

# Performance Audit of Incurred Costs – National Academy of Sciences

REPORT PREPARED BY COTTON & COMPANY LLP

NATIONAL SCIENCE FOUNDATION  
OFFICE OF INSPECTOR GENERAL

September 6, 2018  
OIG 18-1-005





## AT A GLANCE

Performance Audit of Incurred Costs – National Academy of Sciences

Report No. OIG 18-1-005

September 6, 2018

### AUDIT OBJECTIVE

The National Science Foundation Office of Inspector General engaged Cotton & Company LLP (C&C) to conduct a performance audit of incurred costs at the National Academy of Sciences (NAS) for the period November 1, 2013, to October 31, 2016. The auditors tested more than \$2.9 million of the \$43.2 million of costs claimed to NSF. The objective of the audit was to determine if costs claimed by NAS during this period were allocable, allowable, reasonable, and in conformity with NSF award terms and conditions and applicable Federal financial assistance requirements. C&C is responsible for the attached auditors' report and the conclusions expressed in this report. NSF OIG does not express any opinion on the conclusions presented in C&C's audit report.

### AUDIT RESULTS

NAS did not always comply with all Federal, NSF, and NAS regulations and policies when allocating expenses to NSF awards. The auditors questioned \$90,902 of costs claimed by NAS during the audit period. Specifically, the auditors found \$54,725 in expenses inappropriately drawn down from NSF's Award Cash Management Service; \$12,447 of inappropriately allocated expenses; \$12,046 of over-charged meal expenses; \$11,684 of unallowable travel expenses; and expense reports that were not submitted within NAS-required time frames.

### RECOMMENDATIONS

The auditors included five findings in the report with associated recommendations for NSF to resolve the questioned costs and to ensure NAS strengthens administrative and management controls.

### AUDITEE RESPONSE

NAS agreed with all of the findings in the report. NAS' response is attached in its entirety to the report as Appendix B.

For further information, contact us at (703) 292-7100 or [oig@nsf.gov](mailto:oig@nsf.gov).



# NATIONAL SCIENCE FOUNDATION OFFICE OF INSPECTOR GENERAL

## MEMORANDUM

**DATE:** September 6, 2018

**TO:** Dale Bell  
Director  
Division of Institution and Award Support

Jamie French  
Director  
Division of Grants and Agreements

[REDACTED]

**FROM:** Mark Bell  
Assistant Inspector General  
Office of Audits

**SUBJECT:** Audit Report No. 18-1-005, National Academy of Sciences

This memo transmits the Cotton & Company LLP (C&C) report for the audit of costs charged by the National Academy of Sciences (NAS) to its sponsored agreements with the National Science Foundation during the period November 1, 2013 to October 31, 2016. The audit encompassed more than \$2.9 million of the \$43.2 million claimed to NSF during the period. The objective of the audit was to determine if costs claimed by NAS during this period were allocable, allowable, reasonable, and in conformity with NSF award terms and conditions and applicable Federal financial assistance requirements.

Please coordinate with our office during the 6-month resolution period, as specified by Office of Management and Budget Circular A-50, to develop a mutually agreeable resolution of the audit findings. 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

C&C is responsible for the attached auditors' report and the conclusions expressed in this report. We do not express any opinion on the conclusions presented in C&C's audit report. To fulfill our responsibilities, we:

- 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, as necessary, to discuss audit progress, findings, and recommendations;



# NATIONAL SCIENCE FOUNDATION OFFICE OF INSPECTOR GENERAL

- reviewed the audit report prepared by C&C; and
- coordinated issuance of the audit report.

We thank your staff for the assistance that was extended to the auditors during this audit. If you have any questions regarding this report, please contact Darrell Drake at 703-292-7100 or [oig@nsf.gov](mailto:oig@nsf.gov).

## Attachment

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**NATIONAL ACADEMY OF SCIENCES**

**PERFORMANCE AUDIT OF INCURRED COSTS FOR  
NATIONAL SCIENCE FOUNDATION AWARDS  
FOR THE PERIOD NOVEMBER 1, 2013, TO OCTOBER 31, 2016**

**NATIONAL SCIENCE FOUNDATION  
OFFICE OF INSPECTOR GENERAL**

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**NATIONAL SCIENCE FOUNDATION  
PERFORMANCE AUDIT OF INCURRED COSTS  
NATIONAL ACADEMY OF SCIENCES**

**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.

Each Federal agency has an Office of Inspector General (OIG) that provides independent oversight of the agency's programs and operations. Part of NSF OIG's mission is to conduct audits and investigations to prevent and detect fraud, waste, and abuse. In support of this mission, NSF OIG conducts 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. NSF OIG may also hire a contractor to provide these audit services.

