

# Performance Audit of Incurred Costs – Johns Hopkins University

REPORT PREPARED BY WITHUMSMITH+BROWN, P.C.

NATIONAL SCIENCE FOUNDATION  
OFFICE OF INSPECTOR GENERAL

April 24, 2020  
OIG 20-1-003





## AT A GLANCE

Performance Audit of Incurred Costs – Johns Hopkins University

Report No. OIG 20-1-003

April 24, 2020

### AUDIT OBJECTIVE

The National Science Foundation Office of Inspector General engaged WithumSmith+Brown, P.C. (WSB) to conduct a performance audit of incurred costs at Johns Hopkins University (JHU) for the period February 1, 2016, to January 31, 2019. The auditors tested more than \$1.8 million of the \$116.8 million of costs claimed to NSF. The objective of the audit was to determine if costs claimed by JHU on NSF awards were allowable, allocable, reasonable, and in compliance with NSF award terms and conditions and Federal financial assistance requirements.

### AUDIT RESULTS

The report highlights concerns about JHU's compliance with certain Federal and NSF regulations when allocating expenses to NSF awards. The auditors questioned \$91,048 of costs claimed by JHU during the audit period. Specifically, the auditors found \$68,984 in questionable purchases near award expiration, \$13,373 in unallocable or unreasonable travel, \$6,075 in unallocable fringe benefits, and \$2,616 in inadequately supported transactions. WSB is responsible for the attached report and the conclusions expressed in this report. NSF OIG does not express any opinion on the conclusions presented in WSB's audit report.

### RECOMMENDATIONS

The auditors included 4 findings in the report with associated recommendations for NSF to ensure JHU credits or repays the questioned costs and to ensure JHU strengthens administrative and management controls.

### AUDITEE RESPONSE

JHU agreed with all of the findings in the report. JHU's response is attached in its entirety to the report as Appendix A.

FOR FURTHER INFORMATION, CONTACT US AT [OIGPUBLICAFFAIRS@NSF.GOV](mailto:OIGPUBLICAFFAIRS@NSF.GOV)



**National Science Foundation • Office of Inspector General**  
2415 Eisenhower Avenue, Alexandria, Virginia 22314

**MEMORANDUM**

**DATE:** April 24, 2020

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

Jamie French  
Director  
Division of Grants and Agreements



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

**SUBJECT:** Audit Report No. 20-1-003, Johns Hopkins University

This memo transmits the WithumSmith+Brown, P.C. (WSB) report for the audit of costs charged by Johns Hopkins University (JHU) to its sponsored agreements with the National Science Foundation (NSF) during the period February 1, 2016, to January 31, 2019. The audit encompassed more than \$1.8 million of the \$116.8 million claimed to NSF during the period. The objective of the audit was to determine if costs claimed by JHU on NSF awards were allowable, allocable, reasonable, and in compliance with NSF award terms and conditions and 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 of the Audit**

WSB 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 WSB's audit report. To fulfill our responsibilities, we:

- reviewed WSB'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 WSB, as necessary, to discuss audit progress, findings, and recommendations;
- reviewed the audit report prepared by WSB; 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 Billy McCain at 703.292.7100 or [OIGpublicaffairs@nsf.gov](mailto:OIGpublicaffairs@nsf.gov).

Attachment

cc:

Anneila Sargent  
John Veysey  
Ann Bushmiller  
Christina Sarris  
Fleming Crim

Teresa Grancorvitz  
Pamela Hawkins  
Alex Wynnyk  
Rochelle Ray  
Carrie Davison

Allison Lerner  
Lisa Vonder Haar  
Ken Chason  
Dan Buchtel  
Ken Lish

Jennifer Kendrick  
Louise Nelson  
Karen Scott  
Billy McCain

# **Johns Hopkins University**

## **Audit of Incurred Costs**

**National Science Foundation  
Office of Inspector General**

**April 24, 2020**

**OIG 20-1-003**

---

## Table of Contents

---

Background .....	1
Results of Audit .....	2
Finding 1: Purchases Near or After Award Expiration.....	2
Recommendations .....	6
Awardee Response .....	6
Auditor’s Additional Comments .....	7
Finding 2: Unallocable or Unreasonable Travel.....	7
Recommendations .....	10
Awardee Response .....	10
Auditor’s Additional Comments .....	10
Finding 3: Unallocable Fringe Benefit .....	11
Recommendations .....	11
Awardee Response .....	12
Auditor’s Additional Comments .....	12
Finding 4: Inadequately Supported Transactions .....	12
Recommendations .....	13
Awardee Response .....	13
Auditor’s Additional Comments .....	13
Appendix A: Awardee Response .....	14
Appendix B: Objective, Scope, Methodology, and Criteria .....	18
Objective .....	18
Scope .....	18
Methodology .....	18
Criteria.....	19
Appendix C: Questioned Costs Summary by Award .....	20

