identified in the grant proposal, and the university did not obtain specific permission from NSF to allocate relocation expenses for this employee, we determined that the expenses were not reasonably allocated to this NSF award. We are therefore questioning a total of $30,107 charged to the NSF grant, as follows:

NSF Award No.	Fiscal Year	Questioned Costs		
		Direct	Indirect	Total
[redacted]	2011-2012	[redacted]	[redacted]	$30,107

Recommendations

We recommend that NSF's Director of the Division of Institution and Award Support request that UW-Madison:

1. Repay NSF the $30,107 of questioned costs.

2. Strengthen the administrative and management controls and processes over allocating relocation expenses to sponsored projects. Processes could include strengthening internal procedures to ensure that NSF awards are not charged for relocation expenses for employees who were not identified as key personnel in the proposals submitted.

University of Wisconsin at Madison Response: UW-Madison believes that these expenses are allowable on this award, as it notified NSF of the change in personnel that resulted in the relocation expenses being allocated to the grant. The university refers to NSF's Policy and Procedure Guide, which does not include direct cost treatment of relocation expenses requiring prior approval and states that costs not specifically budgeted in an NSF award are allowable provided that prior approval is not required and costs are incurred consistently with the institution's applicable cost principles. UW-Madison's cost accounting principles state that costs that can be specifically identified with a particular sponsored agreement are charged directly to the benefitting sponsored agreement, and as the hired individual worked exclusively on the

sponsored project, the charging of these relocation expenses directly to this NSF grant was appropriate.

Auditors' Additional Comments: Our position regarding the finding does not change. The NSF Proposal and Award Policies and Procedures Guide, Chapter V, Section C.4 states that relocation costs may be charged to an NSF grant, provided that the NSF proposal specifically indicates that the grantee intends to hire a named individual for full-time work on the project. As the grant's budget did not identify the relocated individual as essential to the grant and did not include any funding to support relocation costs, and as no documentation was available to support that NSF was informed that the university intended to relocate this employee and charge those expenses to the grant, these expenses were unreasonably allocated to the grant.

Finding 7: Unreasonable Travel Expenses

UW-Madison charged $7,360 of unreasonable travel expenses to two NSF awards. These expenses were not reasonable or necessary for accomplishing the award objectives and did not benefit the NSF programs to which they were charged. The expenses therefore should not have been charged to the NSF awards.

The NSF Award and Administration Guide, Chapter V, Section A states that grantees should ensure that costs claimed under NSF grants are necessary, reasonable, allocable, and allowable under the applicable cost principles, NSF policy, and/or the program solicitation. Per 2 CFR 220, Appendix A, Section C.3, a cost may be considered reasonable if the nature of the goods or services acquired or applied, and the amount involved therefore, reflect the action that a prudent person would have taken under the circumstances prevailing at the time the decision to incur the cost was made. In addition, Section C4 of the CFR states that a cost is only allocable to a particular cost objective if the goods or services involved are chargeable or assignable to such cost objective in accordance with the relative benefits received or other equitable relationship. While UW-Madison provided documentation to support the travel costs incurred by its employees, the expenses were not supported as allocable, reasonable, or necessary in accordance with these cost principles.

According to UW-Madison, the PI of NSF Award No. [redacted] was unable to attend the one-week [redacted] Conference held in [redacted] in April 2012; [redacted] was therefore sent in his place to present a paper entitled [redacted] was reimbursed for expenses amounting to $3,047, all of which were allocated to this NSF award.

While [redacted] was [redacted] at the time of the trip, [redacted] did not allocate any of their effort to this award, but rather to other sponsored projects that the PI was involved in. [redacted] was not identified as a contributor to this project, nor was the paper presented at the conference mentioned in the annual report for this NSF award. These travel reimbursement expenses therefore do not appear to have benefitted NSF Award No. [redacted].

The PI of NSF Award No. [redacted] attended the annual [redacted] meeting in April 2010 and allocated all travel expenses incurred to this NSF award. As a result of our audit, university grant personnel discussed this expense with the PI and determined that it was incorrectly allocated to this grant. The university chose to reimburse NSF and transfer all of the expenses associated with this trip to a general funding source.

As the travel described above did not benefit the NSF grants charged, we determined that these expenses were unreasonably allocated to the identified NSF awards. We are therefore questioning $7,360 of expenses related to unallocable travel costs, as follows:

NSF Grant No.	Fiscal Year	Questioned Costs		
		Direct	Indirect	Total
[redacted]	2011-2012	[redacted]	[redacted]	$4,433
[redacted]	2009-2010	[redacted]	[redacted]	2,927
Total		[redacted]	[redacted]	**$7,360**

Recommendations

We recommend that NSF's Director of the Division of Institution and Award Support request that UW-Madison:

1. Repay NSF the $4,433 of questioned costs for NSF Award No. [redacted].

2. Provide support verifying that it has repaid the $2,927 of questioned costs for NSF Award No. [redacted].

3. Strengthen the administrative and management controls and processes over allocating travel expenses to federally sponsored awards. Processes could include documenting the purpose of all trips taken by employees who are not identified as key personnel on the sponsored program.

University of Wisconsin at Madison Response: UW-Madison believes that the expenses charged to NSF Award No. [redacted] are allowable because the [redacted] travel expenses were incurred to present a paper, co-authored by the PI of this award, that resulted from the work performed under this award. The university refers to NSF Award and Administration Guide Chapter VI, Section D.4.b., *Dissemination and Sharing of Research Results*, which states that investigators are expected to share with other researchers the primary data gathered during the course of work under NSF grants. UW-Madison claims that the travel expenses were directly related to the dissemination of research results produced by this award and that the travel expenses should therefore be allowable.

As mentioned previously, UW-Madison determined that the travel expenses charged to NSF Award No. [redacted] were not allowable on this project and issued a refund check to NSF on September 8, 2014.

Auditors' Additional Comments: Our position regarding the finding related to NSF Award No. [redacted] does not change. As the travel expenses charged to this NSF award were incurred by [redacted] who did not allocate any effort to this NSF grant, to present a paper that was not mentioned in the annual report for this award, it appears that this travel was not allocable to this funding source and therefore should not have been charged to this award.

Finding 8: Late Effort Certifications

UW-Madison's Policy on Effort, Commitments, and Effort Certification requires that employees provide effort certifications within 90 days of the date on which the effort statement becomes available. We found that for 26 of our 93 sampled salary transactions, employees had not certified the effort reports within the specified time period, including six instances in which the effort was not certified until after we had requested the effort certification as support for sampled transactions.

Under UW-Madison's effort confirmation system, employees who are committed to work on federally sponsored projects must certify the amount of their total work effort that is applicable to sponsored research. This certification must take place within 90 days of the payroll data being posted in the Electronic Certification and Reporting Tool (ECRT). While each salary transaction that we tested was supported by a signed effort certification, a significant number of these reports were not signed before the ECRT due date. We also noted that the effort reports provided to support six of the sampled transactions were not certified until after February 14, 2014, when we requested the supporting documentation.