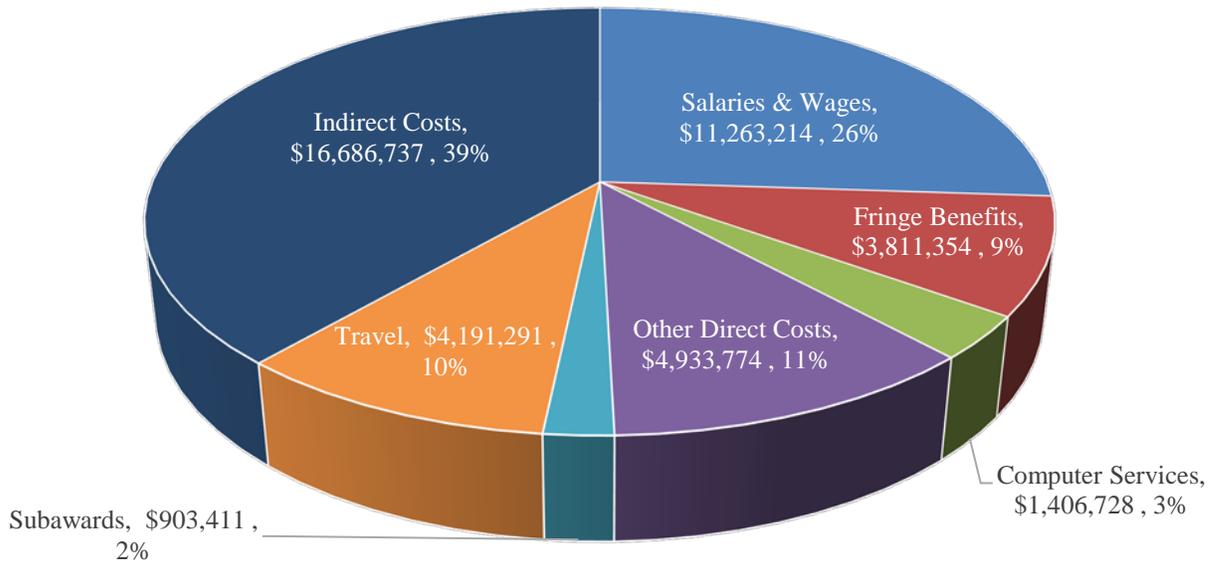
NSF OIG engaged Cotton & Company LLP (referred to as "we") to conduct a performance audit of costs incurred by the National Academy of Sciences (NAS). NAS is a private, non-profit society charged with providing independent, objective advice to the nation on matters related to science and technology. NAS claimed more than \$42.8 million in expenditures through the Award Cash Management Service (ACM\$) across 166 NSF awards during our audit period of performance (POP), or November 1, 2013, through October 31, 2016. NAS was unable to determine which GL transactions supported the total costs claimed from ACM\$ during the audit period, therefore our audit population included \$43.2 million claimed on 163 NSF awards<sup>1</sup>. Figure 1 summarizes the costs charged to NAS's general ledger (GL) by budget category from October 1, 2013, through November 3, 2018, based on the accounting data provided by NAS.<sup>2</sup>

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<sup>1</sup> NAS claimed costs on 166 NSF Awards during the audit period, however, its accounting records only included expenditure data related to 163 NSF Awards.

<sup>2</sup> As described in the Objectives, Scope, and Methodology (OSM) section of this report, the audit population included all GL expenses with transaction dates within the audit period, during the month before the audit period (as costs are typically claimed one month in arrears) and up to 3 days after the audit period (as ACM\$ allows drawdowns 3 days in advance). See the OSM section for further details.

**Figure 1. Costs Charged to NAS’s GL by NSF Budget Category, October 1, 2013, through November 3, 2016**



*Source:* Auditor analysis of accounting data provided by NAS

This performance audit, conducted under Order No. D16PB00551, was designed to meet the objectives identified in the Objectives, Scope, and Methodology (OSM) section of this report (Appendix C) and was conducted in accordance with Generally Accepted Government Auditing Standards (GAGAS), issued by the U.S. Government Accountability Office. We communicated the results of our audit and the related findings and recommendations to NAS and NSF OIG.

## II. AUDIT RESULTS

As described in the OSM section of this report, this performance audit included obtaining transaction-level data for all costs that NAS claimed on NSF awards during the audit period. We judgmentally selected a sample of 250 transactions for testing, totaling \$2,929,619.

