

Performance Audit of Incurred Costs – University of Delaware

REPORT PREPARED BY WITHUMSMITH+BROWN, P.C.

NATIONAL SCIENCE FOUNDATION
OFFICE OF INSPECTOR GENERAL

April 30, 2019
OIG 19-1-011





AT A GLANCE

Performance Audit of Incurred Costs – University of Delaware

Report No. OIG 19-1-011

April 30, 2019

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 the University of Delaware (UD) for the period December 1, 2013 to November 30, 2016. The auditors tested more than \$1.8 million of the \$82 million of costs claimed to NSF. The objective of the audit was to determine if costs claimed by UD 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 UD's compliance with certain Federal, NSF, and/or UD regulations and policies when allocating expenses to NSF awards. The auditors questioned \$426,667 of costs claimed by UD during the audit period. Specifically, the auditors found \$233,075 of inadequately supported charges, \$125,458 in equipment purchases that did not benefit the award, \$44,469 for unreasonable or unallowable travel and related charges, \$19,208 in unreasonable materials and supplies, \$2,465 in unallowable indirect costs, and \$1,992 in unallowable salaries and wages. 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 6 findings in the report with associated recommendations for NSF to resolve the questioned costs and to ensure UD strengthens administrative and management controls.

AUDITEE RESPONSE

UD expressed varying levels of agreement and disagreement with the findings throughout the report. UD's response is attached in its entirety to the report as Appendix A.

FOR FURTHER INFORMATION, CONTACT US AT OIGPUBLICAFFAIRS@NSF.GOV.



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

MEMORANDUM

DATE: April 30, 2019

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. 19-1-011, University of Delaware

This memo transmits the WithumSmith+Brown, P.C. (WSB) report for the audit of costs charged by the University of Delaware (UD) to its sponsored agreements with the National Science Foundation during the period December 1, 2013, to November 30, 2016. The audit encompassed more than \$1.8 million of the \$82 million claimed to NSF during the period. The objective of the audit was to determine if costs claimed by UD 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 Jeremy Hall at 703.292.7100 or OIGpublicaffairs@nsf.gov.

Attachment

cc:

Anneila Sargent
John Veysey
Ann Bushmiller
Christina Sarris
Fleming Crim

Fae Korsmo
Teresa Grancorvitz
Pamela Hawkins
Alex Wynnyk
Rochelle Ray

Carrie Davison
Allison Lerner
Lisa Vonder Haar
Ken Chason
Dan Buchtel

Ken Lish
Billy McCain
Jennifer Kendrick
Louise Nelson
Karen Scott
Jeremy Hall

University of Delaware

Performance Audit of Incurred Costs

National Science Foundation Office of Inspector General

April 26, 2019

OIG 19-1-011

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Abbreviations

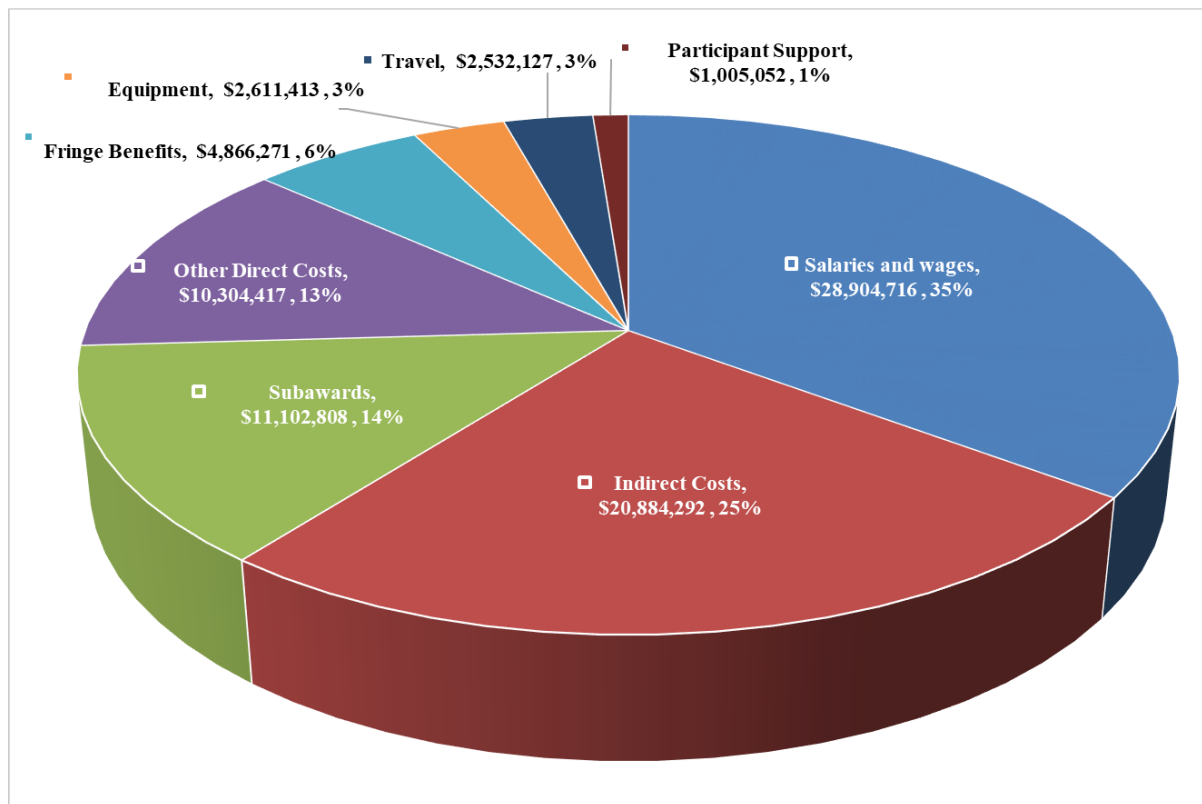
ACR	Automated Closeout Report
EPSCoR	Established Program to Stimulate Competitive Research
F&A	Facilities and Administration
GSA	General Services Administration
M&IE	Meals and Incidental Expenses
PI	Principal Investigator
UD	University of Delaware

Background

The National Science Foundation (“NSF”) 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....”¹ 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 grantees must follow Federal and NSF grant regulations and guidance in administering their NSF awards. The University of Delaware (“UD”), chartered by the State of Delaware in 1833, is an NSF grant recipient. According to UD, it is a land-grant, sea-grant, and space-grant university that is a major research university with extensive graduate programs that is also dedicated to outstanding undergraduate and professional education. Between December 1, 2013 and November 30, 2016, UD claimed more than \$82 million of costs across 403 NSF awards. An analysis of these costs claimed by budget category, based on the accounting data provided by UD, is portrayed in Figure 1.

Figure 1. Costs Claimed by NSF Budget Category, December 1, 2013, to November 30, 2016



Source: Auditor analysis of accounting data provided by UD

¹ Pub. L. No. 81-507

Results of Audit

WithumSmith+Brown, PC under contract with the NSF Office of Inspector General (OIG), audited the costs claimed by UD on NSF awards for the period beginning December 1, 2013, and ending November 30, 2016. UD did not always comply with all Federal, NSF, and UD regulations and policies when charging expenses to NSF awards. In our testing of 253 judgmentally selected transactions, we identified 48 transactions with a total of \$426,667 of questioned costs, including \$229,539 of unsupported costs (direct costs plus applicable indirect costs) charged to 29 NSF awards. Six areas where improved oversight is needed to ensure costs claimed are allowable in accordance with Federal and NSF award requirements include: 1) \$233,075 of inadequately supported charges; 2) \$125,458 in equipment purchases that did not benefit the award; 3) \$44,469 for unreasonable or unallowable travel and related charges; 4) \$19,208 in unreasonable materials and supplies; 5) \$2,465 in unallowable indirect costs; and 6) \$1,992 in unallowable salaries and wages. A schedule of questioned costs by finding, detailing amounts for direct and indirect costs, is included in Appendix C.

Finding 1: Inadequate Support for Award Charges

We identified 24 transactions, totaling \$233,075, that did not have adequate documentation to support the charges to the NSF awards as required by Federal regulations. These transactions included credit card purchases, gift card purchases, cost transfers, and other award charges that were not adequately supported.

Unsupported Credit Card Purchases

We identified four credit card purchases, charged to four awards, totaling \$43,714, that were unsupported² and, therefore, not in compliance with Federal regulations.

For the four questioned transactions, UD was unable to provide the original vendor invoice to support the transaction. According to officials in UD's Office of Research Administration, "When a Procurement buyer makes payment against a UD purchase order using their UD credit card, an invoice is not required." The documentation provided by UD for each of the transactions was a copy of the purchase order requisition, quote from the vendor, and payment activity report. According to Federal regulations², UD must provide adequate documentation to support costs charged to sponsored agreements. Without the vendor invoice, we are unable to verify the items purchased and their actual costs.

² 2 CFR Part 220, Appendix A, Section A.2.e. states that "The accounting practices of individual colleges and universities must support the accumulation of costs as required by the principles, and must provide for adequate documentation to support costs charged to sponsored agreements."

The transactions included in the \$43,714 are identified in Table 1 as follows:

Table 1. Description of Unsupported Credit Card Purchases

Description	Total Questioned*
Nortek USA Aquadopp Profiler	\$ 16,175
Aqualog Performance Research Spectrometer	13,483
Dell PE R515	8,056
Oxygen Meter and Related Accessories	6,000
Total	\$ 43,714

Source: Auditor analysis of questioned transactions

*Total questioned includes the applicable Facilities and Administration (F&A) costs.

UD did not follow its policies for maintaining receipts or invoices in support of credit card purchases. Without the vendor invoice, we are unable to determine what was purchased and the actual costs. Without a process in place to ensure that costs are adequately supported, there is increased risk that funds may not be used as required to accomplish the necessary project objectives in accordance with Federal Regulations.

Gift Card Usage Not Supported

We question eight transactions, totaling \$75,776 (including applicable indirect costs), for the purchase of 65 Visa gift cards, on various dates, in denominations of \$500, \$1,000, and \$1,500, for which adequate support on how the gift cards were spent was not provided.