UW-Madison personnel stated that federal policies and procedures do not include a requirement for the timeliness of effort certifications, and therefore the aforementioned instances should not be identified as exceptions. However, 2 CFR 220, Appendix A, Section J.10.a states that the payroll distribution system used to allocate salary expenses must be incorporated into the official records of the institution and must reasonably reflect the activity for which the employee is compensated. As UW-Madison's guidelines for effort reporting are incorporated into its official policies, the 90-day effort certification window functions as applicable criteria.

Because many PIs participate on multiple grant awards and are responsible for many employees, the PI's memory of the number and type of activities performed will be less reliable over time. Certifying officials generally rely on these memories when approving reported work activities for themselves and for other individuals who work for them, making it essential that all effort reports are certified on a timely basis.

Certifiers have multiple professional responsibilities according to their appointment at the university, and consequently have myriad professional demands at any given time. As a result, the certifiers completed the effort certifications significantly after the time period when the work was performed. For example, based on the documents we reviewed, UW-Madison personnel only recently certified effort expended on NSF grants more than 3 years ago.

Without procedures in place to ensure that faculty effort is verified on a timely basis, it is possible that inaccurate effort reports will be certified. As a result, labor costs could be

inappropriately allocated and charged to NSF grants. Limiting the window for review and certification of effort reports to the shortest reasonable time period helps ensure a more reliable certification of labor costs associated with activities on federal awards.

Recommendations

We recommend that NSF's Director of the Division of Institution and Award Support request that UW-Madison:

1. Strengthen the administrative and management controls and processes over allocating salaries to its federal awards. Processes could include disallowing uncertified effort on federally funded awards.

University of Wisconsin at Madison Response: UW-Madison acknowledged that some of its effort certifications were not completed in a timely manner; however, it believes that it has adequate procedures in place to address the completion of effort certifications in a compliant manner. UW-Madison contends that as 2 CFR 220, Appendix A, Section J.10.c.(2) does not require effort certifications to be completed within a specific time period, the audit findings are a result of language included in a UW-Madison guidance document and therefore do not relate to a formal policy. UW-Madison's response highlighted the efforts that it has made to ensure that effort reports are certified in accordance with federal and university policy, including implementing consequences for faculty who fail to certify their effort. Based on its comprehensive guidance regarding effort certifications, UW-Madison requested that these audit findings be removed.

Auditors' Additional Comments: Our position regarding the finding does not change. While UW-Madison's policies do include consequences for personnel who fail to certify their effort in a timely manner, these penalties do not occur until after the 90-day certification window has passed and do not have any effect on the amount of effort that is ultimately allocated to the federal funding source. Based on the number of instances that we identified as non-compliant with UW-Madison's regulations, we recommend that the university strengthen its administrative and management controls regarding the timing of its employees' effort certifications, rather than solely relying on the penalties under its current effort-reporting policies.

COTTON & COMPANY LLP

[redacted]

Partner

APPENDIX A: SCHEDULE OF QUESTIONED COSTS BY FINDING

NATIONAL SCIENCE FOUNDATION
ORDER # D13PD00390
PERFORMANCE AUDIT OF COSTS CLAIMED ON NSF AWARDS
UNIVERSITY OF WISCONSIN AT MADISON

SCHEDULE OF QUESTIONED COSTS BY FINDING

		Cost Breakdown			Total Questioned Costs	
Finding	Description	Direct Costs	Fringe Benefit Costs	Indirect Costs	Unsupported	Unallowable
1	Salary Costs for Senior Personnel That Exceeded NSF's Two-Month Maximum for Salary Allocation	[redacted]	[redacted]	[redacted]	$0	$1,276,668
2	Leave Accrual Payouts Unreasonably Allocated to NSF Awards	[redacted]	[redacted]	[redacted]	0	192,707
3	Methodology Used to Allocated Equipment Expenses Not Proportionate to the Benefits Received	[redacted]	[redacted]	[redacted]	0	70,189
4	Expenses Incurred After the Grant's Period of Performance Had Expired	[redacted]	[redacted]	[redacted]	0	56,965
5	Unreasonable Consulting Expenses	[redacted]	[redacted]	[redacted]	0	35,592
6	Unallowable Relocation Expenses	[redacted]	[redacted]	[redacted]	0	30,107
7	Unnecessary Travel Expenses	[redacted]	[redacted]	[redacted]	0	7,360
Total		[redacted]	[redacted]	[redacted]	**$0**	**$1,669,588**

APPENDIX B: UNIVERSITY OF WISCONSIN AT MADISON RESPONSE

THE UNIVERSITY of WISCONSIN MADISON

OFFICE OF RESEARCH AND SPONSORED PROGRAMS

March 13, 2015

[redacted]
Partner
Cotton & Company, LLP
635 Slaters Lane, 4th floor
Alexandria, VA 22314

Dear [redacted]

Thank you for the opportunity to comment on the audit report for the NSF OIG audit of incurred costs at the University of Wisconsin-Madison. We are responding to the revised discussion draft submitted by email from [redacted] of your staff on February 20, 2015 and appreciate your assistance in refining earlier language. Both your staff and the representatives from NSF OIG have been professional, facilitative, and collaborative. We believe their cooperation during this audit encouraged our interactions with them to be uniformly positive and congenial, certainly in keeping with the mission of the NSF.

In reviewing this report, we find the audit has confirmed the strength of University of Wisconsin-Madison programs, the benefits of our management systems, and the cooperative nature of our faculty and administrators. We believe that this audit offers an excellent opportunity to review our processes and will use this report to further strengthen our administrative and management controls and processes. We are committed to continuous improvement of our management and oversight of NSF sponsored projects.

Below, please find our responses to the audit findings.

Finding 1: Salary Costs for Senior Personnel That Exceeded NSF's Two-Month Maximum for Salary Allocation

> 45 UW-Madison employees were identified as senior personnel on NSF grants who allocated more than two months (or the maximum number of approved months) of their academic-year (AY) salaries to NSF awards without receiving specific approval to do so.

UW-Madison Response to Finding 1

In accordance with NSF policy and guidance, UW-Madison believes that the salaries for all 45 UW-Madison employees are appropriately allocated to NSF awards. NSF guidance describes senior

[redacted]
Madison, WI 53715-1218

[redacted]
http://www.rsp.wisc.edu

personnel salary requests made at the time an original proposal is submitted as well as salary adjustments (rebudgeting) that occur after an award has been made.

UW-Madison understands that, "as a general policy, NSF limits salary compensation for senior project personnel to no more than two months of their regular salary in any one year." (NSF Grant Proposal Guide (GPG), II.C.2.g. (i)). The GPG instructs that compensation in excess of two months "must be disclosed in the proposal budget" and "justified in the budget justification." (GPG II.C.2.g. (i)). For those situations where a need for senior personnel salary was identified at the time of proposal, UW-Madison included salary to be paid within the budget and budget justification. This information, combined with information in Current and Pending Support, provides a complete snapshot of intended and potential effort and the time period over which the expended effort may occur.

However, GPG instructions on inclusion of salary in excess of the two month limit within the proposal are provided only in the event that a need for such compensation is recognized at the time of proposal. Several of the questioned salary costs identified were situations in which a need for increased effort was recognized post-award.