NAS did not always comply with all Federal, NSF, and NAS regulations and policies when allocating expenses to NSF awards. It needs improved oversight of the allocation of expenses to ensure costs claimed are reasonable, allocable, and allowable in accordance with those regulations and policies. As a result of our testing, we questioned \$90,902 in direct and indirect costs claimed by NAS during the audit period, as follows:

- \$54,725 of expenses inappropriately drawn down from ACM\$;
- \$12,447 of inappropriately allocated expenses;
- \$12,046 of over-charged meal expenses; and
- \$11,684 of unallowable travel expenses.

In addition to the four questioned cost findings identified above, we also noted an additional non-compliance finding, which did not result in questioned costs, as follows:

- Expense reports were not submitted within 30 days.

We provide a breakdown of the questioned costs by finding in Appendix A of this report.

### **Finding 1: ACM\$ Funds Improperly Drawn Down**

NAS did not draw down funding on NSF awards in accordance with NSF or Federal policies. Specifically, NAS routinely drew down funds in ACM\$ without considering the actual costs incurred on its NSF awards, and as a result, it drew down \$54,725 of unsupported costs.

Federal policies published by the Office of Management and Budget (OMB)<sup>3</sup> state that a recipient's financial management system must provide records that adequately identify the source and application of funds awarded for federally funded activities; however, NAS was unable to identify how it had applied funds received from NSF during the audit period. Specifically, NAS did not draw down funds based on actual expenditures, nor was it able to support the methodology it used to draw down the funds. As a result, NAS was unable to reconcile the total costs it had claimed in ACM\$ during the audit period to the actual costs incurred per its GL.

Because NAS was unable to reconcile its GL to the funds it drew down from ACM\$ during the audit period, it provided GL data to support all expenses charged to the 166 NSF awards for which it claimed costs during the audit period. Although the total expenses recorded in the GL for all 166 awards exceeded the total costs claimed in ACM\$ for the awards,<sup>4</sup> the expenses recorded in the GL for the individual awards did not equal the costs claimed in ACM\$ for 135 of the 166 NSF awards. Specifically, we found that the total funds that NAS drew down on an NSF award in ACM\$ often exceeded the total expenses incurred on that award for 1 or more months during the audit period. As a result, as of the end of our audit period, NAS had drawn down \$54,725 on 18 NSF awards that was not supported by actual expenses, as follows:<sup>5</sup>

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<sup>3</sup> See 2 Code of Federal Regulations (CFR) 215.21 and 2 CFR 200.302(b).

<sup>4</sup> The GL data supported \$68,052,759 of total expenses charged to the 166 awards, while the NSF ACM\$ records supported \$67,398,874.

<sup>5</sup> For 15 of these awards, NAS drew down all of the remaining funding for the award at the end of the award's POP.

**Table 1. Total Supported by NAS's GL Compared to the Total Drawn Down in ACM\$**

<b>Expired Awards that were Overdrawn as of October 1, 2016</b>				
<b>NSF Award No.</b>	<b>Final Draw Date</b>	<b>Total Draw Amount</b>	<b>Total Expenses per NAS's GL</b>	<b>Unsupported Amount</b>
	3/26/2015	\$645,001	\$644,458	\$543
	9/11/2014	2,400,000	2,399,631	369
	9/17/2014	176,048	175,666	382
	1/17/2014	733,000	732,961	39
	9/17/2014	300,019	298,787	1,232
	11/21/2013	500,000	499,988	12
	7/30/2014	808,983	808,962	21
	1/2/2014	324,000	321,143	2,857
	9/17/2014	219,300	219,189	111
	9/17/2014	200,002	196,128	3,874
	9/11/2015	1,200,000	1,194,463	5,537
	11/7/2013	200,000	198,539	1,461
	3/21/2016	836,619	836,603	16
	4/15/2016	276,998	276,993	5
	9/11/2014	215,000	214,981	19
	6/20/2014	39,998	39,912	86
<b>Total Unsupported on Expired Awards</b>				<b>\$16,564</b>
<b>Active Awards that were Overdrawn as of October 31, 2016</b>				
<b>NSF Award No.</b>	<b>Award Expiration Date</b>	<b>Total Draw Amount</b>	<b>Total Expenses per NAS's GL</b>	<b>Unsupported Amount</b>
		\$86,865	\$74,086	\$12,779
		193,908	168,526	<u>25,382</u>
<b>Total Unsupported on Active Awards</b>				<b>\$38,161</b>
<b>Total Unsupported Amount</b>				<b><u>\$54,725</u></b>

Source: Auditor analysis of accounting data provided by NAS and NSF OIG.

We therefore questioned the \$54,725 in unsupported drawdowns.