According to UD, the gift cards were purchased by the I-Corps Site to facilitate the timely awarding of mini project awards for customer discovery activities for more than 20 projects per year. Project awards were made to teams led by faculty, staff, graduate students, and undergraduate students.

The NSF budget justification included \$65,000 per year to support entrepreneurial teams and the activities needed to pursue commercialization of their ideas, products, or processes. The justification does state that for each year of the grant, 30 plus I-Corps Site Teams will be funded between \$1,000 and \$3,000 for 1 to 3 months.

However, the only documentation provided by UD to support how the 65 gift cards were awarded and used was an internal document listing the names of the individuals on each project team, how many gift cards they were awarded, and in what denominations. The Visa gift cards were used as the funding mechanism for the mini projects; however, there still needs to be documentation to support what the gift cards were spent on to ensure they are in accordance with 2 CFR Part 220.³

³ 2 CFR Part 220, Appendix A, Section A.2.e. states that “The accounting practices of individual colleges and universities must support the accumulation of costs as required by the principles, and must provide for adequate documentation to support costs charged to sponsored agreements.”

The project teams should have been submitting documentation/receipts supporting how the gift cards were spent. As we cannot determine if the gift cards were spent in accordance with Federal regulations, the costs will be questioned.

UD personnel did not adequately document or review how gift cards charged to the NSF award were spent by the project teams, which resulted in questioned costs. Without a process in place to ensure that costs are adequately supported, there is increased risk that funds may not be used as required to accomplish the necessary project objectives in accordance with Federal regulations.

Unsupported Cost Transfers

We identified four cost transfers that were not adequately supported by source documentation, resulting in \$40,764 of questioned costs.⁴ For the following transactions, UD provided the journal voucher documents showing the cost transfer, but did not provide the actual invoices and receipts supporting the purchases. In some cases, a purchase order or vendor quote was provided, but not the actual invoice.

Table 2. Description of Unsupported Cost Transfers Questioned

NSF Award	Account Description	Direct Cost Questioned	F&A Questioned	Total Questioned
	Computer Hardware & Supplies	\$ 5,719	\$ 3,031	\$ 8,750
	Parts – Equipment Fabrication	4,022	--	4,022
	Parts – Equipment Fabrication	4,022	--	4,022
	Computer Hardware & Supplies	17,000	6,970	23,970
Total		\$ 30,763	\$ 10,001	\$ 40,764

Source: Auditor analysis of questioned transactions

Because UD did not follow its policies regarding maintenance of source documentation to support cost transfers, UD cannot properly support these four transactions.

Lack of Adequate Documentation to Support Other Award Charges

We identified eight transactions, totaling \$72,821 that were charged to seven awards, where the documentation was not adequate to support the charges to the award. The eight transactions include:

⁴ 2 CFR Part 220, Appendix A, Section A.2.e. states that “The accounting practices of individual colleges and universities must support the accumulation of costs as required by the principles, and must provide for adequate documentation to support costs charged to sponsored agreements.”

Table 3. Description of Other Unsupported Charges Questioned

Item	Description	NSF Award	Direct Cost Questioned	F&A Questioned	Total Questioned
1	Summer fellowship		\$ 2,500	\$ --	\$ 2,500
2	Grow lights		2,281	1,255	3,536
3	Partial transfer of expenses		14,852	--	14,852
4	Partial transfer of expenses related to research equipment		7,954	4,216	12,170
5	Sequencing services		7,950	4,452	12,402
6	Internal service center charges		9,027	1,003	10,030
7	Internal service center charges		8,250	--	8,250
8	Equipment repair		5,935	3,146	9,081
Total			\$ 58,749	\$ 14,072	\$ 72,821

Source: Auditor analysis of questioned transactions

Federal regulations require that charges to awards be supported by adequate documentation.⁵ However, as described below, UD did not provide adequate documentation to support these charges. Therefore, we are unable to determine if these costs were allowable, allocable, and properly charged to these awards.

Item 1

We question \$2,500 (direct costs) charged to an award for 2015 summer fellowship payment for one individual. UD provided a payment activity report, but did not provide any evidence or documentation that this payment was related to the award, that the individual worked on the award, or any documentation regarding his involvement in a summer fellowship program.

Item 2

We question \$3,536 (\$2,281 direct costs plus \$1,255 indirect costs) for a transaction for the purchase of grow lights, which adequate documentation was not provided. In support of this cost, UD provided documentation related to the purchase of grow lights, a portion of which appears to be allocated to an NSF award. UD did not provide any support for the allocation of one-third of the costs of this purchase to this award.

Item 3

We question \$14,852 (direct costs) for a transfer of a partial expense, which appears to have been done for budgetary purposes; adequate documentation was not provided. This NSF Established Program to Stimulate Competitive Research (EPSCoR) award expired on November 30, 2013, but the transfer from the unrestricted internal funding source was not posted until January 17, 2014.

⁵ 2 CFR Part 220, Appendix A, Section A.2.e. states that "The accounting practices of individual colleges and universities must support the accumulation of costs as required by the principles, and must provide for adequate documentation to support costs charged to sponsored agreements."

UD stated that as part of its EPSCoR funding, UD budgeted \$150,000 for faculty startup, which the faculty member elected to use on equipment. The initial charge was posted to a non-sponsored fund and this transfer represents the final portion of the \$150,000 that EPSCoR committed. To support this transaction, UD provided an order confirmation totaling \$597,278, dated December 27, 2011, more than 2 years prior to the transfer on January 17, 2014. Additionally, we could not tie the order confirmation to the amounts on the internal allocation spreadsheet provided by UD.

Item 4

We question \$12,170 (\$7,954 direct costs plus \$4,216 indirect costs) for a purchase from a vendor for which adequate documentation was not provided. UD did not provide a vendor invoice for this transaction. UD Payment Activity Documents show several payments to this vendor, totaling over \$600,000. One of these payment documents says "[REDACTED] Spectrometer," but UD did not provide an invoice or support for the \$12,170 charged to this award. UD stated they initially transferred \$25,000 off this award to a cost share account because they believed this award was in overdraft. However, a final reconciliation showed there were still funds available so a portion of this \$25,000 was transferred back to this award.

Item 5

We question \$12,402 (\$7,950 direct costs plus \$4,452 indirect costs) for the allocation of charges from a vendor for which adequate documentation was not provided. UD provided a journal voucher for the sequencing services provided to the Principal Investigator's (PI) lab for December 2015, but did not provide the original source documentation or invoice for this transaction relating to the services provided by the vendor.

Item 6

We question \$10,030 (\$9,027 direct costs plus \$1,003 indirect costs) for internal service center charges for which adequate documentation was not provided. UD provided the journal voucher, but did not provide supporting documentation for this transaction.

Item 7

We question \$8,250 (direct costs) for internal service center charges for which adequate documentation was not provided. UD provided the journal voucher, but did not provide supporting documentation for this transaction.

Item 8

We question \$9,081 (\$5,935 direct costs plus \$3,146 indirect costs) for microscope repairs for which adequate documentation was not provided. UD did not provide the actual invoice to support this transaction. UD provided a service quote, dated January 16, 2014, that shows the estimated cost of the repair as \$6,800 and a payment form that shows an invoice date of April 1, 2014, and a payment amount of \$5,935.

Additionally, we do not know the date that the repaired microscope was received by UD. The service quote states the repair would take 6 to 8 weeks. According to the payment activity form, the invoice was dated April 1, 2014. The award expired August 31, 2014. It does not appear the total cost of the microscope repair should have been charged to this NSF award with only 5 months remaining before award expiration (at most depending on when the repaired microscope was

received). At the time of purchase, the award was on its second no-cost extension for which the plan for use was “the funds will be used to support a graduate student to complete the work.” The extension request made no mention of the need for the repaired microscope to complete the work.

Recommendations

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

1. Resolve the \$233,075 in questioned costs, including \$229,539 in unsupported costs, and direct UD to repay or otherwise remove the sustained questioned costs from its NSF awards.
2. Direct UD to:
 - a. strengthen administrative and management controls over credit card purchases to ensure appropriate receipts and invoices are maintained to support the charges;
 - b. strengthen its administrative and management controls over the distribution of gift cards to fund projects and the tracking of how the gift cards are spent;
 - c. strengthen the administrative and management controls over the maintenance of original source documentation to support all cost transfers; and
 - d. implement policies and procedures that describe the source documentation that should be maintained to properly support charges to Federal awards.

Summary of Awardee Response

UD stated it has strong controls in place to ensure that expenses charged to federally sponsored awards are allowable, allocable, reasonable, and necessary. UD also stated the documentation it provided to the auditors substantiates the expense amounts and justification for the items purchased. Furthermore, UD stated it plans to implement Concur (third party tracking software for monitoring travel and expense reimbursement) for travel and expenses, which will improve documentation consistency. UD addressed each of the four specific recommendations, as follows:

- a. UD disagreed with our finding regarding credit card purchases and our \$43,714 of questioned costs. UD stated that supporting documentation included a combination of merchant produced and internal records to document review, approval, price verification, etc.
- b. UD agreed with our recommendations regarding the \$75,776 of questioned costs relating to gift card purchases. UD stated these costs have been removed from the NSF awards, and that it will implement an alternative approach to provide timely funds to mini-project awards via a mechanism that will document how funds were spent.
- c. UD disagreed with our finding regarding cost transfers and our \$40,754 of questioned costs. UD stated these charges were supported by vendor documentation, and the internal adjustment support notes amounts, justification, dates processed, and internal reviews and approvals.

- d. UD disagreed with our finding regarding documentation of other award charges totaling \$72,821. For each of the eight items questioned, UD provided detailed descriptions of the documentation provided to support these charges. Also, UD provided additional detailed narrative relating to four of the eight items explaining why UD believes the charges should be allowable.

See Appendix A for the complete UD response.

Auditors' Additional Comments

UD's comments relating to the \$75,776 of questioned gift card purchases (Item b.) are responsive to the issue and NSF should verify the funds have been reimbursed or credited.

UD's comments and explanations relating to the \$43,714 for questioned credit card purchases (Item a.), \$40,764 of questioned cost transfers (Item c.) and \$72,821 of questioned other award charges (Item d.), does not change our position; these costs were not adequately documented or supported. As a result, our recommendations remain unchanged.