According to NSF policy, after an award has been made, UW-Madison has rebudgeting authority to make adjustments to the budget without prior NSF approval. The Award and Administration Guide, Exhibit II-1, describes requests that require NSF prior approval. Exhibit II-1 does not include a requirement to obtain prior approval to exceed two months' compensation. Exhibit II-1 references Chapter II.B.2 of the AAG which describes prior notification or approval being necessary when senior personnel intend to reduce effort or to be absent, but does not direct awardees to request prior approval in the event of increased effort and the associated salary by senior personnel.

The guidance is further clarified by the NSF Policy Office, responsible for developing, implementing, and issuing proposal and award policy for NSF programs. The NSF Policy Office clarified in the Proposal Preparation and Award Administration FAQ published in November 2010 (http://www.nsf.gov/pubs/policydocs/pappguide/faqs11_1.pdf) that awardees are allowed to rebudget salary post-award. In the FAQ document, the third question under the category of Senior Personnel states:

> **Must awardees request prior NSF approval if making a change post-award to the amount originally budgeted for senior personnel salary?**
>
> NSF has not changed the terms and conditions or any of our post-award prior approval requirements. ***Therefore, under the normal rebudgeting authority, an awardee can internally approve an increase of salary after an award is made. No prior approval from NSF is necessary.*** (Emphasis added) The caveat is if the change would cause the objective or scope of the project to change, then the awardee would have to submit an approval request via FastLane. Since salary can amount to a large part of the budget, there may very well be a scope change with addition of salary, especially if, for example, the PI decided not to hire a grad student in order to have enough money to cover the salary increase.

This guidance was reaffirmed in an updated FAQ document released in January 2013 (http://www.nsf.gov/publications/pub_summ.jsp?ods_key=pappfaqs), which addresses this issue in the third Q&A under the topic of Senior Personnel:

Must awardees request prior NSF approval if making a change post-award to the amount originally budgeted for senior personnel salary?

NSF has not changed the terms and conditions or any of our post-award prior approval requirements. See AAG Exhibit II-1. ***Therefore, under the normal rebudgeting authority, an awardee can internally approve an increase in person months devoted to the project after an award is made, even if doing so results in salary support for senior personnel exceeding the 2 month salary rule. No prior approval from NSF is necessary***. (Emphasis added) The caveat is if the change would cause the objective or scope of the project to change, then the awardee would have to submit an approval request via FastLane. Since salary can amount to a large part of the budget, there may very well be a scope change with addition of salary, especially if, for example, the PI decided not to hire a grad student in order to have enough money to cover the salary increase.

Although the audit report claims that "the FAQ responses do not represent authoritative guidance," the FAQ responses are, in fact, a product of the NSF Policy Office that also promulgates the Award and Administration Guide (Part II of the Proposal and Award Policies and Procedures Guide). In the most current PAPPG (NSF 15-1), the NSF Policy Office took the step of incorporating this guidance into the Grant Proposal Guide (GPG) and explained that this was a clarification of NSF policy, not a policy change. The list of significant changes to the GPG affirms, "**Chapter II.C.2.g (i) (a), Senior Personnel Salaries and Wages Policy**, has been supplemented to clarify proposer and awardee authority regarding rebudgeting." (http://www.nsf.gov/pubs/policydocs/pappguide/nsf15001/sigchanges.jsp) GPG Chapter II.C.2.g (i) (a) reads as follows:

> Under normal rebudgeting authority, as described in AAG Chapters II and V, an awardee can internally approve an increase or decrease in person months devoted to the project after an award is made, even if doing so results in salary support for senior personnel exceeding the two month salary policy. No prior approval from NSF is necessary as long as that change would not cause the objective or scope of the project to change. NSF prior approval is necessary if the objective or scope of the project changes.

That this was a clarification of existing policy (not a policy change) was repeated in an NSF PAPPG Webinar held on Tuesday, January 27, 2015. Slide 14 of the presentation (http://www.nsf.gov/bfa/dias/policy/outreach/nsfupdate_pappgdec14.pdf) includes a bullet point "Clarification on two month salaries." During the webinar, the Head of the NSF Policy Office supplemented this bullet point by emphasizing and reiterating that NSF has made no policy change, and that post-award, there is no need to request prior approval to exceed two months' salary support, unless a change in objective or scope occurs as a result. Once an award is made, there is flexibility to re-budget to increase the salary of senior personnel. This is not a change in policy, but a clarification of what NSF's policy actually is.[1] This concept is now captured in the Grant Proposal Guide (Part I of the Proposal and Award Policies and Procedures Guide), in addition to the FAQ on Senior Personnel.

UW-Madison followed NSF policies and procedures by appropriately requesting salary support at the time of proposal, disclosing it in the proposal budget, and justifying it in the budget justification. Post-award, UW-Madison relied on the printed and verbal guidance from the NSF Policy Office and used the flexibility available to increase the amount of senior personnel salary. There was no change in the

[1] http://www.nsf.gov/bfa/dias/policy/outreach/PAPPG_Jan27.wmv

scope of the work on the NSF awards. Because our actions were consistent with NSF policies and procedures, UW-Madison asserts that the senior personnel costs were allowable. Recipients of Federal funds must be able to rely on the oral and written information provided by staff of the NSF Policy Office in order to manage awards responsibly. UW-Madison adhered to the clear and consistent messages provided by the Policy Office.

Finding 2: Leave Accrual Payouts Unreasonably Allocated to NSF Awards

> UW-Madison unreasonably allocated $192,707 of accumulated leave to NSF awards. Full year faculty employees are permitted to save their unused vacation time within an Accumulated Leave Reserve Account (ALRA). The university's cost accounting policies state that these accumulated absences are expensed as incurred, as a direct cost to the source of the employee's funding. As a result, when an employee who has a positive balance within their ALRA account leaves the university, the lump-sum payment of all leave accumulated by the employee is charged to the funding source for the employee's final month of effort, regardless of when the leave was actually earned. Due to this methodology, the university is charging an unreasonable proportion of accumulated leave to NSF awards.

UW-Madison Response to Finding 2

The University of Wisconsin-Madison believes that accumulated leave balances were reasonable and appropriate charges to NSF awards. 2 CFR 220 (OMB Circular A-21 "Cost Principles for Educational Institutions"), Appendix A, section C.3. Reasonable costs, indicates that a factor in determining the reasonableness of a cost is "the extent to which the actions taken with respect to the incurrence of the cost are consistent with established institutional policies and practices applicable to the work of the institution generally, including sponsored agreements."

In 2 CFR 200.34 (a), the definition of "expenditures" states "The charges may be reported on a cash or accrual basis, as long as the methodology is disclosed and is consistently applied." The University of Wisconsin, like most grantees, reports its expenditures on a cash basis. As a result, the University applies a consistent practice of paying accumulated leave as salary from the funding in place at the time the salary is paid, regardless of the source of funding. In accordance with 2 CFR 220, Appendix A, section C.14. Disclosure Statement, the University of Wisconsin-Madison submitted a Cost Accounting Standards Board Disclosure Statement to our cognizant agency (Department of Health and Human Services) which was reviewed and approved in 1999. This treatment of leave accrual payout is documented in the university's Disclosure Statement, F&A Rate Agreement, and Effort Guidelines; the relevant page from each document was previously provided. Each document is discussed below:

<u>Cost Accounting Disclosure Statement</u>

UW-Madison's Disclosure Statement (DS-2) establishes, [redacted]

UW-Madison is obligated to follow this practice by 2 CFR 220, Appendix A, section C.14.d: "Educational institutions are responsible for maintaining an accurate DS-2 and complying with disclosed cost accounting practices." DHHS, UW-Madison's cognizant Federal agency, has been fully aware of this approach for at least the last fifteen years, the date of the original Disclosure Statement approval.