Although NSF and Federal regulations permit advance payments, NAS did not comply with the advance payment policies established by NSF and OMB.<sup>6</sup> Specifically, NAS did not limit its advances to the minimum amounts needed; did not identify the transactions associated with its cash drawdown requests; and did not time its drawdowns in accordance with its actual,

<sup>6</sup> In addition to the payment policies included in OMB, CFR, and NSF guidance, NSF Proposal & Award Policies and Procedures Guides (PAPPGs) applicable to the audited awards stated that payments to awardees should be limited to the minimum amount needed and should be timed to be in accordance with the actual, immediate cash requirements of the grantee in carrying out the purpose of the approved program or project.

immediate cash needs as required.<sup>7</sup> Furthermore, the NSF and OMB payment policies state that the timing and amount of cash advances should be as close as is administratively feasible to the grantee's actual disbursements for program costs. NAS therefore should have considered the actual costs it incurred on these awards before requesting advance payments.

### ***Recommendations***

We recommend that NSF's Director of the Division of Institution and Award Support direct NAS to:

1. Repay NSF the \$54,725 of questioned costs.
2. Strengthen the administrative and management controls and processes over ACM\$ drawdowns to ensure that it only requests funding based on actual expenses.
3. Ensure its accounting system allows for the identification of transactions associated with cash requests submitted to NSF.
4. Ensure its ACM\$ cash drawdown process documents the transactions for which reimbursement is being requested.
5. Provide detailed expenditure reports to NSF to support all costs drawn down using ACM\$ until it strengthens its controls and processes over ACM\$, per Recommendations 2, 3, and 4 above.

**NAS Response:** NAS agreed with this finding, noting that it has already removed the questioned costs from the relevant awards and that it will refund NSF for these amounts. NAS also stated that it has revised its drawdown procedures to enable it to trace cash drawdowns to the related expenses within its financial system.

**Auditors' Additional Comments:** Our position regarding this finding does not change.

### **Finding 2: Expenses Not Appropriately Allocated to NSF Awards**

NAS did not appropriately allocate expenses to NSF awards based on the relative benefits each award received, as required by 2 Code of Federal Regulations (CFR) 230 and 2 CFR 200.<sup>8</sup> Specifically, NAS inappropriately allocated \$12,447 across four NSF awards, as follows:

- ***Unallocable Airfare Expense:*** In June 2014, NAS charged \$1,378 to NSF Award No. [REDACTED] for airfare expenses incurred by an individual who was not identified in the

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<sup>7</sup> See 2 CFR 215.21(b)(2), 2 CFR 215.22(b), 2 CFR 200.302(b)(3), 2 CFR 200.305(b), and NSF PAPPG Chapter III, Sec. C.2.

<sup>8</sup> Under 2 CFR 230, Appendix A, Section A.4, and 2 CFR §200.405, a cost is allocable to a particular cost objective if the goods or services involved are chargeable or assignable to that cost objective in accordance with the relative benefits received.

budget or in the annual reports. Because the employee did not allocate effort to this award, NAS should not have charged their travel expenses to the award.

NAS stated that it had incorrectly allocated this charge to the award and agreed to remove the charge.

- **Unallocable Stipend Expense:** In April 2015, NAS charged \$8,815 to NSF Award No. [REDACTED] for a fellowship stipend for a graduate student. Because the award’s budget did not include funding for stipends and NAS did not identify the student as a participant on this project in the budget or in the annual reports, NAS should not have charged this expense to the award.

NAS agreed to remove this expense from the award, as it did not obtain NSF’s approval to charge stipend expenses to the award.

- **Unallocable Meeting Expense:** In January 2016, NAS charged \$1,402 to NSF Award No. [REDACTED] for rental fees for an exhibit booth at a committee meeting. Because NAS did not include the committee meeting in the annual report and the budget did not include funding for exhibit booth rentals, NAS should not have charged this expense to the award.

NAS stated that it had incorrectly allocated this charge to the award and agreed to remove the charge.

- **Unallocable Lodging Expense:** In March 2016, NAS charged \$852 to NSF Award No. [REDACTED] for costs incurred for two hotel room cancellations and two no-show fees. Because these expenses did not benefit the award, NAS should not have charged them to the award.

NAS stated that it had inadvertently charged these costs to the award and agreed to remove them.