Finding 2: Equipment Purchases at End of Award or with No Benefit to Award

We found UD made purchases near the end of award periods that did not appear reasonable or necessary to the awards charged. Specifically, we identified five transactions, charged to three NSF awards, totaling \$125,458, as described in Table 4.

Table 4. Description of Equipment Purchases Questioned

Item	Description	NSF Award	Direct Cost Questioned	F&A Questioned	Total Questioned
1	████████ Spectrometer - installment payment (24% of purchase price allocated to NSF award)	████████	\$ 86,513	\$ --	\$ 86,513
2	████████ Spectrometer - final payment (24% of purchase price allocated to NSF award)	████████	12,768	--	12,768
3	Repairs to ██████████ Vehicle	████████	7,939	4,208	12,147
4	Repairs to ██████████ Vehicle	████████	5,198	2,755	7,953
5	Lithium ion batteries and heat shrink tubing	████████	4,748	1,329	6,077
Total			\$ 117,166	\$ 8,292	\$ 125,458

Source: Auditor analysis of questioned transactions

We questioned these items primarily because they were purchased or received either shortly before or after the award expired, as shown in Table 5:

Table 5. Dates of Equipment Purchases Questioned

Item	Received/Purchase Date	Award Expiration Date	Days remaining in (after) award
1	December 4, 2014	November 30, 2013	(369)
2	December 4, 2014	November 30, 2013	(369)
3	January 15, 2016	August 31, 2015	(137)
4	January 15, 2016	August 31, 2015	(137)
5	November 25, 2015	November 30, 2015	5

Source: Auditor analysis of questioned transactions

Described below are specific details regarding these items and additional reasons for questioning these costs.

Items 1 and 2

We question \$86,513 and \$12,768 (direct costs) charged for the purchase of an [REDACTED] spectrometer ordered on May 24, 2013, on a 5-year award that expired on November 30, 2013. Based on the final invoice dated December 4, 2014, with payment terms of “due upon acceptance”, we believe the equipment was received 1 year after the NSF award expiration. UD stated that the equipment was received in November 2013 and that vendor billing was delayed until late 2014; however, no documentation was provided to support when the equipment was received. Therefore, these costs do not appear to be allocable to this award in accordance with Federal regulations.⁶

Additionally, according to the documentation provided by UD, the total cost of the [REDACTED] was \$618,090. UD stated that \$150,000 of the total purchase was allocated to the NSF award and the remaining balance was allocated to an internal departmental research fund. Approximately 24 percent of the purchase price of the equipment was allocated to the NSF award, but UD did not provide an explanation or any documentation to support the allocation to this award, which did not have any equipment in the approved budget. The budget justification stated, “Equipment funds to support the [REDACTED] and [REDACTED] in the amount of \$1,055,000 will be provided via State of Delaware matching funds.”

Lastly, there was a 2-month NSF-approved No-Cost Extension submitted on May 14, 2013, that revised the award end date to November 30, 2013. The amount remaining on the award at the time of submission was \$398,642. The plan for use stated, “The extension through November 2013 will allow us to support graduate student research contracts, post-doc salary, research supplies and materials to complete the original research scope outlined and approved for our project. In addition, we will use funds to support a final AAAS evaluation of our EPSCoR programs.” The no-cost extension did not mention the purchase of equipment; however, 37 percent of the funds remaining when the no-cost extension was submitted were spent on equipment. Additionally, as acquiring research equipment infrastructure did not appear to be an objective of this award, we question why the NSF award funds were used for this purchase rather than the State of Delaware funds as originally intended.

Items 3 and 4

We question \$12,147 (\$7,939 direct costs plus \$4,208 indirect costs) and \$7,953 (\$5,198 direct costs plus \$2,755 indirect costs) in connection with the repairs of a [REDACTED] vehicle that were prepaid during the award but did not take place until 4 months following the expiration of the award. Although UD attempted to utilize this vehicle on the project, the vehicle was unable to be used in 2012 research due to problems with the vehicle that the manufacturer had difficulty correcting. It was deployed in 2013 but abruptly stopped working because [REDACTED] - limited data was collected. Therefore, it appears the vehicle did not provide substantial benefit to the project, and the vehicle was not used on the project after the repairs were performed.

⁶ According to 2 CFR Part 220, Appendix A, C.4, “[a] cost is allocable to a particular cost objective...if the goods or services involved are chargeable or assignable to such cost objective in accordance with relative benefits received or other equitable relationship.”

The charging of costs to this award was not in accordance with Federal regulations requiring costs to be chargeable in accordance with the benefits received.⁷

According to UD, “Repairs occurred on January 11-15, 2016.” However, payment for these purchases was made in advance on October 12, 2015 and the award expired August 31, 2015.

Item 5

We question \$6,077 (\$4,748 direct costs plus \$1,329 indirect costs) for the purchase of 350 lithium ion batteries and heat shrink tubing ordered on November 25, 2015, on an NSF award that expired on November 30, 2015.

According to UD, “These charges are for specialized batteries and connectors for the [REDACTED] used on the project. The equipment was necessary in order to operate this research equipment during [REDACTED]. Due to [REDACTED], the batteries are typically one-time use and would be used exclusively for this award.” However, according to an article attached to the Final Project Report, the [REDACTED] was held November 17-23, 2015. The supplies were ordered on November 25, 2015, after [REDACTED] was completed and likely not received until after the NSF award expiration. Therefore, the charging of these costs to this award was not in accordance with Federal regulations requiring costs to be chargeable in accordance with the benefits received.⁸

Recommendations

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

1. Resolve the \$125,458 in questioned costs, and direct UD to repay or otherwise remove the sustained questioned costs from its NSF awards.
2. Direct UD to strengthen its administrative and management controls and processes over equipment and related purchases near the end of awards.

Summary of Awardee Response

UD disagreed with our conclusion questioning two transactions totaling \$99,281 related to equipment (Items 1 and 2). UD stated that the purpose of this EPSCoR award was to provide \$20 million of funding over 5 years to support improvements to physical and cyber infrastructure and human capital development in research areas. The program goals were to broaden the impact of NSF-funded research to create new pathways and foster collaboration across government, academia and private industry. UD stated that the traditional concepts of allocability do not apply and the timeline for the purchase does not preclude the allocability to the NSF-funded EPSCoR project. UD further stated the original equipment expense was more than \$150,000 and the cost

⁷ According to 2 CFR Part 220, Appendix A, C.4, “[a] cost is allocable to a particular cost objective...if the goods or services involved are chargeable or assignable to such cost objective in accordance with relative benefits received or other equitable relationship.”

⁸ According to 2 CFR Part 220, Appendix A, C.4, “[a] cost is allocable to a particular cost objective...if the goods or services involved are chargeable or assignable to such cost objective in accordance with relative benefits received or other equitable relationship.”

was shared between the EPSCoR award and other non-sponsored funds. UD also stated the equipment was received prior to the award end date.

UD agreed with our recommendations for three transactions totaling \$26,177 in questioned costs regarding equipment and related purchases near the end of awards. UD stated that these costs will be removed from the NSF awards. Furthermore, UD stated its Automated Closeout Report (ACR), which is an electronic webform designed to flag after end-date charges for a more detailed review, helps to ensure all transactions are within the period of performance. UD plans to provide additional training and resource materials to further promote the use of the ACR.

See Appendix A for the complete UD response.

Auditors' Additional Comments

Our conclusions remain unchanged regarding the \$99,281 in questioned costs relating to the two transactions for the equipment purchase. The additional information and explanation provided by UD does not change our view that these transactions should not have been charged to this NSF award. Although UD stated this equipment was received prior to the award end date, UD has not provided us documentation that supports this. Additionally, UD did not provide any evidence to support its claim that traditional concepts of allocability do not apply to this award.

UD's comments relating to the \$26,177 in questioned costs are responsive to this finding. NSF should determine that the proposed corrective actions have been adequately implemented and should ensure that NSF has been repaid or the awards credited.

Finding 3: Unallowable or Unreasonable Travel Charges

We identified unsupported travel costs, travel charges to awards for travel after the award expiration date, and other unreasonable travel or travel that did not benefit the award, totaling \$44,469, for 12 travel transactions.

Unsupported Travel Costs

We questioned \$3,309 for travel costs, charged to one NSF award, that was not adequately supported⁹ and, therefore, not in compliance with Federal regulations.

Inadequate Documentation and Unallocable PI travel

We questioned \$3,309 (\$2,121 direct costs plus \$1,188 indirect costs) charged to one NSF award for airfare to [REDACTED] and [REDACTED] for the PI to attend two conferences. UD did not provide support for conference registrations, attendance, or the papers being presented at each conference as requested. Additionally, the cost of the airfare was charged 100 percent to the NSF award even though the airline ticket included stopovers in [REDACTED] and [REDACTED] to present papers supported by two different grants. All other travel expenses associated with the PI's time in [REDACTED] were charged to another NSF award; however, the airfare was not allocated between the two awards. The airfare was not 100 percent allocable to this NSF award.¹⁰

Travel after End of Award

We identified three transactions, charged to two NSF awards, totaling \$11,499, where the travel occurred after the NSF award expiration and was therefore not allocable to the NSF award.

Travel Expenses to Attend Conferences that Occurred After the NSF Award Expiration

We questioned \$6,618 relating to two travel expenses (consisting of multiple travel line items) charged to one NSF award, for travel expenses for students to attend conferences that occurred after the NSF award expiration on August 31, 2015. The travel expenses are described in Table 6 below.

⁹ 2 CFR Part 220, Appendix A, Section A.2.e. states that "The accounting practices of individual colleges and universities must support the accumulation of costs as required by the principles, and must provide for adequate documentation to support costs charged to sponsored agreements."

¹⁰ According to 2 CFR Part 220, Appendix A, C.4, "[a] cost is allocable to a particular cost objective...if the goods or services involved are chargeable or assignable to such cost objective in accordance with relative benefits received or other equitable relationship."