F&A Rate Agreement

Consistent with the institution's Disclosure Statement, UW-Madison's F&A Rate Agreement states:

[redacted]

[redacted] DHHS has consistently approved the University's F&A Rate Agreement that includes this language, which clearly declares UW's approach to these costs.

Guidelines for Effort Reporting

In addition to the inclusion of this method in foundational cost accounting documents, including the Disclosure Statement and F&A Rate Agreement, this approach has been disseminated in guidance such as the UW-Madison's Guidelines f[redacted]

[redacted]

Uniform Guidance

UW-Madison consistently applies an approach of treating accumulated leave on a cash basis as a direct cost. This consistent approach is used for all federal, non-federal, and institutional funding sources. The acceptability of this approach has been documented in the Uniform Guidance. The guidance from OMB/COFAR on this approach has evolved since the original Uniform Guidance was released in December 2013.

The original 2 CFR 200, §200.431(b) (i) contained the following:

> (i) When a non-Federal entity uses the cash basis of accounting, the cost of leave is recognized in the period that the leave is taken and paid for. Payments for unused leave when an employee retires or terminates employment are allowable as indirect costs in the year of payment.

The reaction from the research community was swift, as institutions were concerned that the language in §200.431(b)(i) suggested that for institutions using the cash basis of accounting, payments for unused leave would be allowable only as an indirect cost. UW-Madison is one of many research universities using the cash basis/direct cost approach for accumulated leave. After receiving input on this issue, the Council on Financial Assistance Reform (COFAR) released an FAQ on August 29, 2014 with a further revision on November 26, 2014:

> 200.431
>
> .431-1 Fringe Benefits and Indirect Costs
>
> Will the COFAR consider deleting the requirement in 200.431(b) (3) (i) and 200.431(e) (3) that fringe benefits be charged as indirect costs when the non-Federal entity is using a cash basis of accounting?
>
> Yes. Based on the COFAR's recommendation, OMB will issue a technical correction with the Uniform Guidance implementing regulations to delete the requirement that indirect costs be

> used to charge payments of unused leave, worker's compensation, unemployment compensation, severance pay, and similar employee benefits.

The FAQ released in November 2014 acknowledges that accumulated leave need not be charged as an indirect cost if the entity is using a cash basis of accounting. This approach is codified in the Uniform Guidance updated as of December 19, 2014, §200.431(b) (i). The Uniform Guidance makes clear that the treatment of accumulated leave on a cash basis is an acceptable method, and that payments for unused leave are allowable in the year of payment.

> (b) *Leave*. The cost of fringe benefits in the form of regular compensation paid to employees during periods of authorized absences from the job, such as for annual leave, family-related leave, sick leave, holidays, court leave, military leave, administrative leave, and other similar benefits, are allowable if all of the following criteria are met:
> (1) They are provided under established written leave policies;
> (2) The costs are equitably allocated to all related activities, including Federal awards; and,
> (3) The accounting basis (cash or accrual) selected for costing each type of leave is consistently followed by the non-Federal entity or specified grouping of employees.
> ***(i) When a non-Federal entity uses the cash basis of accounting, the cost of leave is recognized in the period that the leave is taken and paid for. Payments for unused leave when an employee retires or terminates employment are allowable in the year of payment.*** *(Emphasis added)*

That trail of evolution in the language of the Uniform Guidance is a clear affirmation that COFAR and OMB carefully considered an appropriate treatment for unused leave at the time of termination. UW-Madison is acting in accord with the Guidance by treating accumulated leave costs consistently, compliant with 2 CFR 220 (OMB Circular A-21) and 2 CFR 200, and in accordance with established institutional policies and procedures. Our cognizant Federal agency, DHHS, has been fully aware of and approving of this approach. Based on these facts, UW-Madison believes that the accumulated leave costs were allowable.

Finding 3: Methodology Used to Allocate Equipment Expenses Not Proportional to the Benefits Received (transactions 77 & 207)

> Equipment purchased by UW-Madison was used to achieve more than one cost objective; however, these costs were not allocated on a reasonable basis according to the benefits acquired. UW-Madison personnel did not maintain adequate documentation to justify the methodology used to allocate the expenses to NSF-funded awards. As the methodology appears to be unreasonable, we are questioning $70,189 in inappropriately allocated expenses.
>
> Per 2 CFR 220 Appendix A, Section C.4.d(3), if a cost benefits two or more projects or activities in proportions that can be determined without undue effort or cost, the cost should be allocated to the projects based on the proportional benefit. If the relevant proportions cannot be determined due to the interrelationship of the work involved, the costs may be allocated or transferred to the benefited projects on any reasonable basis. UW-Madison did not allocate equipment expenses based on the proportional benefits received by the NSF-sponsored awards, nor did it use a reasonable basis relative to the projects that benefitted from the equipment purchase.

UW-Madison Response to Finding 3 (transactions 77 & 207)

This piece of equipment, an autonomous underwater vehicle (AUV), was used by two separate projects and was funded by them, along with a small contribution from the University. We believe the allocation of expenses was appropriate for the purchase of this equipment. In 2 CFR 220, Appendix A, Section C.4.d. (3), we find:

> If a cost benefits two or more projects or activities in proportions that can be determined without undue effort or cost, the cost should be allocated to the projects based on the proportional benefit. ***If a cost benefits two or more projects or activities in proportions that cannot be determined because of the interrelationship of the work involved, then, notwithstanding subsection b, the costs may be allocated or transferred to benefited projects on any reasonable basis***, consistent with subsections C.4.d. (1) and (2) of this Appendix. (Emphasis added)

The cost of the equipment is **allocable** to these two grants as it benefited the objectives of both the NSF awards that funded a portion of the cost. The PIs of the two grants have the most knowledge about the objectives of the projects and how the equipment would benefit each award. Because of their expertise, they determined the relative benefit and the amount to be allocated to each project.

The two projects that purchased the AUV both involved lake measurements that are difficult to obtain without mobile underwater technology. The first project, OCE-0628560, Collaborative Research – The Carbon Balance of Lake Superior: Modeling Lake Processes . . ., contributed approximately 68% of the cost of the equipment, and research still continues on related projects that grew from this award.

The second project is DEB-0941510, CDI-Type II: Collaborative Research: New Knowledge from the Global Lake Ecological Observatory Network (GLEON). The GLEON award contributed about 30% of the costs of the AUV, and it is research that aids in the development of network science through outcomes that are multi-scale and multi-dimensional. This project is on-going and currently has an end date of 09/30/2015.

The AUV is a **reasonable charge** as it enabled researchers to obtain certain lake measurements that we otherwise would not have been able to gather. The purchase of the AUV was necessary to provide the spatial measurements that traditional buoys are unable to accomplish. Whereas buoys are only able to measure one dimension and must remain stationary, the AUV is able to provide three dimensional data (physical, biological, and chemical) from numerous areas of the lakes. The cost is **allowable** as it is reasonable, allocable, required for the furtherance of the projects, and conformed with the NSF Award and Administration Guide.