NAS did not have sufficient controls and processes in place to ensure that it consistently allocated costs to sponsored projects based on the relative benefits received by the awards charged. We are therefore questioning \$12,447 in inappropriately allocated expenses, as follows:

**Table 2. Expenses Not Appropriately Allocated to NSF Awards**

Description	NSF Award No.	Fiscal Year	Questioned Costs
Unallocable Airfare Expense	[REDACTED]	2014	\$1,378
Unallocable Fellowship Expense	[REDACTED]	2015	8,815
Unallocable Meeting Expense	[REDACTED]	2016	1,402
Unallocable Lodging Expense	[REDACTED]	2016	852
<b>Total Questioned Costs</b>			<b><u>\$12,447</u></b>

Source: Auditor summary of questioned transactions.

**Recommendations**

We recommend that NSF’s Director of the Division of Institution and Award Support direct NAS to:

1. Repay NSF the \$12,447 of questioned costs.
2. Strengthen the administrative and management controls and processes over charging non-budgeted expenses to sponsored funding sources. Processes could include requiring Principal Investigators (PIs) or other designated personnel to provide written justification supporting how expenses charged to unbudgeted line items benefitted sponsored awards before allowing the PIs to charge the expenses to the sponsored funding source.
3. Strengthen the administrative and management controls and processes over charging room cancellations and no-show expenses to sponsored funding sources.

**NAS Response:** NAS agreed with this finding, noting that it has already removed the questioned costs from the relevant awards and that it will refund NSF for these amounts. NAS also stated that it will enhance its administrative and management controls surrounding the proper allocation of expenses and the required supporting documentation for expenses.

**Auditors’ Additional Comments:** Our position regarding this finding does not change.

**Finding 3: Unallowable Meal Expenses**

NAS inappropriately charged \$12,046 for meal expenses that exceeded the maximum allowable cost per person. Specifically, NAS’s Meal Allowance Policy states that the per-person cost of meals provided at meetings must be reasonable and may not exceed \$15 for breakfast, \$25 for lunch, or \$50 for dinner. However, we identified eight instances across seven NSF awards in which NAS charged NSF for meal expenses that exceeded the allowable rates, as follows:

**Table 3. Meal Expenses Exceeding the Allowable Amount**

NSF Award No.	Fiscal Year	Meal Expenses Incurred	Allowable Meal Expenses	Meal Expenses Overcharged
[REDACTED]	2013	\$7,327	\$3,353	\$3,974
	2014	2,531	1,157	1,374
	2014	3,022	1,381	1,641
	2015	3,558	1,497	2,061
	2015	730	624	106
	2015	5,606	4,941	665
	2016	2,805	1,430	1,375
	2016	1,960	1,110	850
<b>Total</b>		<b><u>\$27,539</u></b>	<b><u>\$15,493</u></b>	<b><u>\$12,046</u></b>

Source: Auditor summary of questioned transactions.

NAS did not have sufficient controls and processes in place to ensure that departments do not exceed NAS's established per-diem meal allowance policy. We are therefore questioning \$12,046 in inappropriately allocated meal expenses, as identified in Table 3.

### ***Recommendations***

We recommend that NSF's Director of the Division of Institution and Award Support direct NAS to:

1. Repay NSF the \$12,046 of questioned costs.
2. Strengthen the administrative and management controls and processes over meal expenses charged to sponsored projects to ensure compliance with NAS policy. Processes could include requiring that NAS review all conference meal expenses for compliance with its Meal Allowance Policy before charging the expenses to a sponsored project.

**NAS Response:** NAS agreed with this finding, noting that it has already removed the questioned costs from the relevant awards and that it will refund NSF for these amounts. NAS also stated that it will enhance its administrative and management controls surrounding the proper allocation of meal expenses to sponsored projects.

**Auditors' Additional Comments:** Our position regarding this finding does not change.

### **Finding 4: Unallowable Travel Expenses**

NAS charged \$11,684 of unallowable travel expenses to two NSF awards, as follows:

- **August 2015 Travel Expenses:** In August 2015, NAS charged \$10,987 to Award No. [REDACTED] for expenses incurred to host a 2-hour evening reception as part of a grant-related conference held at the [REDACTED]. The event invitation stated that the reception was for guests and significant others, and the participant list indicated that both conference participants and their family members attended the event; as such, the reception appears to have been entertainment related rather than grant related. With limited exception, entertainment costs are expressly unallowable under 2 CFR 230 and 2 CFR 200;<sup>9</sup> NAS therefore should not have charged these costs to NSF.

NAS stated that it incorrectly allocated these expenses to the award and agreed to remove them.

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<sup>9</sup> According to 2 CFR 230, Appendix B, Section 14, costs of entertainment, including amusement and social activities and any other costs directly associated with such costs, such as meals, are unallowable. Those costs are also unallowable under 2 CFR §200.438, "except where specific costs that might otherwise be considered entertainment have a programmatic purpose and are authorized either in the approved budget for the Federal award or with the prior written approval of the Federal awarding agency."