---

## Abbreviations

---

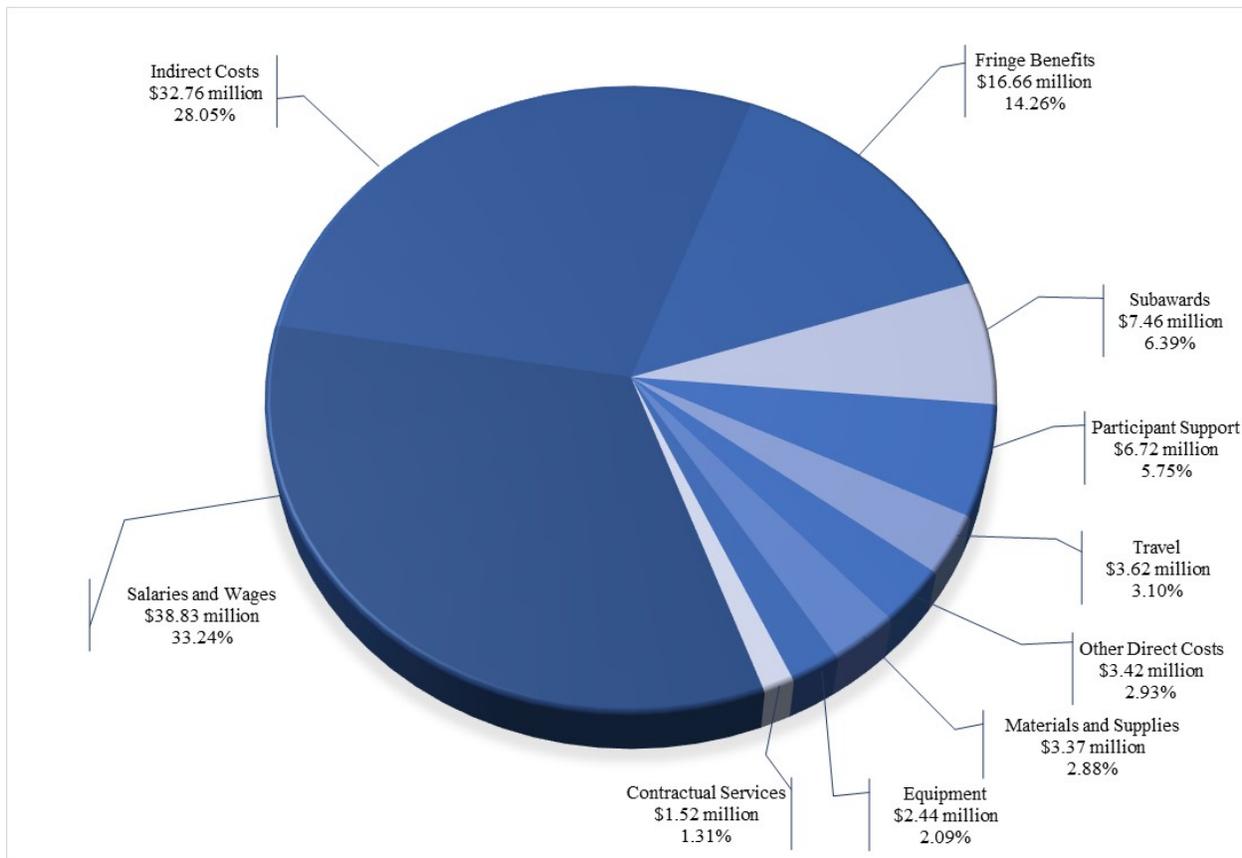
F&A	Facilities and Administrative (costs)
PI	Principal Investigator
JHU	Johns Hopkins University

## Background

The National Science Foundation is an independent Federal agency created “to promote the progress of science; to advance the national health, prosperity, and welfare; and to secure the national defense.”<sup>1</sup> NSF is also committed to ensuring an adequate supply of the Nation’s scientists, engineers, and science educators. NSF funds research and education in science and engineering by awarding grants and contracts to educational and research institutions in all parts of the United States.

NSF awardees must follow Federal and NSF award regulations and guidance in administering NSF awards. Research related services at Johns Hopkins University (JHU), “are provided through approximately 2,100 government and private sponsors.” JHU had \$3 billion in Federal expenditures in Fiscal Year 2018, and NSF funding represented approximately \$44 million of that total. Between February 1, 2016, and January 31, 2019, JHU claimed approximately \$117 million of costs on 475 NSF awards. See Figure 1 for an analysis of these costs by budget category.

**Figure 1. Costs Claimed by NSF Budget Category, February 1, 2016, to January 31, 2019**



Source: Auditor summary of accounting data provided by JHU

<sup>1</sup> National Science Foundation Act of 1950, Pub. L. No. 81-507

## Results of Audit

WithumSmith+Brown, PC under contract with NSF OIG, audited the costs claimed by JHU on NSF awards for the period beginning February 1, 2016, and ending January 31, 2019. In our testing of 250 judgmentally selected transactions, we identified 32 transactions totaling \$91,048 of questioned costs charged to 21 NSF awards. Improved oversight is needed in four areas to ensure costs claimed are reasonable, necessary, and in accordance with Federal and NSF award requirements. The four areas are: 1) \$68,984 in purchases near award expiration; 2) \$13,373 in unallocable or unreasonable travel; 3) \$6,075 in unallocable fringe benefit; and 4) \$2,616 in inadequately supported transactions. See Appendix C for a schedule of questioned costs by award.

### Finding 1: Purchases Near or After Award Expiration

We question \$68,984 for purchases near or after the end of award periods for items that did not appear reasonable, necessary, or fully allocable to the awards charged.<sup>2</sup>

#### *Materials and Supplies Purchased and Received at the End of the Award*

We identified 14 transactions, charged to 10 awards, totaling \$57,142 for the purchase of various equipment and materials and supplies near or after the end of the awards' expiration dates that did not appear reasonable, necessary, fully allocable, or to provide benefit to the NSF awards charged, as shown in Table 1.

**Table 1. Questioned Transactions Near the Award Expiration**

Description	Award Number	Questioned Invoice	Questioned F&A	Questioned Total	Days Remaining	JHU Agreed to Reimburse
1 Structure Probe		\$ 11,445	\$ --	\$ 11,445	(46)	\$ 11,445
2 Freezer		6,221	--	6,221	(8)	6,221
3 Equipment Repair		3,693	2,290	5,983	10	5,983
4 Camera Repairs		3,750	1,950	5,700	3	5,700

<sup>2</sup> According to 2 CFR Part 220, Appendix A, §C.2 and C.3, costs “must be reasonable; they must be allocable to sponsored agreements .... 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. Major considerations involved in the determination of the reasonableness of a cost are: whether or not the cost is of a type generally recognized as necessary for the operation of the institution or the performance of the sponsored agreement....” Additionally, according to 2 CFR Part 220, Appendix A, §C.4, “[a] cost is allocable to a particular cost objective (i.e., a specific function, project, sponsored agreement, department, or the like) if the goods or services involved are chargeable or assignable to such cost objective in accordance with relative benefits received....” According to 2 CFR §200.403(a), a cost must be necessary, reasonable and allocable to be allowable under a Federal award. Additionally, according to 2 CFR §200.405(a), “[a] cost is allocable to a particular Federal award or other cost objective if the goods or services involved are chargeable or assignable to that Federal award or cost objective in accordance with relative benefits received.”