Table 6. Description of Travel Expenses that Occurred After the NSF Award Expiration

Description	Date of event	Days after NSF Award Expiration	Total Questioned*
Conference registration for two students	to , 2015	7 days	\$ 1,853
Lodging for student at conference	to , 2015	7 days	268
Lodging for two students at conference	to , 2015	27 days	656
Airfare to for student to attend conference	Airfare from to , 2015	6 days	3,316
Conference registration for graduate student	to , 2015	27 days	525
Total			\$ 6,618

Source: Auditor analysis of questioned transactions

* Total questioned includes the applicable F&A costs.

We also questioned \$1,500 charged to this NSF award for airfare to in June 2015, described as being related to a conference in May 2015, which UD acknowledged “was post conference, and did not relate to this award.”

Additionally, we questioned \$3,381 (\$2,210 direct costs plus \$1,171 indirect costs), charged to another NSF award, for conference registration fees for the PI and a graduate student to attend a conference that occurred 3 months after the NSF award expiration. The conference registration fee was paid April 2015, for a conference that occurred July , 2015, on an NSF award that expired on April 30, 2015.

The UD departments related to these travel expenses did not have a formal travel expense report or authorization requirement in place at the time of this travel. Therefore, there was not an adequate review process to identify that these trips were scheduled after the end of the award period. UD’s travel policy delegates to a Dean or Vice-President (or designee) to determine prior travel approval requirements and documentation compilation methods for their respective units provided they adhere to UD’s travel policy requirements.

Without a process to ensure costs are in accordance with the terms and conditions of the grant award and in compliance with Federal regulations, there is increased risk that funds may not be used as required to accomplish the necessary project objectives in accordance with Federal and NSF requirements.

Unreasonable Travel or Travel that Did Not Benefit Award

We questioned eight transactions, totaling \$29,661, charged to four NSF awards, for travel that was not reasonable and did not benefit the NSF awards.

International Travel Expenses for the PI

We question \$7,166 charged to one NSF award for the PI's foreign travel expenses. The PI traveled from [REDACTED] to [REDACTED], 2014. According to the PI, the primary destination for the trip was the [REDACTED] in [REDACTED], to work with collaborators and to use their [REDACTED] apparatus. The PI also attended three conferences in [REDACTED], [REDACTED], and [REDACTED] to give invited talks. We reviewed the final project report for this award and found it did not mention the PI's travel, the collaborations, or the invited talks at the conferences.

Based on the following, we conclude that the travel was not necessary, reasonable, or prudent for the administration of the award:¹¹

- No support for the collaborations and use of the apparatus at the Lab in [REDACTED], was provided.
- No support for the invited talks in [REDACTED], [REDACTED], and [REDACTED] were provided. We do not know when the invited talks occurred or where they occurred.
- There was no clear benefit or necessity for the collaborations in [REDACTED], or the invited talks in [REDACTED], [REDACTED], and [REDACTED].
- The travel was at the end of the NSF award life. The travel ended [REDACTED], 2014, and the award expired on [REDACTED], 2014.
- The PI was traveling for [REDACTED] days, and no itinerary for the travel was provided.
- There was no foreign travel in the revised NSF award budget.

Unreasonable Per Diem Charges for PI

We question \$4,162 for 20 days per diem charged for the PI while in [REDACTED], from [REDACTED], 2013. In response to our audit inquiries, UD stated "The PI has a longstanding collaboration with the physicists at University [REDACTED] for carrying out the work proposed in this [REDACTED] grant. While in [REDACTED] there was substantial progress made on this proposed work. In particular, this visit led directly to finishing two major publications with these [REDACTED] collaborators."

Based on the following, we conclude that the travel was not necessary, reasonable, or prudent for the administration of the award:

- No support for the collaborations with the physicists at the University [REDACTED] was provided. The annual project report submitted to NSF covering this time period states there was no international collaboration, although it does mention international travel.
- The NSF award budget did not include foreign travel for the PI.

¹¹ According to 2 CFR Part 220, Appendix A, Section 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..."

- The proposal did not mention collaborations at the University [REDACTED]. The annual project report submitted to NSF did not mention or describe this collaboration.
- No daily itinerary for the time spent in [REDACTED] and the per diem days charged to award was provided.

UD personnel did not adequately review the expenditures charged to the NSF awards, which resulted in unreasonable travel costs. Without a process to ensure costs are reasonable and allowable, there is increased risk that funds may not be used as required to accomplish the necessary project objectives in accordance with Federal and NSF requirements.

Unreasonable Travel to [REDACTED] for PI and Co-PI

We question \$17,770 (\$14,058 direct costs plus \$3,712 indirect costs) in connection with five travel transactions charged to one award. These five transactions are related to travel in 2013 and 2015 to [REDACTED], by the PI and Co-PI [REDACTED]. We question these transactions for the following reasons:

- Travel expense reimbursement reports that detailed the daily itinerary matching to the dates of travel were not provided. UD stated that the travel expense reimbursement reports they provided had the approvals required by UD policy¹². However, the approvals on the PI and Co-PI's travel expense reimbursement reports were done by the Co-PI, who [REDACTED] and was also on the trip. It was not clear which days were business days and which days were personal days. For the 2013 trip, per diem was claimed for 31 days between [REDACTED] and [REDACTED] 2013, but it is not clear for which specific days the per diem is being claimed, and what business was being conducted on those days. Additionally, the airfare shows the trip was longer, departing on [REDACTED], 2013, and returning on [REDACTED], 2013.
- The proposal budget included no foreign travel to [REDACTED], for the PI and Co-PI, stating that they were not requesting funds for travel to [REDACTED] for the PIs or for their consultants, because there is reason to hope that these trips will be covered in other ways. However, these unbudgeted trips were charged to this Federal award.
- According to the project proposal, "All lodging and M&IE [meals and incidental expenses] are estimated at one half the allowed Federal per diem rate or less for travel to [REDACTED], [REDACTED] and US." The U.S. Department of State per diem rates in [REDACTED], in [REDACTED] 2013 were \$94 for M&IE, but the PI and Co-PI charged \$98 per day for M&IE per person to this Federal award. According to the proposal, at most \$47 per day for M&IE per person should have been charged. However, because of the lack of detailed itinerary and approved travel expense report identified previously, we are questioning the entire amount.
- The proposal indicated that the PI hoped to spend 3 weeks in [REDACTED] each year; however, the trips were longer (2013: 1 month; 2014: 2 months; 2015: 2 months).
- Documentation provided for the housing rental showed discrepancies in dates. One document, dated [REDACTED] 2013, was a confirmation of payment for lodging for [REDACTED] and

¹² Travel and Business Hosting Policy, October 1988 (as revised), IV.B.1.b. states "Travel expenditures, for which an employee is seeking reimbursement or utilizing a UD Credit Card for payment, must pertain to the business needs of the University and receive the approval of the employee's immediate supervisor or their designee."

████ 2010. When questioned, UD provided a confirmation of payment dated █████, 2018, for a stay in the █████ guest house from █████ 2014, to █████, 2014.

The five travel transactions are detailed as follows:

Table 7. Description of Questioned Travel Expenses for PI and Co-PI Travel to █████

Item	Description	Period Covered	Date Posted	Direct Cost Questioned
1	Rent for housing in █████, █████, 2014	████ to █████, 2014	September 5, 2014	\$ 1,986
2	Per Diem in █████ (31 days) for Co-PI	████ 2013, to █████ 2013	December 18, 2013	3,038
3	Per Diem in █████, █████ (31 days) for PI	████ 2013, to █████, 2013	December 18, 2013	3,038
4	Per Diem in █████ and █████ (54.5 days) for Co-PI	████ 2015, to █████ 2015	November 23, 2015	2,998
5	Per Diem in █████ and █████ (54.5 days) for PI	████ 2015, to █████, 2015	November 23, 2015	2,998
Total				\$ 14,058

Source: Auditor analysis of questioned transactions

Unreasonable PI Travel to █████

We questioned \$563 (\$361 direct costs plus \$202 indirect costs) charged to one NSF award for per diem, car rental, and parking that were not allocable to the award. The PI traveled to █████, █████, from █████ to █████ 2016, to attend a conference. The conference occurred from █████ to █████ 2016. We are questioning the charging of per diem, car rental, and parking to the NSF award from █████, 2016; the additional 3 days spent in █████ did not benefit the NSF award.

Recommendations:

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

1. Resolve the \$44,469 in questioned costs and direct UD to repay or otherwise remove the sustained questioned costs from its NSF awards.
2. Direct UD to develop and implement travel policies and procedures that:
 - a. are consistent across all departments;
 - b. require prior authorization and approvals;
 - c. prohibit approvals or authorizations from being performed by spouses or family members, or others with actual or perceived conflicts of interest;

- d. require a detailed travel expense report identifying the business activities conducted for each day expenses are claimed, and identifying any personal or non-work-related days included in the travel;
- e. ensure adequate review of claimed travel expenses charged to Federal awards to ensure travel is in accordance with UD policies, Federal regulations, and within the period of performance of the award;
- f. ensure there is a clear benefit to the Federal award being charged; and
- g. ensure that adequate documentation is provided to support attendance at conferences, speaking engagements, and other business-related activities.

Summary of Awardee Response

UD agreed with our conclusions questioning three transactions totaling \$11,499 for travel after the end of the NSF award expiration date. UD also agreed with our conclusion questioning the personal portion of PI travel to [REDACTED] totaling \$563 and stated these costs have been removed from the award.

UD agreed with a portion of the \$248 of unallowable per diem costs for the PI and Co-PI travel to [REDACTED].

UD disagreed with our conclusions questioning \$32,159 for the remaining eight travel transactions. UD believes it had adequately responded to and provided supporting documentation for these eight transactions. UD provided detailed explanations of why it believed these costs are allowable and properly supported.

UD also stated it has embarked on the following initiatives to strengthen controls around travel costs on all federally sponsored awards including NSF awards:

- Launching Concur, a new travel and expense management program.
- Monitoring charges close to the end of the period of performance using the ACR.
- Providing guidance to faculty and staff about allocation procedures and documentation.
- Conducting additional training on cost principles.
- Clarifying roles of purchaser, preparer, and approver for making payments.
- Reviewing and updating supporting documentation and retention standards.

See Appendix A for the complete UD response.