- **April 2016 Travel Expenses:** In April 2016, NAS charged \$697 to Award No. [REDACTED] for lodging expenses that a [REDACTED] employee incurred to stay at a conference hotel in Washington, DC, which is less than 50 miles from [REDACTED]. NAS's *Travel at the Academies: Policies for Per Diem* states that travelers may only receive reimbursement for lodging if they are required to travel more than 50 miles from their usual official place of business.<sup>10</sup> NAS therefore should not have charged these lodging expenses to the award.

NAS stated that it incorrectly allocated these expenses to the award and agreed to remove them.

NAS does not have sufficient controls and processes in place to ensure that all travel expenses allocated to NSF awards are allowable in accordance with all relevant Federal and NAS policies. We are therefore questioning \$11,684 of unallowable travel expenses, as follows:

**Table 4. Unallowable Travel Expenses**

Description	NSF Award No.	Fiscal Year	Questioned Costs
August 2015 Travel Expense	[REDACTED]	2015	\$10,987
April 2016 Travel Expense	[REDACTED]	2016	<u>697</u>
<b>Total Questioned Costs</b>			<b><u>\$11,684</u></b>

Source: Auditor summary of questioned transactions

**Recommendations**

We recommend that NSF's Director of the Division of Institution and Award Support direct NAS to:

1. Repay NSF the \$11,684 of questioned costs.
2. Strengthen the administrative and management controls and processes over expenses that are allocable to expense categories that accumulate potentially unallowable costs.

**NAS Response:** NAS agreed with this finding, noting that it has already removed the questioned costs from the relevant awards and that it will refund NSF for these amounts. NAS also stated that it will enhance its administrative and management controls surrounding the proper allocation of travel expenses to sponsored projects.

**Auditors' Additional Comments:** Our position regarding this finding does not change.

<sup>10</sup> Specifically, NAS's *Travel at the Academies: Policies for Per Diem* states that travelers are eligible for reimbursement of actual costs that do not exceed federal per diem for lodging and meals and incidental expenses (M&IE) when they meet three conditions: (1) official travel is performed more than 50 miles away from the traveler's usual official place of business, (2) per diem expenses are incurred while performing official travel, and (3) travel takes place over at least 12 hours.

**Finding 5: Expense Reports Not Submitted Within 30 Days**

NAS’s *Travel Policies Overview* states that personnel must submit expense reports within 30 days of completing travel. However, we identified seven instances in which NAS submitted expense reports that did not adhere to this time limit, as follows:

**Table 5. Expense Reports Not Submitted Within 30 Days**

Fiscal Year	NSF Award No.	Trip End Date	Expense Report Submission Date	No. of Days Between Trip End Date and Report Submission Date	Travel Expense Report Amount
2014		September 15, 2014	November 20, 2014	66 days	\$15,591
2014		November 8, 2014	December 12, 2014	34 days	4,418
2015		November 8, 2014	February 3, 2015	87 days	4,114
2016		January 13, 2016	February 18, 2016	36 days	2,891
2016		January 13, 2016	February 18, 2016	36 days	2,830
2016		January 13, 2016	April 26, 2016	104 days	1,071
2016		January 17, 2016	March 29, 2016	72 days	3,635

Source: Auditor summary of questioned transactions.

The sampled costs appeared to be allocable to the awards charged; however, because 2 CFR 230, Appendix A, Sec. 2.c. and 2 CFR 200.403(c) require consistent application of recipient policies and procedures as a factor affecting allowability of costs, NAS should be following its internal policy for timely submission of expense reports. Without proper procedures to enforce its travel policy, NAS could inappropriately allocate travel costs to sponsored funding sources.

**Recommendation**

We recommend that NSF’s Director of the Division of Institution and Award Support direct NAS to strengthen the administrative and management controls and processes over expense reporting to ensure that it properly reports travel within the required time limit.

**NAS Response:** NAS agreed with the auditor’s recommendation and stated that it will enhance its administrative and management controls and processes related to timely submission of expense reports.