Description	Award Number	Questioned Invoice	Questioned F&A	Questioned Total	Days Remaining	JHU Agreed to Reimburse
5 Laptop and Accessories		2,972	1,843	4,815	105	4,815
6 Tube Furnace		2,739	1,698	4,437	(20)	4,437
7 pH meter		2,247	1,393	3,640	2	3,640
8 Evaporation Material		2,008	1,245	3,253	--	3,253
9 Silicon Wafers		1,725	1,070	2,795	(130)	2,795
10 Air Sensor		1,514	939	2,453	16	2,453
11 Graphite Plate		1,427	885	2,312	4	2,312
12 Instrument Repair		1,425	883	2,308	--	2,308
13 Laptop		1,299	104	1,403	4	1,403
14 Printer		349	28	377	8	377
<b>Total</b>		<b>\$ 42,814</b>	<b>\$ 14,328</b>	<b>\$ 57,142</b>		<b>\$ 57,142</b>

Source: Auditor analysis of questioned transactions

These items were charged to the NSF awards, when the awards received little, if any, benefit. The timing of the purchases, and subsequent receipt of the items, leads us to conclude that the purchases were not necessary, reasonable, fully allocable, or prudent for the administration of the awards.

The questioned items include:

1. Structure Probe – \$11,445 for 81 percent of the cost of a structure probe that was not shipped until August 15, 2018, 46 days after the NSF award expired on June 30, 2018. The equipment was received after the award expiration and therefore could not benefit this award (0 out of 1,825 days).
2. Freezer – \$6,221 for the purchase of a freezer that was ordered on July 8, 2016, 8 days after the award expiration on June 30, 2016. The equipment was ordered and received after the award expiration and therefore could not benefit this award (0 out of 1,460 days).
3. Equipment Repair – \$5,983 for equipment repair charges. The equipment was serviced June 20, 2018, on an award that expired June 30, 2018. Per JHU, the invoice was for maintenance that was needed to remedy the wear and tear on the equipment caused by the project. However, the maintenance was not necessary to complete the goals of the project. The serviced equipment was available for 1 percent of the award period (10 out of 1,080 days).
4. Camera Repairs – \$5,700 for camera repair charges made on July 28, 2016, on an award that expired July 31, 2016. The repaired camera was available for 3 days prior to the award expiration (3 out of 730 days). The camera repair charges were charged 100 percent to the NSF award, but this does not reflect the relative benefits received.

5. Laptop – \$4,815 for the purchase of a MacBook Pro, Apple Care, and adaptors on May 18, 2017, on an award that expired August 31, 2017. The PI stated that the Mac Book [REDACTED] was previously using died, and it was essential to order a new one. However, the computer was not used exclusively on this NSF award; per JHU, “it was also used for professional research and correspondence, and teaching needs as available.” The computer was available for 4 percent of the award period (105 out of 2,540 days). The computer was charged 100 percent to the NSF award, but this does not reflect the relative benefits received.
6. Tube Furnace – \$4,437 for 23 percent of the cost of a tube furnace that was purchased on July 20, 2018, 20 days after the NSF award expired on June 30, 2018. The item was received after the award expiration and therefore could not benefit this award (0 out of 1,825 days).
7. pH Meter – \$3,640 for the purchase of a pH meter that was delivered on August 29, 2018, on an award that expired August 31, 2018. The meter was available for less than 1 percent of the award life (2 out of 1,460 days). The meter was charged 100 percent to the NSF award, but this does not reflect the relative benefits received.
8. Evaporation Material – \$3,253 for evaporation material that was purchased on June 30, 2017, the same day as the NSF award expiration. Per JHU, “the item purchased was for supplies that had been depleted by the project from the general lab pool.” However, the material was received after the award expiration and therefore could not benefit this award (0 out of 1,080).
9. Silicon Wafers – \$2,795 for the purchase of supplies on November 7, 2017, 130 days after the award expiration on June 30, 2017. The supplies were received after the award expiration and therefore could not benefit this award (0 out of 1,080 days).
10. Air Sensor – \$2,453 for the purchase of an air sensor on September 14, 2017, on an award that expired September 30, 2017. The air sensor was available for 1 percent of the award period (16 out of 1,475 days). The air sensor was charged 100 percent to the NSF award, but this does not reflect the relative benefits received.
11. Graphite Plate – \$2,312 for a graphite plate purchased on July 27, 2016, on an award that expired July 31, 2016. The item was available less than 1 percent of the award period (4 out of 730 days). The item was charged 100 percent to the NSF award, but this does not reflect the relative benefits received.
12. Instrument Repair – \$2,308 for the repair of an instrument that was billed on October 20, 2016, 20 days after the NSF award expired on September 30, 2016. The instrument was repaired and returned after the NSF award expiration and therefore could not benefit this award.
13. Laptop – \$1,403 for the purchase of a laptop on August 27, 2018, on an award that expired August 31, 2018. The laptop was available less than 1 percent of the award period (4 out

of 2,555 days). The laptop was charged 100 percent to the NSF award, but this does not reflect the relative benefits received.

14. Printer – \$377 for the purchase of a printer that was delivered on August 23, 2018, on an award that expired August 31, 2018. The printer was available less than 1 percent of the award period (8 out of 2,555 days). The printer was charged 100 percent to the NSF award, but this does not reflect the relative benefits received.

Additionally, we questioned four transactions, charged to one award, totaling \$11,842, for materials and supplies purchased near the award expiration date. The purchases do not appear reasonable, necessary, fully allocable, or to provide benefit to the award charged, as shown in Table 2.