Auditors' Additional Comments

UD's responses to the \$11,499 of questioned costs for travel after the end of the award, the \$563 of questioned costs for a portion of PI travel to [REDACTED], and the \$248 of questioned per diem costs are responsive to the issue and NSF should verify the funds have been reimbursed or credited.

UD's proposed corrective actions are partially responsive to some of the recommendations in this finding, and NSF should determine whether these corrective actions have been adequately implemented.

Our conclusions remain unchanged regarding the \$32,159 of questioned costs for the remaining eight travel transactions. The additional information and explanations provided by UD does not change our view that these costs do not appear reasonable and necessary for the administration of the NSF awards. In these cases, we believe UD is over-relying on explanations provided by the travelers rather than obtaining detailed, contemporaneous travel expense reports and documentation that would allow for sufficient scrutiny of the travel expenses claimed and charged to NSF awards.

Finding 4: Unreasonable Materials and Supplies

We questioned \$19,208 on three multi-year awards for various materials and supplies purchased and received near the award expiration. These purchases were not allocable considering the limited time remaining on the awards. The timing of the purchases, and the lack of information about the subsequent receipt of the items, leads us to conclude that the purchases were not allocable to the awards.¹³

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

We identified 10 purchases of materials and supplies, totaling \$8,357 (\$5,463 direct costs plus \$2,894 indirect costs), near the end of one NSF award that did not appear to benefit the NSF award. According to UD, during the last months of this project, personnel were working to carry out and validate experiments so that data could be analyzed after the project had officially ended. However, when asked for documentation tracking the lab usage, we were informed that no such documentation was maintained. Additionally, no documentation was maintained to support when the supplies were received and put into use. These supplies, although we cannot determine when received, were purchased with less than 76 days out of 1,460 (or 5 percent) remaining in the award period. Therefore, we question \$8,357 in lab supplies purchased at the end of the award. See Table 8 for purchase information.

Table 8. Award 1 Questioned Transactions Near the Award Expiration

Description	Invoice Amount	F&A	Total Charged	% Charged to NSF	Days Remaining in Award
Magnetic Kit	\$ 1,732	\$ 918	\$ 2,650	44%	61
Reagent	1,055	559	1,614	44%	67
Chemicals	1,054	558	1,612	44%	68
Chemicals	725	384	1,109	100%	64
DNA Sequencing	253	134	387	44%	73
Rotisserie Tube Clip	163	86	249	44%	62
RNA Sequencing	135	71	206	44%	62
Chemicals	134	71	205	44%	61
Nursery Supplies	193	103	296	44%	76
DNA Sequencing	19	10	29	44%	61
Total Award 1	\$ 5,463	\$ 2,894	\$ 8,357		

Source: Auditor analysis of questioned transactions

We identified the following eight purchases, totaling \$4,641 (\$3,033 direct costs plus \$1,608 indirect costs), of materials and supplies near the end of the award that did not appear to benefit the NSF award charged. According to officials in UD's Office of Research Administration, these

¹³ According to 2 CFR Part 220, Appendix A, Section C.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 the cost objective in accordance with relative benefits received.

lab supplies were needed to grow experiments during the final stage of the award. However, when asked for documentation tracking the lab usage, we were informed that no such documentation was maintained. Additionally, no documentation was maintained to support when the supplies were received and put into use. These supplies were purchased less than 76 days out of 1,825 (or 4 percent) of the award period. Therefore, we question \$4,641 in lab supplies purchased at the end of the award. See Table 9 for purchase information.

Table 9. Award 2 Questioned Transactions Near the Award Expiration

Description	Invoice Amount	F&A	Total Charged	% Charged to NSF	Days Remaining in Award
Reagent, Membrane Kits	\$ 875	\$ 464	\$ 1,339	100%	41
Phy Tip Columns	658	349	1,007	100%	58
Hypercarb Columns	597	317	914	100%	48
Vent Caps, Gloves	535	284	819	100%	44
Iodomethane	124	65	189	100%	71
Caps and Vials	118	63	181	100%	76
Regent	82	43	125	100%	49
Pipettes, Cups, Tops	44	23	67	100%	70
Total Award 2	\$ 3,033	\$ 1,608	\$ 4,641		

Source: Auditor analysis of questioned transactions

We identified the following seven purchases, totaling \$6,210 (\$4,059 direct costs plus \$2,151 indirect costs), of materials and supplies near the end of the award that did not appear to benefit the NSF award charged.

According to UD, these lab supplies were utilized in large part by the 10 undergraduate students working on this award during the summer of 2014. UD explained that the students used a substantial amount of supplies and consumables to conduct their experiments up until the last day to complete the project. However, when asked for documentation tracking the lab usage, we were informed that no such documentation was maintained. Additionally, no documentation was maintained to support when the supplies were received and put into use. These supplies were purchased less than 6 days out of 1,095 (or 0.5 percent) of the award period. Therefore, we question \$6,210 in lab supplies purchased at the end of the award. See Table 10 for purchase information.

Table 10. Award 3 Questioned Transactions Near the Award Expiration

Description	Invoice Amount	F&A	Total Charged	% Charged to NSF	Days Remaining in Award
Lab Supplies	\$ 2,397	\$ 1,271	\$ 3,668	100%	6
Conductivity Meter	990	525	1,515	100%	5
Chemicals	387	205	592	100%	3
Reusable Containers	114	61	175	100%	2
Microscope Supplies	91	48	139	100%	2

Description	Invoice Amount	F&A	Total Charged	% Charged to NSF	Days Remaining in Award
Laboratory Sealing Film	70	36	106	100%	2
Tweezers	10	5	15	100%	5
Total Award 3	\$ 4,059	\$ 2,151	\$ 6,210		

Source: Auditor analysis of questioned transactions

UD does not have sufficient procedures to ensure that it allocates all costs to sponsored projects based on the relative benefits received. Additionally, UD personnel did not adequately review the above questioned material and supply expenditures, which resulted in unallocable costs. Enhanced oversight procedures and controls should be adopted to review expenditures charged near the end of the award period. Having improved oversight processes in place would help ensure 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.

Recommendations

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

1. Resolve the \$19,208 in questioned costs, and direct UD to repay or otherwise remove the sustained questioned costs from its NSF awards.
2. Direct UD to develop and implement policies and procedures for the tracking of receipt and usage of supplies and materials that are being directly charged to Federal awards.

Summary of Awardee Response

UD disagreed with our conclusions questioning \$19,208 related to materials and supplies for the three awards. Documentation was provided detailing when the purchase was made and when the invoice was paid. Invoices were paid only after the complete delivery of the purchased items. UD stated they have a strong control environment for materials and supplies costs with multiple levels of both preventive and detective controls to ensure that costs are charged to Federal awards in accordance with the benefit that the projects receive. UD provided additional responses for each of the awards as follows:

Award 1

UD stated the cost allocation for these supplies was based on an allocation methodology that considered multiple factors of the awards involved and a percentage that was proportional to the benefit received by each award, as assessed by the PI. The cost of these shared supplies was allocated on a basis considering a) the number of personnel contributing effort on each project (regardless of whether salary was directly charged or cost shared); and b) the nature of the work. Based on this approach, the PI determined 44% of the supply charges were allocable to the NSF award.

Award 2

UD stated these combined supply purchases were necessary to continue experiments and grow samples in the PI's lab for the May - September 2015 period. A portion of the supply expenses were allocated based on a methodology designed to consider the percentage of work that was being completed by the PI's lab.

Award 3

UD stated this award was specifically focused on educational experiences and development opportunities for undergraduate researchers, and not with a specific programmatic goal or objective on an individual research project. As such, traditional concepts regarding allocability related to period of performance do not apply. UD stated, these purchases were for small-scale consumable lab supplies utilized by the 10 undergraduate students working on this award during the summer of 2014. They used the supplies and consumables to conduct their experiments up until the last day of the award as part of their overall educational experience. UD believes the charges were reasonable.

See Appendix A for the complete UD response.

Auditors' Additional Comments

Our conclusions remain unchanged concerning the \$19,208 of questioned costs. Although UD provided explanations to support why these purchases should be allowable, the documentation provided did not support the purchases.

Finding 5: Unallowable Indirect Costs

We questioned \$2,465 in indirect costs charged to NSF. The indirect costs were assessed against participant support costs, which is unallowable in accordance with NSF grant policies.

According to NSF's Award & Administration Guide 13-1 V.B.8a(iv), indirect costs (F&A) are not allowed on participant support costs unless an allowance has been established or negotiated in advance.

In our testing, we noted two transactions with indirect costs assessed against participant support costs. Specifically, we questioned \$2,465 in indirect costs assessed against stipend payments to Research Experiences for Undergraduates summer interns.

UD personnel incorrectly coded the above transactions, and, therefore, they received improper indirect cost allocations. Without an effective process in place to ensure participant support costs are excluded from modified total direct costs, there is increased risk that funds may not be spent in accordance with NSF and Federal requirements.

Recommendations:

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

1. Resolve the \$2,465 in questioned costs, and direct UD to repay or otherwise remove the sustained questioned costs from its NSF awards.
2. Direct UD to strengthen its administrative and management controls and processes for reviewing and approving indirect costs charged to NSF awards.

Summary of Awardee Response

UD agrees with the \$2,465 in questioned indirect costs and will remove these costs from the NSF award. UD will strengthen administrative and management controls for indirect cost application and monitoring of participant support costs on NSF awards by a) increasing education and outreach to ensure departments code transactions to the appropriation expense category to ensure proper indirect cost application; and b) performing expense monitoring to ensure the appropriate indirect cost allocation on participant support costs.

See Appendix A for the complete UD response.

Auditors' Additional Comments

UD's comments are responsive to this finding. Once NSF determines that the recommendations have been adequately addressed and the \$2,465 in questioned costs have been repaid or otherwise removed, this finding should be closed.

Finding 6: Unallowable or Unreasonable Salaries and Wages

We identified a payroll transfer lacking adequate documentation, resulting in \$1,992 in questioned costs.

Unreasonable Payroll Transfers

We questioned one payroll transfer charged to one award, totaling \$1,992 (\$1,341 direct costs plus \$651 indirect costs), for payroll adjusted without adequate documentation.