**Auditors’ Additional Comments:** Our position regarding this finding does not change.

COTTON & COMPANY LLP



Michael W. Gillespie, CPA, CFE  
Partner

**APPENDIX A: SCHEDULE OF QUESTIONED COSTS BY FINDING**

NATIONAL SCIENCE FOUNDATION  
ORDER # D16PB00551  
PERFORMANCE AUDIT OF INCURRED COSTS ON NSF AWARDS  
NATIONAL ACADEMY OF SCIENCES

SCHEDULE OF QUESTIONED COSTS BY FINDING

Finding	Description	Questioned Costs		Total
		<i>Unsupported</i>	<i>Unallowable</i>	
1	ACMS\$ Funds Improperly Drawn Down	\$54,725	\$0	\$54,725
2	Expenses Not Appropriately Allocated to NSF Awards	0	12,447	12,447
3	Unallowable Meal Expenses	0	12,046	12,046
4	Unallowable Travel Expenses	0	11,684	11,684
5	Expense Reports Not Submitted Within 30 Days	0	0	0
<b>Total</b>		<b><u>\$54,725</u></b>	<b><u>\$36,177</u></b>	<b><u>\$90,902</u></b>

**APPENDIX B: NATIONAL ACADEMY OF SCIENCES RESPONSE**

*The National Academies of*  
**SCIENCES • ENGINEERING • MEDICINE**

July 19, 2018

Cotton & Company, LLP  
635 Slaters Lane, 4<sup>th</sup> Floor  
Alexandria, VA 22314

**Finding 1: ACM\$ Funds Improperly Drawn Down**

***Recommendations***

We recommend that NSF's Director of the Division of Institution and Award Support direct NAS to:

1. Repay NSF the \$54,725 of questioned costs.
2. Strengthen the administrative and management controls and processes over ACM\$ drawdowns to ensure that it only requests funding based on actual expenses.
3. Ensure its accounting system allows for the identification of transactions associated with cash requests submitted to NSF.
4. Ensure its ACM\$ cash drawdown process documents the transactions for which reimbursement is being requested.
5. Provide detailed expenditure reports to NSF to support all costs drawn down using ACM\$ until it strengthens its controls and processes over ACM\$, per Recommendations

*NAS Response: NAS agrees with this finding and has already removed these costs from the awards and will initiate refunds. In addition, NAS has revised its drawdown procedures and draws can now be traced to the related expenses within our financial system. We believe that the controls and processes are currently effective. NAS currently provides SF 425 Financial Reports that accurately support both total drawdowns and expenditures. We can furnish detailed expenditures upon request.*

**Finding 2: Expenses Not Appropriately Allocated to NSF Awards**

***Recommendations***

We recommend that NSF's Director of the Division of Institution and Award Support direct NAS to:

1. Repay NSF the \$12,447 of questioned costs.
2. Strengthen the administrative and management controls and processes over charging non-budgeted expenses to sponsored funding sources. Processes could include requiring Principal Investigators (PIs) OR DESIGNEE to provide written justification supporting how expenses charged to unbudgeted line items benefitted sponsored awards before allowing the PIs to charge the expenses to the sponsored funding source.

3. Strengthen the administrative and management controls and processes over charging room cancellations and no-show expenses to sponsored funding sources.

*NAS Response: NAS agrees with this finding and has already removed these costs from the awards and will initiate refunds. NAS will enhance its administrative and management controls surrounding the proper allocation and supporting documentation of expenses. NAS has taken several steps to manage attrition costs. Specifically, NAS has been working with preferred hotel partners to identify and minimize attrition costs. NAS has also provided formal staff training on hotel room block management.*

### **Finding 3: Unallowable Meal Expenses**

#### ***Recommendations***

We recommend that NSF's Director of the Division of Institution and Award Support direct NAS to:

1. Repay NSF the \$12,046 of questioned costs.
2. Strengthen the administrative and management controls and processes over meal expenses charged to sponsored projects. Processes could include requiring that NAS review all conference meal expenses for compliance with its Meal Allowance Policy before charging the expenses to a sponsored project.

*NAS Response: NAS agrees with this finding and has already removed these costs from the awards and will initiate refunds. NAS will enhance its administrative and management controls surrounding the proper allocation of meal expenses to sponsored projects.*

### **Finding 4: Unallowable Travel Expenses**

#### ***Recommendations***

We recommend that NSF's Director of the Division of Institution and Award Support direct NAS to:

1. Repay NSF the \$11,684 of questioned costs.
2. Strengthen the administrative and management controls and processes over expenses that are allocable to expense categories that accumulate potentially unallowable costs.

*NAS Response: NAS agrees with this finding and has already removed these costs from the awards and will initiate refunds. NAS enhance its administrative and management controls surrounding the proper allocation of travel expenses to sponsored projects.*

### **Finding 5: Expense Reports Not Submitted Within 30 Days**

#### ***Recommendation***

We recommend that NSF's Director of the Division of Institution and Award Support direct NAS to strengthen the administrative and management controls and processes over expense reporting to ensure that it properly reports travel within the required time limit.