The proportion charged to each funding source is reasonable given that the activities are interrelated and cannot be precisely determined. The AUV's direct applicability to obtaining physical limnology measurements was estimated to be approximately 68%, and advancing network science was approximately 30%. This methodology of allocating the cost of this piece of equipment based on approximate percentage of estimated benefit to the project is not flawed since 2 CFR Part 220 allows costs to be allocated on any reasonable basis if the precise proportion cannot be determined. We believe that the amounts allocated to these projects are commensurate with the benefit to the projects, as determined by the principal investigators of the awards.

NSF's mission is to promote the progress of science. As mentioned on the "What We Do" section of its website, "NSF's job is to determine where the frontiers are, identify the leading U.S. pioneers in these fields and provide money and equipment to help them continue." NSF selected these projects to receive funding for their intellectual merit and potential broader impacts. The projects under which this equipment was purchased led to new avenues of research, and this item has helped to support the continued work being done, funded by both NSF and NOAA. 2 CFR 215, section 215.34, Equipment. (c), states:

> The recipient shall use the equipment in the project or program for which it was acquired as long as needed, whether or not the project or program continues to be supported by Federal funds... When no longer needed for the original project or program, the recipient shall use the equipment in connection with its other federally-sponsored activities, in the following order of priority: (1) Activities sponsored by the Federal awarding agency which funded the original project, then (2) Activities sponsored by other Federal awarding agencies.

In this case, the two projects were examples of the NSF motto, "Where Discoveries Begin."

The principal investigators, most intimately knowledgeable about the projects and how the equipment would be used to further their objectives, determined the allocation of the cost to the awards. Because the allocation was done in accordance with 2 CFR 220, commensurate with the benefit to the projects, the University believes that the equipment expenses were appropriately charged to the NSF awards.

Finding 4: Expenses Incurred after the Grant's Period of Performance Had Expired

Purchase requests for equipment and other supplies allocated to NSF grants were made at the end of the grant's POP, and the supplies were not ordered until after the grant's POP had expired. As a result, UW-Madison personnel inappropriately allocated to expired NSF awards $56,965 of expenses related to equipment and supplies.

Part 1: Lake microbial dynamics equipment and supplies (transactions 29, 305 & 307)

NSF Award No. 0446017 had a POP of March 1, 2005, through February 28, 2011. On March 3, 4 and 8th 2011 three purchase orders were issued to purchase equipment and supplies that would provide measurements in support of modeling lake microbial dynamics. The total of these three purchase orders including indirect costs amounted to $38,084

Part 2: Chemistry Computer Cluster equipment purchase (transactions 186 & 394)

NSF Award No. 0911559 had a POP of August 1, 2009, through July 31, 2012. NSF Award No. 0840494 had a POP of August 1, 2009, through July 31, 2012. On August 2, 2012, a purchase order was issued to purchase computer equipment from with funding from these two awards ($17,017 from 0911559 and $1,864 from 0840494).

UW-Madison Response to Finding 4

Part 1: Lake microbial dynamics equipment and supplies (transactions 29, 305, & 307)

The University does not agree with the recommendation to disallow these costs. These items were ordered when the purchase requisitions were placed on 2/25/11 (transaction 29 based on quotes obtained on 2/15/11), 2/21/11 (transaction 305 based on quotes obtained on 2/18/11), and 2/18/11 (transaction 307 based on quoted obtained on 2/16/11). Administrative processes delayed the finalization of the paperwork until 3/3, 3/4, and 3/8/11.

In accordance with NSF policy, the program officer at NSF was notified of the intent to obtain this equipment via FastLane Notifications & Requests as a Significant Changes, Delays or Events of Unusual Interest submitted on 1/21/11. FastLane indicates that the program officer reviewed the notification on 2/11/11. The Description of Changes/Delays or Event included in that notification reads as follows:

> This supplement of $176,521 was awarded in September 2006 to enhance and extend GLEON efforts in the Nordic countries of Europe, involve students in international research, and to purchase an autonomous microbial genosensor (AMG), modified for freshwater use. This last element of the budget ($36,174) entailed a subagreement with the University of South Florida (USF). A portion ($4,190) was paid to USF with the remainder ($31,984) withheld until completion, which has not occurred despite our attempts to resolve this since January 2008. **We are requesting a reallocation of the remaining $31,984 to purchase equipment that provides measurements in support of modeling lake microbial dynamics. This equipment, with cost estimates are: Multi-parameter sonde, including pigment sensors (qty 1): $15,400 Dissolved oxygen sensors (qty 4): $11,500 [redacted] array (qty 1): $5,000**

It was originally intended that the University of South Florida, as a subrecipient on this grant, would fabricate and provide this equipment. When it became apparent that the University of South Florida would be unable to deliver the required equipment, a Termination Notice was issued to them. After notifying the NSF program officer, UW-Madison then purchased this equipment as intended under Award No. 0446017. The research supported by this grant was advanced by the equipment purchase. As required in 2 CFR 215, section C.34, the equipment continues to be used by NSF-funded projects. Other NSF-funded grants that continue to support this work with a global network for lake metabolism research and education (Global Lake Ecological Observatory Network; GLEON) have also benefited from the purchase of these sensors. Those awards include RCN (DBI-0639229), CDI (DEB-0941510), and Macrosytems (EF-1137353).

The University identified this purchase as a significant change in budget and disclosed an unusual event that contributed to a delay in an objective of the research as required by NSF policies and procedures. As a result, UW-Madison believes that these expenses were appropriately charged to the award.

Part 2: Chemistry Computer Cluster equipment purchase (transactions 186 & 394)

The University believes that these expenses are appropriately allocated to these projects. This equipment was ordered when the purchase requisition was placed on 7/27/12 based on quotations obtained on 7/25/12. Administrative processes delayed the finalization of the paperwork until 8/2/12.

The equipment purchased under NSF Award No. 0911559 is part of a computer cluster that is used by

the PI's group as its primary computational tool. The original budget included $10,000 for equipment, and the PI determined that additional resources were needed and rebudgeted funding because it became clear that his group's computational resources would not be adequate to finish the work of the project. Since the equipment was purchased, it has been used for the research begun under Award No. 0911559 and continued as part of the renewal project, Award No. 1213449. There was no gap in time between the original award and its continuation, as Award No. 1213449 has a project period of 8/1/12 – 7/31/15.

A portion of the computing equipment purchased was allocated to Award No. 0840494. The project summary for Award No. 0840494 indicated that the grant is provided for the purpose of "upgrading the existing Chemistry Computing Facility to a state-of-the-art portal for computational chemistry research and education. The existing facilities, last updated in 2001, are insufficient for the Department's growing computational research needs and activities associated with the integration of research with education." The grant was funded under NSF 08-539, which describes this NSF program as follows:

> The Chemistry Research Instrumentation and Facilities Program (CRIF) is structured to enable the National Science Foundation's Division of Chemistry to respond to a variety of needs for infrastructure--instrumentation and facilities--that promotes research and education in areas traditionally supported by the Division (NSF Division of Chemistry Homepage). The Departmental Multi-User Instrumentation component of CRIF provides funds to universities, colleges, and consortia thereof for the purchase of multi-user instruments or upgrades of existing equipment. Proposals to enable remote access to existing instruments will also be considered.