We question \$1,992 in connection with an adjustment for graduate student compensation that occurred after the expiration of the award, on March 31, 2015. UD provided an explanation relating to an event occurring in May 2015 for an adjustment for the month of March 2015 and did not provide appropriate explanation or calculation regarding the March adjustment. Therefore, we were unable to determine if the amount was reasonable or allocable to this award. Federal regulations require charges to awards be supported by adequate documentation.¹⁴ Federal regulations also require that charges for salaries and wages be based on records that accurately reflect the work performed and support the distribution of salaries among specific cost objectives.¹⁵

Table 11. Summary of Payroll Transfers Questioned

Description	Award	Direct	Indirect	Total
Graduate Assistant		\$	\$	\$ 1,992
Total		\$	\$	\$ 1,992

Source: Auditor analysis of questioned transactions

UD personnel did not adequately document or review payroll transfers made to NSF awards, which resulted in unallowable costs. Without a process to ensure payroll transfers are reasonable and have adequate documentation and explanation, there is increased risk that funds may not be used as required to accomplish the necessary project objectives in accordance with Federal and NSF requirements.

Recommendations

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

1. Resolve the \$1,992 in questioned costs, and direct UD to repay or otherwise remove the sustained questioned costs from its NSF awards.

¹⁴ 2 CFR Part 220, Appendix A, Section A.2.e. states that "The accounting practices of individual colleges and universities must support the accumulation of costs as required by the principles, and must provide for adequate documentation to support costs charged to sponsored agreements."

¹⁵ 2 CFR Part 200.430 states, "Charges to Federal awards for salaries and wages must be based on records that accurately reflect the work performed" and further, these records must "support the distribution of the employee's salary or wages among specific activities or cost objectives if the employee works on more than one Federal award; a Federal award and non-Federal award."

2. Direct UD to strengthen its administrative and management controls over payroll transfers charged to NSF awards.

Summary of Awardee Response

UD disagreed with our questioning of \$1,992 for the payroll adjustment and stated it has strong controls in place and adequate documentation to support salary charges. The adjustment was made after a meeting with the PI in May 2015 to review costs charged to the PI's sponsored awards. Based on that meeting, it was determined that the student stipend for the period of March 2015 was not commensurate with the proportion of effort expended on the award. The PI estimated the student spent 3 weeks of their time in March 2015 on the award to finalize results and draft the final report. The student was originally paid 18% of the stipend on the award in the preceding months and the cost transfer increased that allocation to approximately 80%. The payroll adjustment was processed in a timely manner and in accordance with UD policy and procedures. UD contends that these costs are appropriate because the explanation of the direct benefit of the cost and the associated calculation were provided along with supporting documentation.

See Appendix A for the complete UD response.

Auditors' Additional Comments

Our conclusion remains unchanged concerning the \$1,992 of questioned costs. The PI's estimate of approximately 80% of the time spent on the award is not supported by the certified effort report, which shows 14% of the student's time spent on this award for this time period. In addition, the documentation provided by UD does not show how the \$1,341 direct cost adjustment was collected or how that adjustment resulted in 80% of the salary being charged. We were not provided adequate documentation to support the amount of this adjustment. Furthermore, if the certified effort reports cannot be relied upon as the basis for charging costs to its Federal awards, then the effort reporting system could be undermined resulting in mischarges to the Government.

A handwritten signature in blue ink that reads "WithumSmith+Brown, PC". The signature is written in a cursive, flowing style.

WithumSmith+Brown, PC

April 26, 2019

Appendix A: Awardee Response



210 Hullihen Hall
Newark, DE 19716-1551
Phone: 302-831-2136
Fax: 302-831-2828

NSF OIG Draft Audit Report Response

[REDACTED]
Senior Manager
WithumSmith + Brown, PC

Dear [REDACTED]:

Thank you for the opportunity to comment on the audit report for the NSF OIG audit of incurred costs at the University of Delaware (UD). We are responding to the draft report submitted by email on April 3, 2019 and appreciate your assistance in refining earlier language from the draft discussion report.

UD believes the audit has confirmed the strength of the UD programs, policies, controls and processes we have in place to ensure proper stewardship of NSF funds. We appreciate Withum's partnership during this audit, including your staff's and your clear communications and collaborative efforts to ensure this report is accurate and representative of UD's overall sponsored project administration processes and controls. This report provides us an opportunity to further improve our management and oversight of NSF-sponsored projects.

Below, please find our responses to the audit recommendations.

FINDING #1: INADEQUATE SUPPORT FOR AWARD DOCUMENTATION

UD has strong controls in place to ensure that expenses charged to federally sponsored awards are allowable, allocable, reasonable and necessary. The documentation that UD furnished to Withum provided details to substantiate expense amounts, payment dates and business justification regarding items purchased. UD plans to implement Concur for travel and expenses, which will help to improve documentation consistency.

Unsupported Credit Card Purchases

OIG Recommendation:

Strengthen administrative and management controls over credit card purchases to ensure appropriate receipts and invoices are maintained to support the charges.

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NSF OIG Draft Audit Report Response

UD Response:

UD disagrees with Withum's conclusion disallowing \$43,714 of items purchased via credit card. These charges were supported with documentation provided to Withum. Supporting documentation included a combination of merchant produced and internal records to document review, approval, price verification, etc.

Gift Card Usage Not Supported

OIG Recommendation:

Strengthen its administrative and management controls over the distribution of gift cards to fund projects and the tracking of how the gift cards are spent.

UD Response:

UD agrees with Withum's conclusion regarding 8 transactions, totaling \$75,776 in questioned costs related to gift cards. These costs have been removed from the NSF awards. In order to ensure compliance with Federal regulations, UD will implement an alternative approach to provide timely funds to mini-project awards via a mechanism that will document how funds were spent.

Unsupported Cost Transfers

OIG Recommendation:

Strengthen the administrative and management controls over the maintenance of original source documentation to support all cost transfers.

UD Response:

UD disagrees with Withum's conclusion disallowing 4 transactions, totaling \$40,764 in costs related to cost transfer documentation. These charges were supported by documentation provided by the vendor as well as internal adjustment support clearly noting amounts, justification, dates processed and internal reviews and approvals.

Lack of Adequate Documentation to Support Other Award Charges: 8 transactions, totaling \$72,821

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NSF OIG Draft Audit Report Response

OIG Recommendation:

Implement policies and procedures that describe the source documentation that should be maintained to properly support charges to Federal awards.

UD Response:

Item 1

UD disagrees with Withum's conclusion disallowing \$2,500 for a fellowship payment. UD provided Withum with supporting documentation (Payment Activity Webform) clearly linked to payment support for NSF Award # [REDACTED]. Through conversations with the PI, UD confirmed the researcher contributed directly to the development of an essential set of genetic tools for the project during his 2015 summer fellowship.

Item 2

UD disagrees with Withum's conclusion disallowing \$3,536 for the grow lights. UD feels strongly that considering the primary benefit of the grow lights was to NSF Award # [REDACTED] and the fact that 2/3 of the cost of the lights was cost shared by non-sponsored funds, that the allocation of 1/3 of the cost of the grow lights to NSF Award # [REDACTED] was reasonable and appropriately justified. Information provided included PI attestation of the benefit of this expenditure directly to the NSF award. The ability to grow [REDACTED] using the grow lights was integral to this project.

Item 3

UD disagrees with Withum's conclusion disallowing \$14,852 of partial equipment costs to NSF Award # [REDACTED]. Documentation (journal voucher, approval quote, order confirmation) provided to Withum clearly demonstrates the calculation to support the allocation of a portion of the cost of equipment charged to the EPSCoR award (NSF Award # [REDACTED]). This goal of this EPSCoR award (<https://www.nsf.gov/od/oia/programs/epscor/>) is to, "...advance knowledge of the biogeochemical processes..." and advancement of these efforts through extensive collaboration to broaden the impact of this work, as per the award terms and conditions. This information clarifies the purpose of the EPSCoR award is to provide up to \$20 million for a period of 5 years to support improvements to physical and cyber infrastructure and human capital development in research areas. Given the unique purpose of the EPSCoR award, the requirement to develop long-term research implementation plans and to broaden the impact of this research, the traditional concepts of allocability do not apply. The questioned equipment charge for a super resolution microscope system represents an allowable use of EPSCoR funds, furthering the goals to enhance the state of Delaware's research infrastructure. As it relates to this questioned charge, the initial charge was posted to a non-sponsored fund and this

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transfer allocated an additional portion of expense (up to the budgeted amount of \$150,000) to the EPSCoR award. The remaining cost of the infrastructure equipment charge was cost shared by non-sponsored funds.

Item 4

UD disagrees with Withum's conclusion disallowing \$12,170 of the first-year lease for the [REDACTED] spectrometer on NSF Award # [REDACTED]. UD provided Withum with adequate documentation to support this cost, including a contract that clearly noted the item, amount, and date, as well as adjustment support that included a detailed justification to explain the circumstances of the cost transfer. The goal of this EPSCoR award (<https://www.nsf.gov/od/oia/programs/epscor/>) is to, "...advance knowledge of the biogeochemical processes..." and advancement of these efforts through extensive collaboration to broaden the impact of this work, as per the award terms and conditions. The information clarifies the purpose of the EPSCoR award to provide up to \$20 million for a period of 5 years to support improvements to physical and cyber infrastructure and human capital development in research areas. Given the unique purpose of the EPSCoR award, the requirement to develop long-term research implementation plans and to broaden the impact of this research, the traditional concepts of allocability do not apply. The questioned lease support charge represents an allowable use of EPSCoR funds furthering the goals to enhance the state of Delaware's research infrastructure.

Item 5

UD disagrees with Withum's conclusion disallowing \$12,402 in costs. These charges were internal service center fees accompanied by supporting documentation that included internal adjustment records, review and approval documentation as well as business purposes and detail regarding the costs.

Item 6

UD disagrees with Withum's conclusion disallowing \$10,030 in costs. These charges were internal service center fees accompanied by supporting documentation that included internal adjustment records, review and approval documentation as well as business purposes and detail regarding the costs.

Item 7

UD disagrees with Withum's conclusion disallowing \$8,250 in costs. These charges were internal service center fees accompanied by supporting documentation that included internal adjustment records, review and approval documentation as well as business purposes and detail regarding the costs.