**Table 2. Transactions Near the Award Expiration**

Description	Award Number	Questioned Invoice	Questioned F&A	Questioned Total	Days Remaining	JHU Agreed to Reimburse
1 Rugged Case for [REDACTED]	[REDACTED]	\$ 1,708	\$ 1,059	\$ 2,767	20	\$ 2,767
2 Antenna for [REDACTED]	[REDACTED]	1,523	944	2,467	23	2,467
3 [REDACTED]	[REDACTED]	1,500	930	2,430	23	2,430
4 Insurance for [REDACTED]	[REDACTED]	2,579	1,599	4,178	(43)	4,178
<b>Total</b>		<b>\$ 7,310</b>	<b>\$ 4,532</b>	<b>\$ 11,842</b>		<b>\$ 11,842</b>

Source: Auditor analysis of questioned transactions

The questioned items include:

1. Rugged Case for [REDACTED] – \$2,767 for 50 percent of the cost of a rugged case for [REDACTED]. The [REDACTED] was shipped on May 11, 2018, on an award that expired May 31, 2018. The item was available for 1 percent of the award period (20 out of 1,825 days).
2. Antenna for [REDACTED] – \$2,467 for 50 percent of the cost of an antenna for [REDACTED] that was shipped on May 8, 2018, on an award that expired May 31, 2018. Per JHU, “The antenna [REDACTED] in [REDACTED]”

February/March of 2018, and was initially deployed in March of 2018 at the factory, then was used for the research in July of 2018.” The antenna was not used for research until July 2018, after the award expiration on May 31, 2018. The item was available for 1 percent of the award period (23 out of 1,825 days).

3. [REDACTED] – \$2,430 for 50 percent of the cost of [REDACTED] that was shipped on May 8, 2018, on an award that expired May 31, 2018. Per JHU, “The [REDACTED] in February/March of 2018, and was initially deployed in March of 2018 at the factory, then was used for the research in July.” The item was not used for research until July 2018, after the award expiration on May 31, 2018. The item was available for 1 percent of the award period (23 out of 1,825 days).
4. Insurance for [REDACTED] – \$4,178 for insurance purchased for an [REDACTED]. The insurance was for the period July 13, 2018, to July 13, 2019. The NSF award expired May 31, 2018. The insurance policy was for a 1-year period starting 1.5 months after the NSF award expired and therefore could not benefit the NSF award.

JHU personnel did not adequately review these questioned expenditures, which resulted in unreasonable costs. Enhanced oversight procedures and controls should be adopted to review expenditures charged near the end of the award period. Having improved oversight processes ensures costs are reasonable and allowable, thus reducing the risk that funds may not be used as required to accomplish the necessary project objectives in accordance with Federal and NSF requirements. JHU concurred with \$68,984 of the questioned costs.

### ***Recommendations***

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

1. Direct JHU to provide support that it has credited or repaid the \$68,984 of questioned equipment, material, and supply costs.
2. Direct JHU to strengthen the administrative and management procedures over expenditures near the end of an award. Processes could include requiring JHU to review all equipment and materials/supplies purchased during the final 90 days of an award’s period of performance to evaluate whether the costs are allocable in accordance with all relevant Federal and sponsor-specific regulations before charging the expenses to a sponsored project.

### ***Awardee Response***

JHU agrees with this finding. See Appendix A for the complete JHU response.

### *Auditor's Additional Comments*

JHU's comments are responsive to this finding. Once NSF determines that the recommendations have been adequately addressed and the \$68,984 in questioned costs have been resolved, this finding should be closed.

## **Finding 2: Unallocable or Unreasonable Travel**

We questioned \$13,373 in travel costs that did not appear to be allocable, reasonable, or necessary for the awards charged or were not in compliance with NSF requirements.

### *Travel Was Not Reasonable and Necessary*

We questioned one transaction, charged to one award, totaling \$2,737, for travel expenses that did not appear to be necessary, reasonable, or prudent for the administration of the award.<sup>3</sup>

- \$2,737 for travel expenses for the PI [REDACTED]. The expenses include 15 days of per diem, ground transportation, parking and a \$325 'gift in lieu of staying at friends'. Per JHU, the travel to [REDACTED] was to give a presentation, attend discussions relative to the funded research, and to collaborate on a joint project. However, the support provided by JHU was insufficient to support the reasonableness and allocability to the NSF award. There was no mention of international travel or international collaboration in the final report.

### *Unallocable Charges*

We questioned eight transactions, charged to seven awards, totaling \$9,467 for travel expenses that were not allocable to the awards charged.<sup>4</sup>

---

<sup>3</sup> According to 2 CFR Part 220, Appendix A, §C.2 and C.3, costs "must be reasonable; they must be allocable to sponsored agreements .... 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. Major considerations involved in the determination of the reasonableness of a cost are: whether or not the cost is of a type generally recognized as necessary for the operation of the institution or the performance of the sponsored agreement...." Additionally, according to 2 CFR §200.403(a), a cost must be necessary, reasonable and allocable to be allowable under a Federal award. Furthermore, per §200.405(a), "[a] cost is allocable to a particular Federal award or other cost objective if the goods or services involved are chargeable or assignable to that Federal award or cost objective in accordance with relative benefits received."

<sup>4</sup> According to 2 CFR Part 220, Appendix A, §C.2 and C.3, costs "must be reasonable; they must be allocable to sponsored agreements .... 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. Major considerations involved in the determination of the reasonableness of a cost are: whether or not the cost is of a type generally recognized as necessary for the operation of the institution or the performance of the sponsored agreement." Additionally, according to 2 CFR §200.405(a), "[a] cost is allocable to a particular Federal award or other cost objective if the goods or services involved are chargeable or assignable to that Federal award or cost objective in accordance with relative benefits received."

- \$2,630 for travel expenses for the PI that occurred after the NSF award expiration and therefore could not benefit this award. The PI traveled to [REDACTED] and [REDACTED] from June [REDACTED] to July [REDACTED], on an award that expired June 30, [REDACTED]. The PI attended a conference in [REDACTED] from June [REDACTED] to July [REDACTED] and then traveled to [REDACTED] from July [REDACTED] to July [REDACTED]. See Table 3 for a summary of the unallocable travel costs.