The grant was intended to provide modern computational resources for some 40 research groups and teachers well beyond the term of the grant, and it continues to do so. Because this purchase was meant to upgrade existing equipment, procuring it near the end of the project period enabled the PI's group to obtain state of the art equipment at a reduced cost.

The University believes that the costs for computing equipment purchased under NSF Award No. 0911559, as well as Award No. 0840494 were appropriately allocated to the projects and consistent with the purposes of the awards that were approved by NSF.

Finding 5: Unreasonable Consulting Expenses (transactions 303 & 310)

> In two cases, consultants performed work for UW-Madison during the effective period of a grant, but UW-Madison did not enter into an agreement to pay these consultants until near or after the grant's expiration date. Consequently, UW-Madison inappropriately allocated more than $35,000 of consultant expenses to NSF awards.
>
> **Part 1: Rebudgeting from Salary to Consultant** (transaction 303)
>
> NSF Award No. [redacted] had a POP from August 1, 2007, through January 31, 2012. While the work was performed during the grant's POP, the invoice requesting payment for these services was dated March 6, 2012, almost 6 months after the work was performed and 35 days after the

grant's POP had expired. The academic services support agreement between the consultant and the university was dated March 5, 2012, after the grant's POP had expired.

Part 2: Services provided by Rutgers University (transaction 310)

NSF Award No. 0822189 had a period of performance from September 15, 2008, through December 31, 2012. On January 16, 2013, 16 days after the grant's POP had expired, the university charged to this grant [redacted] of consultant expenses for services provided by Rutgers University. The invoice was dated December 27, 2012, and was purportedly for [redacted] project services provided from January 1 through December 15, 2012.

UW-Madison Response to Finding 5

Part 1: Rebudgeting from Salary to Consultant (transaction 303)

The University believes that these consulting expenses were reasonable and allocable to this award. At the time of proposal and issuance of the award, [redacted] the UW. [redacted] included in this project to perform work on [redacted]

However, once [redacted] as originally proposed during the period of the award. This decision was the result of discussions and correspondence between [redacted] Based on those exchanges of information, it was determined that this activity should be treated as a consulting agreement between [redacted] and the University. Although the work was performed during the project period, due to these extensive discussions and correspondence, the consulting agreement was not finalized until 3/6/2012. An Academic Support Services Sole Source Justification needed to be prepared and approved before the agreement could be initiated. Invoice payment could not be initiated until a fully executed agreement was in place.

Five invoices dated 3/1/2011, 4/1/2011, 6/1/2011, 7/1/2011 and 9/1/2011 each provide detail regarding the work period, number of samples processed, tasks completed, number of hours billed and the hourly rate. The invoices demonstrate that the work was completed during the period of performance. 2 CFR 215 (OMB Circular A-110), Section 215.2 defines obligations as "the amounts of orders placed, contracts and grants awarded, ***services received*** and similar transactions ***during a given period that require payment by the recipient during the same or a future period***." (Emphasis added) As the services were rendered during the period of performance and appropriately documented on the consultant invoices, UW-Madison was required to pay for such services, which were part of the original project objectives. Although the consulting agreement was not completed until 3/6/12, the completion of the work created an obligation during the period of performance that the University was required to liquidate.

The timing of the payments was due to the unique circumstances surrounding [redacted] and the appropriate internal review and approval processes within the University. The agreement for the payment mechanism may have been delayed, but 2 CFR 215 (OMB Circular A-110) provides the ability to make payments within an established closeout period. Per 2 CFR 215, Section 215.71(b), "***a recipient shall liquidate all obligations incurred under the award not later than 90 calendar days***

after the funding period or the date of completion as specified in the terms and conditions of the award or in agency implementing instructions." (Emphasis added) Award No [redacted] ended on 1/31/12, and the payment was made within the 90 day closeout period.

The work directly benefited the project; it was completed during the POP; and the expenses were paid within the required 90 day closeout period. The University believes that these expenses were appropriately charged to the award.

Part 2: Services provided by Rutgers University (transaction 310)

The University believes that the expenses related to the services provided by Rutgers University are reasonable and allocable. This was a collaborative research project, and NSF made separate awards to UW-Madison and Rutgers University. The work was highly collaborative. The exact distribution of work between the two institutions could not be formally stipulated in the grant proposal, but was generally outlined. The actual activities that took place then unfolded during the six years of working together.

One focus of the collaborative grant's research at UW-Madison was to utilize and test the [redacted] system. UW-Madison conducted courses in which data was collected using this system. The final UW-Madison course in which we collected data using [redacted] was taught during the fall semester that ended in December 2012.

The services performed by Rutgers were in support of our site implementation of [redacted] video repository and analysis tools. The tools were developed at Rutgers and were used to support experimental courses taught at UW-Madison. As the research unfolded, UW-Madison relied on technical assistance services from Rutgers to a greater extent than anticipated when the UW-Madison budget was developed. UW-Madison determined that such services were significantly important to our research and the principal investigator rebudgeted to enable Rutgers to provide the necessary services.

It was determined that Rutgers would do this work rather than try to hire someone locally who was not familiar with the system, which Rutgers developed. Had UW-Madison hired others to do this work, we would not have been able to complete the project within the grant period. Someone new to the system would have needed to familiarize themselves with it before doing the work, which would have created delays. Given the additional time that would have been required of someone new to the system, the cost of providing the services would have been substantially higher and unreasonable. In this situation, Rutgers was uniquely qualified to provide the necessary services within the period of performance.

Per the NSF AAG Chapter II.C.2, "If required in the furtherance of the project, the grantee is authorized to transfer funds from one budget category to another for allowable expenditures." Exhibit II-1 highlights changes that may require prior NSF approval; however, professional service costs are not among items requiring prior approval. Further, per the NSF AAG, Chapter V.A.3.b. (ii), "costs not specifically budgeted in an NSF award may be allowable provided that prior approval is not required and costs are incurred consistently with the applicable cost principles." Professional service costs are allowable per 2 CFR 220, Appendix A, Section J.37, in particular the following parts:

- J.37.b. (1) The nature and scope of the service rendered in relation to the service required.
- J.37.b. (2) The necessity of contracting for the service, considering the institution's capability in the particular area.

The allowability per section J.37 does not require the inclusion of the costs in the budget.

As evidenced by the invoice provided, the work for Award No. 0822189 was performed during the period January 1 – December 15, 2012, within the period of performance of the award. The services received created an obligation, which, per 2 CFR 215, Section 215.2, "***require[d] payment by the recipient during the same or a future period***." (Emphasis added) UW-Madison provided payment for the services received within 90 days after the funding period, which is allowable per 2 CFR 215, Section 215.71(b), "***a recipient shall liquidate all obligations incurred under the award not later than 90 calendar days after the funding period*** or the date of completion as specified in the terms and conditions of the award or in agency implementing instructions." (Emphasis added).