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Item 8

UD disagrees with Withum's conclusion disallowing \$9,081 in costs. These charges were supported with documentation provided to Withum. Supporting documentation included a combination of merchant produced and internal records to document review, approval, price verification, etc. for the microscope repair.

FINDING #2: EQUIPMENT PURCHASES AT END OF AWARD OR WITH NO BENEFIT TO AWARD

OIG Recommendations:

1. Resolve the \$125,458 in questioned costs, and direct UD to repay or otherwise remove the sustained questioned costs from its NSF awards.
2. Direct UD to strengthen its administrative and management controls and processes over equipment and related purchases near the end of awards.

UD Response:

UD disagrees with Withum's conclusion disallowing 2 transactions totaling \$99,282 related to equipment. These charges were supported with documentation provided to Withum (Payment Activity Form, Invoice), which linked to the payment for NSF Award # [REDACTED]. The purpose of the EPSCoR award (<https://www.nsf.gov/od/oia/programs/epscor/>), NSF Award # [REDACTED], is to provide up to \$20 million for a period of 5 years to support improvements to physical and cyber infrastructure and human capital development in research areas. The EPSCoR program goals are to broaden the impact of NSF-funded research to create new pathways and foster collaboration across government, academia and private industry. As such, the traditional concepts of allocability do not apply and the timeline for the purchase does not preclude the allocability to the NSF-funded EPSCoR project. The original equipment expense was more than \$150,000; the charge was cost shared between the EPSCoR award and other non-sponsored funds. The equipment was received in November 2013, prior to the award end date. Vendor billing was delayed until late 2014.

UD agrees with 3 transactions, totaling \$26,177 in questioned costs related to equipment and related purchases near the end of awards. These costs will be removed from the NSF awards. UD has an Automated Closeout Report (ACR), which is an electronic webform that flags after end date charges for a detailed review to ensure all transactions are within the period of performance. UD plans to provide additional training and resource materials to further promote the use of the ACR.

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FINDING #3: UNALLOWABLE OR UNREASONABLE TRAVEL CHARGES

OIG Recommendations:

1. Resolve the \$44,469 in questioned costs and direct UD to repay or otherwise remove the sustained questioned costs from its NSF awards.
2. Direct UD to develop and implement travel policies and procedures that:
 - a. Are consistent across all departments;
 - b. Require prior authorization and approvals;
 - c. Prohibit approvals or authorizations from being performed by spouses or family members, or others with actual or perceived conflicts of interest;
 - d. Require a detailed travel expense report identifying the business activities conducted for each day expenses are claimed, and identifying any personal or nonwork related days included in the travel;
 - e. Ensure adequate review of claimed travel expenses charged to Federal awards to ensure travel is in accordance with UD policies, Federal regulations and within the period of performance of the award;
 - f. Ensure there is a clear benefit to the Federal award being charged; and
 - g. Ensure that adequate documentation is provided to support attendance at conferences, speaking engagements, and other business-related activities.

UD Response:

UD has strong controls in place to ensure that travel charged to federally sponsored awards is allowable, allocable, reasonable and necessary. The documentation that UD provided to Withum adequately supported selected travel costs. To strengthen controls around travel costs on all federally sponsored awards, including NSF awards, UD has embarked on the following initiatives:

- **Launching Concur, a new Travel & Expense Management program** to all University employees in 2019. The Concur Travel & Expense system will combine and streamline business and travel purchases including UD Credit Card transactions. Employees are provided training on the new system, which will also highlight specific requirements for sponsored programs expenditures.
- **Monitoring charges close to the end of period of performance.** UD has an Automated Closeout Report (ACR), which is an electronic webform that flags after end date charges for a detailed review to ensure all transactions are within the period of performance. UD plans to provide additional training and resource materials to further promote the use of the ACR.

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- **Providing guidance to faculty and staff about allocation procedures and documentation.** The University issues a monthly newsletter and hosts an annual research administration conference to provide training on allocation procedures and documentation. The University also hosts a New Faculty Orientation each fall to educate PI's on research administration policies and procedures.
- **Conducting additional training on cost principles.** The University issues a monthly newsletter and hosts an annual research administration conference to provide training on cost principles. The University also hosts the National Council of University Research Administrators (NCURA) Department Research Administration course approximately every two years, which is a two-day intensive training. In addition, the University offers research administration onboarding training.
- **Clarifying roles of purchaser, preparer and approver (ROPPE).** Procurement Services has modified their working practice so that they are required to receive an invoice/receipt/supporting documentation prior to issuing payment.
- **Reviewing and updating supporting documentation and retention standards.** The Concur system requires that supporting documentation is uploaded with each transaction. The University will continue to assess existing policies related to supporting documentation and will perform a risk-based monitoring approach to policy adherence.

UD believes that it has adequately responded to and provided supporting documentation and disagrees with Withum's conclusion disallowing travel costs for 8 transactions totaling \$32,159.

UD Detailed Responses to Questioned Travel Costs

Unsupported Travel Costs

Inadequate documentation and unallocable PI travel

UD disagrees with Withum's conclusion disallowing transactions totaling \$3,309 for travel to a conference to present research results. The purpose of the travel to the [REDACTED] Workshop in [REDACTED] was for the PI to present research related to NSF Award # [REDACTED]. Supporting documentation provided to Withum included the budget justification noting this conference and trip, an e-ticket itinerary and receipt confirmation, [REDACTED] visa entry fees and associated shipping fees. The PI indicated that there was no price difference for the airfare directly to [REDACTED] versus airfare including a stopover in [REDACTED]. As such, the total charge for the [REDACTED] airfare to the NSF Award # [REDACTED] was not impacted by the [REDACTED] stop. As the cost of a non-[REDACTED] airfare was fully allocable to the NSF award, and the addition of the [REDACTED] stop did not impact the NSF Award # [REDACTED] costs, it is reasonable to charge the full airfare cost to the NSF Award # [REDACTED].

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Travel After End of an Award

Travel Expenses to Attend Conferences that Occurred After the NSF Award Expiration

UD agrees with Withum on its conclusions for 2 travel transactions (consisting of multiple travel line items) totaling \$6,618 occurring after the end of an award. UD will review and update the travel policy as outlined in the NSF recommendations for charging travel costs on NSF awards. UD has an Automated Closeout Report (ACR), which is an electronic webform that flags after end date charges for a detailed review to ensure all transactions are within the period of performance. UD plans to provide additional training and resource materials to further promote the use of the ACR.

Additionally, UD is launching a new Travel & Expense Management program to all University employees in 2019. The Concur Travel & Expense system will combine and streamline business and travel purchases including UD Credit Card transactions. Employees will be trained on the new system, and the training will highlight specific requirements for sponsored program expenditures.

UD agrees with Withum's conclusion questioning a \$1,500 flight to [REDACTED] UD will remove this cost from the award. Conference presentation of project research results occurred after the award period of performance. Please refer to the ACR and Concur implementations noted above.

UD agrees with Withum's conclusion related to \$3,381 in conference registration fees that occurred outside the period of award performance. UD will remove these costs from the award. Conference presentation of project research results occurred after the award period of performance.

Unreasonable Travel or Travel that Did Not Benefit Award

International Travel Expenses for the PI

UD disagrees with Withum's conclusion disallowing \$7,166 in international travel expenses for the PI. The role of the PI on the NSF Award # [REDACTED] involved participating in national/international conferences to report research findings and bring back ideas on the latest work reported by others and visiting labs to perform measurements that could not be conducted at UD due to lack of the instrumentation needed. As previously indicated and attested by the PI, the summer travel for the PI was primarily to use the [REDACTED] apparatus at the [REDACTED] in [REDACTED]. However, to minimize cost and travel, the trip was combined with attendance at three international conferences in [REDACTED]. Finally, per the Research Terms and Conditions (RTC), NSF waived the requirement for prior approval for re-budgeting

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among direct cost categories. RTC allows the PI the authority to reallocate funds to foreign travel in order to benefit the award, which this travel accomplished.

Unreasonable Per Diem Charges for PI

UD disagrees with Withum's conclusion disallowing transactions totaling \$4,162 for travel to a conference to present research results. The PI's collaboration with the physicists at the University [REDACTED] was necessary for the program and resulted in various publications describing work performed during the performance period; publications which were also referenced in the progress reports provided to NSF Award # [REDACTED]

Unreasonable Travel to [REDACTED] for PI and Co-PI

UD feels strongly that travel for the PI and Co-PI was reasonable, necessary and significantly benefitted the NSF awards and disagrees with Withum's conclusion disallowing \$17,770 of travel costs to [REDACTED] for the PI and Co-PI for their research collaboration. This travel allowed for critical collaboration and resulted in key publications emanating from the collaborations. Additional comments from UD include:

- The provided travel expense report authorization (UDeI Works – Reimbursement) clearly demonstrates internal UD approval for the travel was separate from PI and Co-PI sign-off. The section under Sign-Off History reflects the required UD approvals. The dates of the 2013 [REDACTED] travel were [REDACTED] 2013. Per PI clarification and the reimbursement request, NSF award related work was conducted from [REDACTED] 2013. [REDACTED] and [REDACTED] represented travel days, and [REDACTED] were personal days taken.
- While foreign travel was not originally included in the proposal budget, the RTC allows the PI the authority to reallocate funds to foreign travel in order to benefit the award, which this travel accomplished. Specifically, as delineated in the RTC (https://www.nsf.gov/bfa/dias/policy/fedrtc/appendix_a.pdf), NSF has waived the requirement for prior approval for re-budgeting among direct cost categories. The original proposal expressed the intent (but no commitment) that travel costs for the PI/Co-PI could be paid for from sources other than the NSF award. The original proposal budget estimates were prepared to reflect some level of uncommitted cost sharing for the foreign travel. In actuality, the cost for the travel was partially supported by other funds, but the breakdown of actual charges (per diem, lodging, etc.) charged to the NSF award versus those charges cost shared does not reflect the estimation assumptions used in calculating the proposal budget. This anticipated cost share was reflected in the proposal budget via the lower estimated costs for total per diem. The per diem costs for the [REDACTED] 2013 work dates [REDACTED] were not charged to this NSF award and

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were funded by other sources; NSF funds were used to cover other components of the [REDACTED] travel costs.