**Table 3. Summary of Unallocable Travel Costs**

	Description	Questioned Invoice	Questioned F&A	Questioned Total
1	Half of the cost of airfare as the [REDACTED] portion of the trip occurred after the NSF award expiration.	\$ 929	\$ 241	\$ 1,170
2	One-night lodging in [REDACTED] on July [REDACTED]	190	50	240
3	Two days per diem in [REDACTED] charged on July [REDACTED] and July [REDACTED]	186	48	234
4	Airfare from [REDACTED] to [REDACTED] on July [REDACTED]	114	30	144
5	Airfare baggage fees charged on July [REDACTED]	33	9	42
6	Car rental in [REDACTED] from July [REDACTED] to July [REDACTED]. Charged 4 days to the NSF award.	135	35	170
7	Fuel for rental car in [REDACTED] on July [REDACTED]	63	16	79
8	One-night lodging and parking in [REDACTED] on July [REDACTED]	191	50	241
9	Two days per diem in [REDACTED] charged in July [REDACTED]	210	55	265
10	Mileage from airport charged on July [REDACTED]	36	9	45
<b>Total</b>		<b>\$ 2,087</b>	<b>\$ 543</b>	<b>\$ 2,630</b>

- \$2,520 for housing and meal plan for an individual participating in the Summer [REDACTED] cohort from June [REDACTED] to August [REDACTED] that was charged to an NSF award that expired on April 30, [REDACTED]. Per JHU, the invoice was inadvertently processed under the PI's previous grant, when it should have been posted to their new one.
- \$1,261 for conference registration fees for the PI. Per JHU, the registration fees do not belong on the NSF award, as a coding error occurred at the time of posting.
- \$983 for airfare from [REDACTED] to [REDACTED] to attend a conference that did not benefit the NSF award. The individual originally purchased airfare to fly from [REDACTED] to [REDACTED] on [REDACTED] 2016; from [REDACTED] to [REDACTED] on [REDACTED] 2016; then return to [REDACTED], on [REDACTED] 2016. However, the individual became ill and could not make the second portion of the trip to [REDACTED]. Additional airfare was purchased to fly from [REDACTED]

██████ to ██████████ on ████████ 2016. We are questioning the additional airfare purchased, as the individual charged multiple flights to the NSF award, which did not benefit the award.

- \$980 for two nights' lodging in ██████████ for the PI that did not benefit the NSF award. The PI traveled to ████████ to attend a conference that began ████████ 2017, but arrived in ████████ on ████████ 2017. No reason for the early arrival in Seattle was given.
- \$971 for 3 nights' lodging that did not benefit the NSF award charged. The lodging receipt was for 5 nights, January ████████ to January ████████ 2016. The PI arrived at the hotel on January ████████ and departed on January ████████. Lodging was charged to the award for January ████████ and January ████████ when the PI did not stay at the hotel. Additionally, there was a ████████ charged on the hotel invoice on January ████████ 2016. Although the ████████ was not charged to the NSF award, it appears January ████████ was a personal day and therefore did not benefit the award.
- \$122 for a flight change fee that did not benefit the NSF award charged. Per JHU, the student missed ████████ flight and took a later flight ████████

Unallowable Charges

We questioned \$918 for alcoholic beverages and bartender fee charged to the NSF award. Costs of alcoholic beverages are unallowable.<sup>5</sup>

Excessive Meal Charges

We questioned \$251 for excessive meal charges while the PI was in ██████████, to attend a conference. The PI charged the NSF award \$207 for two dinners. The U.S. General Services Administration per diem rate for dinner in ██████████ in February 2016 was \$26. Using the U.S. General Services Administration per diem rate as a benchmark, we found \$155 of the meal charges to be excessive and unreasonable.

JHU personnel did not adequately review the above questioned travel expenses, which resulted in unallocable, unallowable, and unreasonable costs. Enhanced oversight procedures and controls should be adopted to review travel expenditures. Having improved oversight processes ensures costs are reasonable and allowable, thus reducing the risk that funds may not be used in accordance with Federal and NSF requirements. JHU concurred with \$13,373 of the questioned costs.

**Table 3. Summary of Unallocable or Unreasonable Travel**

	Description	Award Number	Questioned Invoice	Questioned F&A	Questioned Total	JHU Agreed to Reimburse
1	Travel expenses in ████████	████████	\$ 2,737	\$ --	\$ 2,737	\$ 2,737

<sup>5</sup> According to 2 CFR §200.405, the costs of alcoholic beverages are unallowable.

	Description	Award Number	Questioned Invoice	Questioned F&A	Questioned Total	JHU Agreed to Reimburse
2	Travel to [REDACTED] and to [REDACTED]	[REDACTED]	2,087	543	2,630	2,630
3	Housing and meal plan for an individual	[REDACTED]	2,520	--	2,520	2,520
4	Conference registration fees	[REDACTED]	1,150	111	1,261	1,261
5	Airfare to attend a conference	[REDACTED]	606	377	983	983
6	Two nights' lodging in [REDACTED]	[REDACTED]	605	375	980	980
7	Three nights' lodging	[REDACTED]	600	371	971	971
8	Alcoholic beverages	[REDACTED]	850	68	918	918
9	Excessive meal charges	[REDACTED]	155	96	251	251
10	Flight change fee	[REDACTED]	75	47	122	122
<b>Total</b>			<b>\$ 11,385</b>	<b>\$ 1,988</b>	<b>\$ 13,373</b>	<b>\$ 13,373</b>

Source: Auditor analysis of questioned transactions

### ***Recommendations***

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

1. Direct JHU to provide support that it has credited or repaid the \$13,373 of questioned travel costs.
2. Direct JHU to strengthen the administrative and management procedures over travel expenditures charged to NSF awards. Processes could include implementing controls to ensure that JHU perform thorough reviews of travel expenses charged to Federal awards.

### ***Awardee Response***

JHU agrees with this finding. See Appendix A for the complete JHU response.

### ***Auditor's Additional Comments***

JHU's comments are responsive to this finding. Once NSF determines that the recommendations have been adequately addressed and the \$13,373 in questioned costs have been resolved, this finding should be closed.