*Response: NAS agrees with the recommendation. NAS will enhance its administrative and management controls and processes related to timely expense reports submission. NAS now distributes a weekly listing of outstanding travel expense reports to assist in the follow-up with travelers. Also, in the third quarter, NAS will roll out enhanced communications to travelers to reinforce the importance of timely expense reports submission.*

## **APPENDIX C: OBJECTIVES, SCOPE, AND METHODOLOGY**

## OBJECTIVES, SCOPE, AND METHODOLOGY

The NSF OIG Office of Audit engaged Cotton & Company LLP (referred to as “we” in this report) to conduct a performance audit of costs that NAS incurred on NSF awards for the period from November 1, 2013, through October 31, 2016. The objective of the audit was to determine if costs claimed by NAS during this period were allocable, allowable, reasonable, and in conformity with NSF award terms and conditions and applicable Federal financial assistance requirements.

Our work required us to rely on computer-processed data obtained from NSF OIG and from NAS. NSF OIG provided data to support \$42,881,788 of costs that NAS claimed through ACM\$ on 166 NSF awards during our audit period. NSF OIG also provided computer-processed data that contained relevant budget and award header details for these 166 awards.

We requested that NAS provide transaction-level expenditure data to support the \$42,881,788 of costs claimed through ACM\$; however, NAS was unable to reconcile its transaction-level data to the costs claimed in ACM\$ because it did not claim costs based on actual expenditures (see Finding 1 for additional information). Because NAS was unable to identify the expenditures that related to costs claimed during the audit period, it agreed to provide expenditure data to support all costs incurred on the 166 NSF awards.

Because NAS was unable to determine which transactions supported the costs claimed during the audit period, we were unable to select our transaction sample from the population identified in the initial scope of our audit. Therefore, based on discussions with the NSF OIG audit team, we modified the scope of our audit to examine expenditures that NAS charged to cost objects set up to accumulate costs on NSF awards from October 1, 2013, to November 3, 2018.<sup>11</sup> We extracted this data from the data that NAS provided to support all costs incurred on the 166 NSF awards, which resulted in an audit universe of \$43,196,509.<sup>12</sup>

Based on our assessment, we found NAS’s computer-processed data to be sufficiently reliable for the purposes of this audit, using our modified scope. 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 FY 2016 found no reportable instances in which NSF’s financial management systems did not substantially comply with applicable requirements.

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<sup>11</sup> Our audit population included all expenses with transaction dates within the audit period, or November 1, 2013, through October 31, 2016. It also included expenses with transaction dates up to 1 month before the beginning of the audit period, as costs are typically claimed 1 month in arrears, and expenses with transaction dates up to 3 days after the end of the audit period, as ACM\$ allows organizations to draw down funding up to 3 days before incurring the expense.

<sup>12</sup> NAS’s expenditure data supported that it charged \$43,196,509 of expenses to cost objects set up to accumulate expenses on the 166 awards from October 1, 2013, to November 3, 2018, which was more than the \$42,881,788 claimed from NSF during the audit period. However, we still noted significant discrepancies (i.e., greater than \$1,000) between the amounts that NAS claimed through ACM\$ and the actual expenditures incurred on 98 of the 166 awards with costs claimed.

NAS management is responsible for establishing and maintaining effective internal controls to help ensure that it uses Federal award funds in compliance with laws, regulations, and award terms. In planning and performing our audit, we considered NAS's internal control solely for the purpose of understanding the policies and procedures relevant to the financial reporting and administration of NSF awards and to evaluate NAS'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 NAS's internal control over award financial reporting and administration. Accordingly, we do not express an opinion on the effectiveness of NAS's internal control over its award financial reporting and administration.

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 NAS's system that warranted focus during our testing.

We began our analytics process by reviewing the transaction-level data that NAS provided and using IDEA software to combine it with the NSF OIG-provided data. 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, 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 250 transactions for testing and sent the proposed list to NSF OIG for review and approval. In addition, based on discrepancies identified during our reconciliation, we proposed conducting two cluster tests to evaluate whether NAS inappropriately drew down funding on NSF awards. After receiving approval from NSF OIG, we requested that NAS provide documentation to support each transaction, as well as the relevant information required to support our cluster testing. We reviewed the supporting documentation to determine if we had obtained sufficient, appropriate evidence to support the allowability of the sampled expenditures. When necessary, we requested and reviewed additional supporting documentation and obtained explanations and justifications from PIs and other knowledgeable NAS personnel until we had sufficient support to assess the allowability, allocability, and reasonableness of each transaction.

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 NAS personnel, to ensure that they were aware of each of our findings and did not have any additional documentation to support the questioned costs.

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.



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