- UD agrees to remove \$248 of unallowable per diem charges from the NSF award; \$248 represents the difference between the incorrectly applied per diem amount of \$98 and the allowable Department of State per diem amount of \$94 (\$4 per day for 31 days, for both the PI and Co-PI). UD contends that is allowable and appropriate to retain the remaining per diem costs totaling \$5,828. The proposal budget estimates were prepared to reflect some level of uncommitted cost sharing for the foreign travel. In actuality, the cost for the travel was partially supported by other funds, but the breakdown of actual charges does not necessarily need to reflect the estimates used in calculating the proposal budget. The original proposal expressed the intent (but no commitment) that travel costs for the PI/Co-PI could be paid for from sources other than the NSF award. This anticipated non-committed cost share was reflected in the lower estimated costs for per diem reflected in the proposal budget. In fact, the per diem costs for the [REDACTED] work dates ([REDACTED]) were not charged to this NSF award and were funded by other sources.
- Per the PI, the benefit of time spent at the [REDACTED] proved even more valuable than was anticipated in the project proposal. For example, [REDACTED] provided free of charge access to high-level specialized IT support that included data base specialists familiar with language database archiving. Thus, the PI determined that it would be valuable for the full achievement of the goals of the NSF-sponsored project to increase the time spent at [REDACTED] from three weeks per year to about two months a year. While such extensive foreign travel was not originally included in the proposal budget, the RTC allows the PI the authority to reallocate funds to foreign travel in order to benefit the award.
- While initial documentation provided showed discrepancies in housing rental dates due to an administrative error on the part of the lodging vendor, subsequent documentation provided clarified dates and supports the lodging at the [REDACTED] from [REDACTED] 2014.

Unreasonable PI Travel to [REDACTED]

UD agrees with transaction costs totaling \$563 in questioned travel costs related to personal travel. These costs have been removed from the NSF award. UD will review and update the travel policy as outlined in the NSF recommendations for charging travel costs on NSF awards.

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FINDING #4: UNREASONABLE MATERIALS AND SUPPLIES

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

OIG Recommendations:

1. Resolve the \$19,208 in questioned costs, and direct UD to repay or otherwise remove the sustained questioned costs from its NSF awards.
2. Direct UD to develop and implement policies and procedures for the tracking of receipt and usage of supplies and materials that are being directly charged to Federal awards.

UD Response:

UD disagrees with Withum's conclusion disallowing \$19,208 related to materials and supplies and maintains we have responded reasonably to Withum's questions and supplied appropriate documentation regarding these charges. Purchase documentation was provided detailing when the purchase was made and when the invoice was paid. Invoices for supplies were paid only after the complete delivery of the purchased item. UD has a strong control environment for materials and supplies costs. Multiple levels of preventive and detective controls are in place to ensure that materials and supplies are charged to Federal awards in accordance with the benefit that the projects receive.

Award 1 Questioned Transactions Near the Award Expiration, Table 8

UD disagrees with Withum's conclusion and believes that it has adequately responded and provided support for 10 purchases of materials and supplies, totaling \$8,357. Cost allocation for these supplies were based on an allocation methodology that considered multiple factors of the awards involved and a percentage that was proportional to the benefit received by each award, as assessed by the PI, the individual with the closest working knowledge of lab and project activities. The cost of these shared supplies was allocated on a basis considering a) the number of personnel contributing effort on each project (regardless of whether salary was direct charged or cost shared) and b) the nature of the work (if it was in an intense experimental phase versus a computational phase when the supplies were purchased). Based on this approach, the PI determined 44% of these supply charges were allocable to NSF Award # [REDACTED], which was in a major experimental phase at the end of the award to complete necessary technical work during the project period.

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Award 2 Questioned Transactions Near the Award Expiration, Table 9

UD disagrees with Withum's conclusion and believes that we have adequately responded and have provided support for 8 purchases, totaling \$4,641. These combined supply purchases were necessary to continue experiments and grow samples under the hood in the PI's lab for the May - September 2015 period. A portion of this supply expense was allocated based on an allocation methodology considering the percentage of work that was being completed by the PI's lab; 10% utilized on NSF Award # [REDACTED]. There were other charges solely benefitting this award, and those charges were allocated 100% to the NSF award.

Award 3 Questioned Transactions Near the Award Expiration, Table 10

UD disagrees with Withum's conclusion and believes that we have adequately responded and have provided support for 7 purchases, totaling \$6,210. NSF Award # [REDACTED] was specifically focused on educational experiences and development opportunities for undergraduate researchers, and not with a specific programmatic goal or objective on an individual research project. As such, traditional concepts regarding allocability related to period of performance do not apply. These purchases were for small-scale consumable lab supplies utilized by the 10 undergraduate students working on this award during the summer of 2014. They used supplies and consumables to conduct their experiments up until the last day as part of their overall educational experience. Therefore, it is reasonable to consider that their experiments even in the last days of the award would fully utilize these small-scale supplies on the microscopy and other testing benefitting the overall experience and education.

FINDING #5: UNALLOWABLE INDIRECT COSTS

OIG Recommendations:

1. Resolve the \$2,465 in questioned costs, and direct UD to repay or otherwise remove the sustained questioned costs from its NSF awards.
2. Direct UD to strengthen its administrative and management controls and processes for reviewing and approving indirect costs charged to NSF awards.

UD Response:

UD agrees with \$2,465 in questioned indirect (F&A) costs. These costs will be removed from the NSF award. UD will strengthen administrative and management controls for indirect costs application and monitoring of participant support costs on NSF awards by:

- increasing education and outreach to ensure departments code transactions to the appropriate expense code to ensure proper IDC application, and

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- performing expense monitoring to ensure the appropriate IDC allocation on participant support costs.

FINDING #6: UNALLOWABLE AND UNREASONABLE SALARY AND WAGES

Unreasonable Payroll Transfers

OIG Recommendations:

1. Resolve the \$1,992 in questioned costs, and direct UD to repay or otherwise remove the sustained questioned costs from its NSF awards.
2. Direct UD to strengthen its administrative and management controls over payroll transfers charged to NSF awards.

UD Response:

UD has strong controls in place and adequate documentation to support salary charges posted to federally sponsored awards. UD disagrees with Withum's conclusion disallowing \$1,992 related to a March 2015 payroll adjustment that was processed in May 2015. The adjustment was made after a meeting with the PI in May 2015 to review costs charged to the PI's sponsored awards. Based on that meeting, it was determined that the student stipend charged for the period of March 2015 was not commensurate with the proportion of effort expended on the award. The PI estimated the student spent 3 weeks of their time (approximately 80%) in March 2015 on the award to finalize results and draft the final report. The student was originally paid 18% of the stipend on the award in the preceding months and the cost transfer increased that allocation to approximately 80%. The payroll adjustment was processed in a timely manner and in accordance with UD policy and procedures. We contend strongly that these costs are appropriate because the explanation of the direct benefit of the cost and the calculation was clearly provided along with substantial supporting documentation.

Please feel free to contact my office with any questions at 302-831-4978.

Sincerely,



Jeff Friedland
AVP for Research Administration
University of Delaware

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Appendix B: Objective, Scope, Methodology, and Criteria

Objective

To determine if costs claimed by UD 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 UD through the Award Cash Management Service for the 3-year period beginning December 1, 2013 to November 30, 2016. We obtained from UD all award transactions comprising all costs claimed to NSF during this period. This provided an audit universe of more than \$82 million, in more than 147,000 transactions, across 403 individual NSF awards. For transaction testing, we judgmentally selected 253 transactions, totaling more than \$1.8 million, and utilized a data analytics approach to identify potential risk areas.

The audit work was conducted at the auditors' offices; at NSF's headquarters in Alexandria, Virginia; and on-site at UD in Newark, Delaware. On-site fieldwork was conducted during August and September 2017.

UD management is responsible for establishing and maintaining effective internal controls 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 UD's internal controls to understand the policies and procedures relevant to the financial reporting and administration of NSF awards. We also evaluated UD'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 UD's internal control over award financial reporting and administration. Accordingly, we do not express an opinion on the effectiveness of UD'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

Our work required reliance on computer-processed data obtained from UD and NSF. At our request, UD provided detailed transaction data for all costs charged to NSF awards during our audit period. We also extracted award data directly from NSF's various data systems. To select transactions for further review, we designed and performed automated tests of UD and NSF data to identify areas of risk and conducted detailed reviews of transactions in those areas.

We assessed the reliability of the data provided by UD by 1) comparing costs charged to NSF award accounts within UD's accounting records to reported net expenditures, as reflected in UD'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 UD used to extract transaction data from its accounting records and systems.

After verifying that the population of data was appropriate, we analyzed the data contained in the UD general ledger and supporting detailed ledgers to identify anomalies, outliers, and aberrant transactions. We then judgmentally selected certain transactions to test.

Based on our testing, we found UD's computer-processed data 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 auditors' report on NSF's financial statements for fiscal years 2014, 2015, and 2016 found no reportable instances in which NSF's financial management systems did not substantially comply with applicable requirements.

In assessing the allowability of costs claimed to NSF by UD, we also gained an understanding of the internal controls applicable to the scope of this audit through interviews with UD personnel, review of policies and procedures, and conducting walkthroughs as applicable.

Criteria

We assessed UD'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 (OMB) 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* (OMB Circular A-110)
- NSF General Grant Conditions (GC-1)
- NSF Research Terms and Conditions
- 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 Terms and Conditions

Appendix C: Questioned and Unsupported Costs Summary by Finding

Finding Number/Description		Questioned Costs Unsupported	Questioned Costs Unallowable	Total
1	Inadequate Support for Award Charges	\$ 229,539	\$ 3,536	\$ 233,075
2	Equipment Purchases at End of Award or with No Benefit to Award	--	125,458	125,458
3	Unallowable or Unreasonable Travel Charges	--	44,469	44,469
4	Unreasonable Materials and Supplies	--	19,208	19,208
5	Unallowable Indirect Costs	--	2,465	2,465
6	Unallowable or Unreasonable Salaries and Wages	--	1,992	1,992
Total		\$ 229,539	\$ 197,128	\$ 426,667



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