The expenditures for Rutgers' services were made in accordance with UW-Madison and NSF policies, as well as 2 CFR 220 (OMB Circular A-21) and 2 CFR 215 (OMB Circular A-110). The work directly benefited the project; it was completed during the POP; and the expenses were paid within the required 90 day closeout period. The University believes that these expenses were appropriately charged to the award.

Finding 6: Unallowable Relocation Expenses (transactions 201, 318 and 325)

As the relocation fees applied to this NSF grant were not for named individuals identified in the grant proposal, and the university did not obtain specific permission from NSF to allocate relocation expenses for this employee, we determined that the expenses were not reasonably allocated to this NSF award. We are therefore questioning a total of $30,107 charged to the NSF grant.

UW--Madison Response to Finding 6 (transactions 201, 318 and 325)

The University believes that these expenses are allowable on this award. We do not agree with the auditors' conclusion that the relocation expenses are unallowable because the individual's name was not included in the proposal. We believe that the expenses were entirely allocable to this project and that, while prior approval was not required according to NSF policy, notification was provided to NSF to document this change in personnel.

The relocation expenses were incurred in accordance with NSF's Policy and Procedures Guide. The relevant parts of the Award and Administration Guide are summarized as follows:

1. Relocation costs are considered allowable as direct costs in accordance with AAG, Chapter V, section C.4.

2. AAG Chapter V, section A.3.a., specifically directs awardees to AAG Exhibit II-I for information on required prior approvals. AAG Exhibit II-I does not include direct cost treatment of relocation expenses as requiring prior approval.

3. AAG Chapter V, section A.3.b. (ii), addresses those circumstances where there has not been specific budgeting in the award. Costs not specifically budgeted in an NSF award are allowable provided that prior approval is not required and costs are incurred consistently with the institution's applicable cost principles.

The language in the AAG has been clarified by NSF over time. In the February 2014 (NSF 14-1) version, the Clarifications included the following:

> **Chapter V.C.4, Relocation Costs**, has been supplemented to explain that relocation costs charged to an NSF award that were not included in the approved budget must be fully documented in the awardee's records and be in accordance with the awardee's established policies and procedures.

The clarified Chapter V.C.4 requirement in the February 2014 AAG states:

> a. Relocation costs may be charged to an NSF grant as an other direct cost in accordance with the applicable governing cost principles provided that:
>
> > (i) a proposal for NSF support specifically indicates that the grantee intends to hire a named individual for full-time work on the project ***or via advance understanding if determination of the need for such individual is made subsequent to the award;*** (Emphasis added)

The language in the AAG was further amended by NSF in December 2014 (NSF 15-1) to read: "Relocation costs may be charged to an NSF grant as other direct costs in accordance with the cost principles contained in 2 CFR § 200, Subpart E. See 2 CFR § 200.464 for additional information on relocation costs."

2 CFR 200.464 does not include a requirement for prior approval or a requirement that the individual be specifically named at the time of proposal.

The UW-Madison's Cost Accounting Standards Disclosure Statement section 2.1 (page II-6) states: [redacted]

The individual in question was hired as a [redacted] for this award that funds the maintenance and operations of [redacted]. This individual replaced [redacted] who retired. At the time of proposal, it was not possible to predict the retirement o[redacted] or the specific name of their replacement. NSF was notified about this change in personnel in both the annual M&O Plan from December 2012 and at the annual I[redacted] review meeting on December 10, 2012. This individual was solely dedicated to this project and had no other University responsibilities.

Supported by NSF policy and consistent with this institution's applicable cost principles, UW-Madison believes that the direct charging of relocation expenses for the [redacted] is allowable due to the circumstance of the hiring of this individual to work exclusively on the sponsored project.

Finding 7: Unreasonable Travel Expenses (transactions 24 and 299)

UW-Madison charged $7,360 of unreasonable travel expenses to two NSF awards. These expenses were not reasonable or necessary for accomplishing the award objectives and did not benefit the NSF programs to which they were charged. The expenses therefore should not have been charged to the NSF awards.

Part 1: PI Unable to attend/present at conference (transaction 24)

According to UW-Madison, the PI of NSF Award No. [redacted] was unable to attend the one-week [redacted] Conference held in [redacted] in April 2012; [redacted] was therefore sent in his place to present a paper entitled [redacted] was reimbursed for expenses amounting to $3,047, all of which were allocated to this NSF award.

While [redacted] was [redacted] at the time of the trip, [redacted] did not allocate any of their effort to this award, but rather to other sponsored projects that the PI was involved in. [redacted] was not identified as a contributor to this project, nor was the paper presented at the conference mentioned in the annual report for this NSF award. These travel reimbursement expenses therefore do not appear to have benefitted NSF Award No [redacted]

Part 2: Incorrectly charged travel (transaction 299)

The PI of NSF Award No. 0751750 attended the annual [redacted] meeting in April 2010 and allocated all travel expenses incurred to this NSF award. As a result of our audit, university grant personnel discussed this expense with the PI and determined that it was incorrectly allocated to this grant. The university chose to reimburse NSF and transfer all of the expenses associated with this trip to a general funding source.

UW-Madison Response to Finding 7

Part 1: PI Unable to attend/present at conference (transaction 24)

The University believes that these expenses are allowable on this award. Per the NSF AAG Chapter VI.D.4.b. Dissemination and Sharing of Research Results:

> Investigators are expected to share with other researchers, at no more than incremental cost and within a reasonable time, the primary data, samples, physical collections and other supporting materials created or gathered in the course of work under NSF grants. Grantees are expected to encourage and facilitate such sharing.

[redacted] presented a research paper entitled [redacted] Conference. This paper [redacted] another co-author. The PI, was unable to attend this conference so [redacted] was sent to the present this work. The paper was also published in the conference

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proceedings. [redacted] is one of the top conferences in [redacted]
The paper reported on new theory and methods for [redacted]
measurements. In particular, the work was motivated by [redacted] applications that were central to the research funded under this project.

Excerpts from the conference paper that was presented during this trip demonstrate that the paper directly relates to the second component of the award's scope of work which was [redacted] analysis a[redacted]. The first page of the paper, in particular, contains information that supports the link between the paper and the award. The conference paper is available at the following link: [redacted]

It was an inadvertent oversight that that PI did not mention the paper presented at the conference in the annual report for this NSF award. Regardless, the paper presented by [redacted] resulted from work performed under this award. Since the travel expenses were directly related to the dissemination of research results produced by this award, the University believes that the expenses are allowable.

Part 2: Incorrectly charged travel (transaction 299)

As mentioned, the University determined that this expense was not allowable on this project and issued a refund check to NSF on September 8, 2014.

Finding 8: Late Effort Certifications

> UW-Madison's Policy on Effort, Commitments, and Effort Certification requires that employees provide effort certifications within 90 days of the date on which the effort statement becomes available. We found that for 26 of our 93 sampled salary transactions, employees had not certified the effort reports within the specified time period, including six instances in which the effort was not certified until after we had requested the effort certification as support for sampled transactions.