### Finding 3: Unallocable Fringe Benefit

While reviewing payroll transfer documentation, we found that the fringe benefit amount charged to an award was incorrect. Payroll charges, totaling \$23,943 (\$17,868 salary plus \$6,075 in fringe benefits), were charged to the award. However, upon reviewing the documentation provided, and recalculating the totals, we found that the salary and associated fringe benefits should have been \$17,868 (\$16,544 salary plus \$1,324 in fringe benefits).<sup>6</sup> Therefore, we question \$6,075 for the incorrectly calculated fringe benefit amount.

Per JHU, there were two errors. First, there was a manual entry error. The individual processing the transaction entered the incorrect general ledger code into the accounting system. The incorrect code triggered the full fringe benefit rate to be applied, instead of the appropriate lower rate. Second, while processing this transaction, “the fringe and salary were incorrectly combined under one salary general ledger code.” The salary should have been \$16,544, but the employee entered the total \$17,868 as salary. As a result of these errors, JHU will correct the entry to properly reflect the salary amount of \$16,544 plus fringe benefit amount of \$1,324. A credit to the award totaling \$6,075 will be processed.

JHU personnel did not adequately process or review the transfer, which resulted in questionable fringe benefit charges. Enhanced oversight procedures and controls should be adopted for payroll transfers. Having improved oversight processes ensures costs are reasonable and allowable, thus reducing the risk that funds may not be used as required to accomplish the necessary project objectives in accordance with Federal and NSF requirements. JHU concurred with \$6,075 of the questioned costs.

**Table 4. Summary of Unallocable Fringe Benefit**

Description	Award Number	Questioned Invoice	Questioned Fringe Benefit	Questioned Total	JHU Agreed to Reimburse
1 Fringe benefit error		\$ --	\$ 6,075	\$ 6,075	\$ 6,075
<b>Total</b>		<b>\$ --</b>	<b>\$ 6,075</b>	<b>\$ 6,075</b>	<b>\$ 6,075</b>

Source: Auditor analysis of questioned transactions

#### Recommendations

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

1. Direct JHU to provide support that it has credited or repaid the \$6,075 of questioned fringe benefits costs.
2. Direct JHU to strengthen the administrative and management procedures over payroll cost transfers. Processes could include requiring JHU to review all payroll transfers to evaluate whether the costs are appropriate and in accordance with all relevant Federal regulations before charging the expenses to a sponsored project.

<sup>6</sup> According to 2 CFR §215.21(b)(7), an awardee’s financial management system shall provide accounting records that are supported by source documentation.

**Awardee Response**

JHU agrees with this finding. See Appendix A for the complete JHU response.

**Auditor’s Additional Comments**

JHU’s comments are responsive to this finding. Once NSF determines that the recommendations have been adequately addressed and the \$6,075 in questioned costs have been resolved, this finding should be closed.

**Finding 4: Inadequately Supported Transactions**

JHU was unable to provide adequate documentation to support the allocability, allowability, and reasonableness of \$2,616 of expenses charged to two NSF awards during the audit period, as required by Federal regulations.<sup>7</sup>

Adequate documentation was not provided for the following items:

- \$2,466 for travel expenses to [REDACTED] meeting for which adequate documentation was not provided. JHU could only provide a credit card statement as support for airfare, lodging, and other travel expenses.
- \$150 for meal charges for which the actual receipt could not be provided.

JHU did not retain or provide adequate documentation for audit, which resulted in unallowable costs. Without a process to ensure that documentation is available and accessible in accordance with Federal requirements, there is increased risk that funds may not be used as required to accomplish the necessary project objectives. JHU concurred with \$2,616 of the questioned costs.

**Table 4. Summary of Inadequately Supported Transactions**

	Description	Award Number	Questioned Invoice	Questioned Fringe Benefit	Questioned Total	JHU Agreed to Reimburse
1	Travel expenses [REDACTED] meeting	[REDACTED]	\$ 2,466	\$ --	\$ 2,466	\$ 2,466
2	Meal Charges	[REDACTED]	150	--	150	150
<b>Total</b>			<b>\$ 2,616</b>	<b>\$ --</b>	<b>\$ 2,616</b>	<b>\$ 2,616</b>

Source: Auditor analysis of questioned transactions

<sup>7</sup> According to 2 CFR §200.403(a), a cost must be necessary, reasonable, and allocable to be allowable under a Federal award. Further, §200.403(g) describes that a cost must be adequately documented in order to be allowable on a Federal award, and according to 2 CFR §215.21(b)(7) an awardee’s financial management system shall provide accounting records that are supported by source documentation.

### ***Recommendations***

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

1. Direct JHU to provide support that it has credited or repaid the \$2,616 of questioned inadequately supported costs.
2. Direct JHU to strengthen the administrative and management controls, training, processes, and procedures related to document retention.

### ***Awardee Response***

JHU agrees with this finding. See Appendix A for the complete JHU response.

### ***Auditor's Additional Comments***

JHU's comments are responsive to this finding. Once NSF determines that the recommendations have been adequately addressed and the \$2,616 in questioned costs have been resolved, this finding should be closed.

A handwritten signature in blue ink that reads "Withum Smith + Brown, PC".

April 24, 2020

---

## Appendix A: Awardee Response

---



April 14, 2020

██████████  
Partner  
WithumSmith+Brown  
Two Logan Square Suite 2001  
18<sup>th</sup> and Arch Streets  
Philadelphia, Pennsylvania, 19103

Subject: Johns Hopkins University  
Audit of Incurred Cost for National Science Foundation Awards  
February 1, 2016 and ending January 31, 2019

Dear ██████████,

Johns Hopkins University (JHU) is committed to conducting its research activities with a high degree of integrity and accuracy, and in adherence to Federal and University policies and procedures. JHU appreciates the opportunity to provide comments, and will review its current policies and procedures in an effort to strengthen internal controls through enhancements and/or training as needed. JHU takes its stewardship of sponsored funding very seriously and feels confident it can ensure the proper compliance in accordance with NSF guidelines and award requirements.

### **Finding 1: Purchases Near or After Award Expiration**

**Question Cost - \$68,984**

*Recommendations:*

Direct JHU to strengthen the administrative and management procedures over expenditures near the end of an award. Processes could include requiring JHU to review all equipment and materials/supplies purchased during the final 90 days of an award's period of performance to evaluate whether the costs are allocable in accordance with all relevant Federal and sponsor-specific regulations before charging the expenses to a sponsored project.

*Awardee Response:*

JHU will review its current policies and procedures to identify areas where enhancements can be made to strengthen internal controls. JHU will reiterate its policies and procedures in reference to direct charging sponsored awards, to ensure costs are allowable, allocable and reasonable in

**Controller's Office**

3910 Keswick Rd, 5<sup>th</sup> Floor - North Bldg.; Baltimore, MD 21211



respect to the direct benefit received throughout the grant life cycle. Having said that, JHU would like to take this opportunity to respectfully express its opinion that it is not a given that items purchased near or at the end of the award cannot provide a direct benefit to the award. In many cases, these types of purchases can and do provide a necessary direct benefit in finalizing the research objectives.

JHU will return the questioned cost of \$68,984 promptly after the final resolution of the audit has been completed.

## **Finding 2: Unallocable or Unreasonable Travel**

**Questioned Cost - \$13,373**

### *Recommendations:*

Direct JHU to strengthen the administrative and management procedures over travel expenditures charged to NSF awards. Processes could include implementing controls to ensure that JHU perform thorough reviews of travel expenses charged to Federal awards.

### *Awardee Response:*

JHU will review its current policies and procedures to identify areas where enhancements can be made to strengthen internal controls. JHU will reiterate its policies and procedures in reference to direct charging sponsored awards, to ensure costs are allowable, allocable and reasonable in respect to the direct benefit received throughout the grant life cycle. JHU is currently in the process of implementing a new travel reimbursement system, Concur. The new system has enhanced features to help JHU manage its travel reimbursement process.

JHU will return the questioned cost of \$13,373 promptly after the final resolution of the audit has been completed.

## **Finding 3: Unallocable Fringe Benefit**

**Question Costs – \$6,075**

### *Recommendations:*

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

**Controller's Office**

3910 Keswick Rd, 5<sup>th</sup> Floor - North Bldg.; Baltimore, MD 21211



1. Direct JHU to provide support that it has credited or repaid the \$6,075 of questioned fringe benefits costs.
2. Direct JHU to strengthen the administrative and management procedures over payroll cost transfers. Processes could include requiring JHU to review all payroll transfers to evaluate whether the costs are appropriate and in accordance with all relevant Federal regulations before charging the expenses to a sponsored project.

*Awardee Response:*

JHU has a robust systematically-applied payroll cost transfer tool that relies on hard-coded edits to ensure data is accurate. This is also coupled with an electronic work flow approval process at the department and central levels to ensure transfers are reviewed for accuracy. The use of this tool accounts for approximately 99.9 % of payroll cost transfers processed for all non-hourly weekly employees at the university. Hourly weekly employees utilize an electronic time-keeping system that ensures accurate payment and tracking of hours worked.

The finding here is unique. Due to the employment status change coupled with time lapse of the transfer, a manual process was required. This process does incorporate internal reviews during the signature authorization workflow cycle. However, in the final step of data entry, a keying error occurred by combining the salary expense and fringe benefit expense into one salary amount. This typo, in turn, triggered fringe to be calculated on the entire combined amount rather than just the salary. JHU considers this an isolated occurrence. JHU will return the questioned cost of \$6,075 promptly after the final resolution of the audit has been completed.

The University will remind the payroll staff of the procedures involved when entering these types of manual transactions, and will reiterate to departments the importance of the account reconciliation process to identify keying errors.

## **Finding 4: Unsupported Transactions**

### **Question Costs - \$2,616**

*Recommendations:*

1. Direct JHU to provide support that it has credited or repaid the \$2,616 of questioned unsupported costs.
2. Direct JHU to strengthen the administrative and management controls, training, processes, and procedures related to document retention.

**Controller's Office**

3910 Keswick Rd, 5<sup>th</sup> Floor - North Bldg.; Baltimore, MD 21211



*Awardee Response:*

JHU has a detailed record retention policy and regrets in these isolated instances that full documentation was not retained. JHU will reiterate its record retention policy and procedures through a University-wide communication and training as needed to ensure all pertinent supporting documentation of sponsored charges are retained according to JHU's policy.

JHU appreciates the professionalism shown by WithumSmith+Bown and its audit management team throughout the audit process. JHU will continue to work efficiently and professionally as the audit is brought to closure.

Should you have any questions or need any further documentation, please don't hesitate to contact me.

Sincerely,



Scott W. Jonas  
Controller  
Johns Hopkins University

**Controller's Office**

3910 Keswick Rd, 5<sup>th</sup> Floor - North Bldg.; Baltimore, MD 21211

---

## Appendix B: Objective, Scope, Methodology, and Criteria

---

### Objective

To determine if costs claimed by JHU on NSF awards are allowable, allocable, reasonable, and in compliance with NSF award terms and conditions and Federal financial assistance requirements.

### Scope

Our audit included assessing the allowability, allocability, and reasonableness of costs claimed by JHU through the Award Cash Management Service for the 3-year period beginning February 1, 2016, through January 31, 2019. NSF OIG obtained from JHU all award transactions comprising all costs claimed to NSF during this period. This provided an audit universe of \$116,798,773, with more than 139,000 transactions, across 475 individual NSF awards. For transaction testing, we judgmentally selected 250 transactions, totaling more than \$1.8 million, and used a data analytics approach to identify potential risk areas.

The audit work was conducted at the auditors' offices and onsite at JHU in Baltimore, MD. Onsite fieldwork was conducted in October 2019. 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 JHU personnel to ensure that they were aware of each of our findings and did not have any additional documentation to support the questioned costs.

JHU 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 JHU's internal control solely to understand the policies and procedures relevant to the financial reporting and administration of NSF awards. We also evaluated JHU's compliance with laws, regulations, and award terms applicable to the items selected for testing, but not to express an opinion on the effectiveness of JHU's internal control over award financial reporting and administration. Accordingly, we do not express an opinion on the effectiveness of JHU's internal control over its award financial reporting and administration.