UW-Madison Response to Finding 8

While the University of Wisconsin-Madison acknowledges that some of the effort cards were not timely, we believe that there are adequate procedures in place to address the completion of the cards in a compliant manner. 2 CFR 220, Appendix A, Section J.10.c.(2) After-the-fact Activity Records contains no discussion of timeliness of certification of effort reports. In addition, there is no requirement in the entire 2 CFR 220, Appendix A, Section J.10 regarding timeliness of certifications. The University of Wisconsin-Madison Policy on Effort, Commitments, and Effort Certification (finalized 8/29/07) only requires that "Effort must be certified in a timely manner." There is no specific time period required in the policy.

These audit findings appear to be a result of language in a University of Wisconsin-Madison guidance document, not in the formal policy. The "Guidelines [redacted] "When must effort be certified?" states:

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[redacted]

This language indicates that the 90 day certification time frame is a general guideline and does not overrule the well-established "[redacted] policy at the University of Wisconsin-Madison.

The audit findings are also silent as to significant efforts the University has taken to ensure that effort reports are certified in accordance with Federal and University policies. The "Guidelines f[redacted]" set the University's expectations for effort certification and the consequences for failing to complete training and certify effort.

[redacted]

[redacted]

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[redacted]

We believe that the UW-Madison has strong guidance, including consequences for non-certifiers, and a thorough process of notifying and monitoring effort certifiers to ensure that effort reports are certified in accordance with Federal and University policies. Based on our comprehensive processes, we request the removal of these audit findings.

If you have any questions about our response, we would be happy to provide clarification. Thank you for your consideration.

Sincerely,

[redacted]

Director of Research Financial Services

cc: [redacted], Vice Chancellor for Finance and Administration
[redacted], Assoc. Vice Chancellor for Research and Sponsored Programs

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APPENDIX C: OBJECTIVES, SCOPE, AND METHODOLOGY

OBJECTIVES, SCOPE, AND METHODOLOGY

The NSF OIG Office of Audits engaged Cotton & Company LLP (referred to as "we" in this report) to conduct a performance audit of costs that UW-Madison incurred on NSF awards for the period from April 1, 2010, to March 31, 2013. The objectives of the audit were to (1) identify and report on instances of unallowable, unallocable, and unreasonable costs from the transactions tested; (2) identify and report on instances of noncompliance with regulations, federal financial assistance requirements, and provisions of the NSF award agreements as they relate to the transactions tested; and (3) determine the reasonableness, accuracy, and timeliness of the awardee's ARRA quarterly reporting, including reporting of jobs created under ARRA and grant expenditures for the most recent quarters.

Our work required reliance on computer-processed data obtained from UW-Madison and the NSF OIG. The NSF OIG provided data on each award that UW-Madison reported on its FFRs for the quarters submitted during our audit period. In addition, UW-Madison personnel provided detailed transaction data for all costs charged to NSF awards during our audit period. This resulted in a total audit universe of $270,130,383 in costs that UW-Madison claimed on FFRs for 1,146 NSF awards.

We assessed the reliability of the data provided by UW-Madison by (1) comparing costs charged to NSF award accounts within UW-Madison's accounting records to reported net expenditures, as reflected in UW-Madison's quarterly financial reports submitted to NSF for the corresponding periods; and (2) reviewing the parameters that UW-Madison used to extract transaction data from its accounting records and systems.

Based on our assessment, we found UW-Madison's computer-processed data to be sufficiently reliable for the purposes of this audit. We did not review or test whether the data contained in, or the controls over, NSF's databases were accurate or reliable; however, the independent auditor's report on NSF's financial statements for fiscal years 2012 and 2013 found no reportable instances in which NSF's financial management systems did not substantially comply with applicable requirements.

UW-Madison management is responsible for establishing and maintaining effective internal control to help ensure that federal award funds are used in compliance with laws, regulations, and award terms. In planning and performing our audit, we considered UW-Madison's internal control solely for the purpose of understanding the policies and procedures relevant to the financial reporting and administration of NSF awards, in order to evaluate UW-Madison's compliance with laws, regulations, and award terms applicable to the items selected for testing, but not for the purpose of expressing an opinion on the effectiveness of UW-Madison's internal control over award financial reporting and administration. Accordingly, we do not express an opinion on the effectiveness of UW-Madison's internal control over its award financial reporting and administration.

We assessed the reasonableness, accuracy, and timeliness of the awardee's ARRA quarterly reporting, including reporting of jobs created under ARRA and grant expenditures for the two most recent quarters, by (1) recomputing the number of jobs created or retained in compliance

with Office of Management and Budget (OMB) Memorandum M-10-08, *Updated Guidance on the American Recovery and Reinvestment Act – Data Quality, Non-Reporting Recipients, and Reporting of Job Estimates*; (2) reconciling expenditures per the general ledger to the ARRA expenditures; and (3) reviewing the ARRA reporting submission dates. We found that the universe of NSF ARRA-funded awards included approximately $13.5 million in expenditures across 67 NSF awards.

To accomplish our objectives of determining reasonableness, allowability, and allocability of costs while identifying and reporting on instances of noncompliance with regulations, federal financial assistance requirements, and provisions of the NSF awards, we judgmentally selected and tested a variety of expenses allocated to NSF grants.

After confirming the accuracy of the data provided but before performing our analysis, we reviewed all available accounting and administrative policies and procedures, relevant documented management initiatives, previously issued external audit reports, and desk review reports to ensure that we understood the data and that we had identified any possible weaknesses within UW-Madison's system that warranted focus during our testing.

We began our analytics process by reviewing the transaction-level data that UW-Madison provided, then used [redacted] software to combine it with the data provided by the NSF OIG. We conducted data mining and data analytics on the entire universe of data provided and compiled a list of transactions that represented anomalies, outliers, and aberrant transactions. We reviewed the results of each of our data tests and judgmentally selected transactions for testing based on criteria including, but not limited to, transactions of large-dollar amounts, possible duplications, indications of unusual trends in spending, descriptions indicating potentially unallowable costs, cost transfers, expenditures outside of an award's period of performance, and unbudgeted expenditures.

We identified 275 transactions for testing and sent the list to UW-Madison, requesting documentation to support each transaction. We reviewed the supporting documentation provided by UW-Madison to determine if we obtained sufficient, appropriate evidence to support the allowability of the sampled expenditures. When necessary, we requested additional supporting documentation, reviewed it, and obtained explanations and justifications from PIs and other knowledgeable UW-Madison personnel until we had sufficient support to assess the allowability, allocability, and reasonableness of each transaction.

We held a discussion with the NSF OIG regarding the results of our initial fieldwork testing and our recommendations for expanded testing. Based on the results of this discussion, we used [redacted] software to extract an additional 150 transactions that we identified as anomalies or outliers in the recommended expansion areas. We also determined that we would conduct a cluster test in one area where weaknesses were identified within our initial testing set.

We sent the list of the additional 150 transactions to UW-Madison and requested documentation to support each transaction. We also asked for support verifying the salary amounts for a number of employees identified in our cluster test. We reviewed the documentation provided and

evaluated each transaction's allowability, allocability, and reasonableness based on the same methodology used during the initial fieldwork.

At the conclusion of our fieldwork, we provided a summary of our results to NSF OIG personnel for review. We also provided the summary of results to UW-Madison personnel, to ensure that they were aware of each of our findings and did not have any additional documentation available to support the questioned costs identified.

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

The remaining attachments contain non-public material and are not posted.