This performance audit was conducted 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 the conclusions based on the audit objective. The auditors believe that the evidence obtained provides a reasonable basis for the conclusions based on the audit objective.

### Methodology

At our request, JHU provided detailed transaction data for all costs charged to NSF awards for the period February 1, 2016, through January 31, 2019. We reviewed available accounting and administration policies and procedures, relevant documented management initiatives, previously

issued external audit reports and desk review reports, and schedules and reconciliations prepared by JHU and verified them against supporting accounting records.

We assessed the reliability of the data provided by JHU by 1) comparing costs charged to NSF award accounts within JHU's accounting records to reported net expenditures, as reflected in JHU's financial reports submitted to NSF for the corresponding periods; 2) performing general ledger to sub-ledger reconciliations of accounting data; and 3) reviewing and testing the parameters JHU used to extract transaction data from its accounting records and systems. Based on our testing, we found JHU's computer-processed data sufficiently reliable for the purposes of this audit.

After verifying that the transaction population was appropriate, we analyzed the data contained in the JHU general ledger and supporting detailed ledgers to identify anomalies, outliers, and aberrant transactions. Then we judgmentally selected a sample of transactions to test based on predefined criteria.

The transactions identified for testing were provided to JHU, with a request for the documentation to support each transaction. We reviewed the supporting documentation provided by JHU and evaluated the allowability, allocability, and reasonableness of each transaction. When necessary, we requested additional supporting documentation. We also obtained explanations and justifications from knowledgeable personnel until we had sufficient support to assess the allowability, allocability, and reasonableness of each transaction. Our work required us to rely on the computer-processed data obtained from JHU and NSF OIG.

We assessed NSF's computer-processed data and found it to be sufficiently reliable for the purposes of this audit. We did not review or test whether the data contained in, or controls over, NSF's databases were accurate or reliable; however, the independent auditor's report on NSF's financial statements for fiscal years 2016, 2017 and 2018 found no reportable instances in which NSF's financial management systems did not substantially comply with applicable requirements.

## Criteria

We assessed JHU's compliance with its internal policies and procedures, as well as the following:

- 2 CFR Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards*
- 2 CFR Part 220, *Cost Principles for Educational Institutions* (Office of Management and Budget Circular A-21)
- 2 CFR Part 215, *Uniform Administrative Requirements for Grants and Agreements with Institutions of Higher Education, Hospitals, and Other Non-Profit Organizations* (Office of Management and Budget Circular A-110)
- *NSF Proposal and Award Policies and Procedures Guide* (includes the *Grant Proposal Guide* and *Award and Administration Guide*)
- NSF Award Specific Terms and Conditions
- NSF Federal Demonstration Partnership Research Terms and Conditions

## Appendix C: Questioned Costs Summary by Award

Award Number	Direct Costs Questioned	Fringe Benefits Questioned	Indirect Costs Questioned	Total Questioned	Total Unsupported
Finding 1: Purchases Near Award Expiration					
	\$ 14,184	\$ --	\$ 1,698	\$ 15,882	\$ --
	7,426	--	4,605	12,031	--
	7,310	--	4,532	11,842	--
	6,221	--	--	6,221	--
	3,750	--	1,950	5,700	--
	2,972	--	1,843	4,815	--
	2,247	--	1,393	3,640	--
	1,514	--	939	2,453	--
	1,427	--	885	2,312	--
	1,425	--	883	2,308	--
	1,648	--	132	1,780	--
<b>Finding 1 Total</b>	<b>50,124</b>	<b>--</b>	<b>18,860</b>	<b>68,984</b>	<b>--</b>
Finding 2: Unallocable or Unreasonable Travel					
	2,737	--	--	2,737	--
	2,087	--	543	2,630	--
	2,520	--	--	2,520	--
	1,150	--	111	1,261	--
	606	--	377	983	--
	605	--	375	980	--
	600	--	371	971	--
	850	--	68	918	--
	155	--	96	251	--
	75	--	47	122	--
<b>Finding 2 Total</b>	<b>11,385</b>	<b>--</b>	<b>1,988</b>	<b>13,373</b>	<b>--</b>
Finding 3: Unallocable Fringe Benefit					
	--	6,075	--	6,075	--
<b>Finding 3 Total</b>	<b>--</b>	<b>6,075</b>	<b>--</b>	<b>6,075</b>	<b>--</b>
Finding 4: Inadequately Supported Transactions					
	2,466	--	--	2,466	--
	150	--	--	150	--
<b>Finding 4 Total</b>	<b>\$ 2,616</b>	<b>\$ --</b>	<b>\$ --</b>	<b>\$ 2,616</b>	<b>--</b>



## About NSF OIG

We promote effectiveness, efficiency, and economy in administering the Foundation's programs; detect and prevent fraud, waste, and abuse within NSF or by individuals who receive NSF funding; and identify and help to resolve cases of research misconduct. NSF OIG was established in 1989, in compliance with the *Inspector General Act of 1978*, as amended. Because the Inspector General reports directly to the National Science Board and Congress, the Office is organizationally independent from the Foundation.

### Obtaining Copies of Our Reports

To view this and any of our other reports, please visit our website at [www.nsf.gov/oig](http://www.nsf.gov/oig).

### Connect with Us

For further information or questions, please contact us at [OIGpublicaffairs@nsf.gov](mailto:OIGpublicaffairs@nsf.gov) or 703.292.7100. Follow us on Twitter at [@nsfoig](https://twitter.com/nsfoig). Visit our website at [www.nsf.gov/oig](http://www.nsf.gov/oig).

### Report Fraud, Waste, Abuse, or Whistleblower Reprisal

- File online report: <https://www.nsf.gov/oig/report-fraud/form.jsp>
- Anonymous Hotline: 1.800.428.2189
- Email: [oig@nsf.gov](mailto:oig@nsf.gov)
- Mail: 2415 Eisenhower Avenue, Alexandria, VA 22314 ATTN: OIG HOTLINE



NATIONAL SCIENCE FOUNDATION  
OFFICE OF INSPECTOR GENERAL