

# Performance Audit of Mid-Scale Research Infrastructure Incurred Costs – University of Connecticut Health Center

REPORT PREPARED BY COTTON & COMPANY ASSURANCE AND ADVISORY, LLC

NATIONAL SCIENCE FOUNDATION  
OFFICE OF INSPECTOR GENERAL

August 18, 2023  
OIG 23-1-010





## AT A GLANCE

Performance Audit of Mid-Scale Research Infrastructure Incurred Costs –  
University of Connecticut Health Center

Report No. OIG 23-1-010

August 18, 2023

### AUDIT OBJECTIVE

The National Science Foundation Office of Inspector General engaged Cotton & Company Assurance and Advisory, LLC (C&C) to conduct a performance audit of costs the University of Connecticut Health Center (UCONN HC) incurred on its Mid-scale Research Infrastructure award. The auditors tested more than \$15 million of the approximately \$18.4 million of costs claimed to NSF. The audit objective was to evaluate UCONN HC's award management and oversight capabilities as they relate to the Mid-scale program requirements on NSF Award No. [REDACTED]. A full description of the audit's objectives, scope, and methodology is attached to the report as Appendix B.

### AUDIT RESULTS

UCONN HC generally complied with federal and NSF regulations, NSF program and award terms and conditions, and UCONN HC policies while administering its Mid-scale award. However, the report identified four findings and two areas for improvement related to UCONN HC's compliance with award requirements. The auditors questioned \$1,049 of unallowable expenses and identified three compliance-related findings for which no costs were questioned: inadequately documented allocation methodologies, invoices not paid consistent with a service agreement, and non-compliance with NSF's Mid-scale reporting policy. In addition to the findings, the report also includes two areas for improvement related to UCONN HC's lump-sum salary payments and NSF's Project Execution Plan development. C&C is responsible for the attached report and the conclusions expressed in it. NSF OIG does not express any opinion on the conclusions presented in C&C's audit report.

### RECOMMENDATIONS

The auditors included four findings and two areas for improvement in the report with associated recommendations for NSF to resolve the questioned costs and to ensure UCONN HC strengthens administrative and management controls.

### AUDITEE RESPONSE

UCONN HC agreed with the findings in the report. UCONN HC's response is attached in its entirety as Appendix A.

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



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

**MEMORANDUM**

**DATE:** August 18, 2023

**TO:** Quadira Dantro  
Director  
Division of Institution and Award Support

Jamie French  
Director  
Division of Grants and Agreements

Matthew Hawkins  
Office Head  
Research Infrastructure Office

**FROM:** Daniel J. Buchtel [REDACTED]  
Deputy Assistant Inspector General  
Office of Audits

**SUBJECT:** Audit Report No. 23-1-010, University of Connecticut Health Center

This memorandum transmits the Cotton & Company Assurance and Advisory, LLC (C&C) report for the audit of the University of Connecticut Health Center (UConn HC) Mid-scale Research Infrastructure award. The audit encompassed more than \$15 million of the approximately \$18.4 million of costs claimed to NSF during the period. The audit objective was to evaluate UConn HC's award management and oversight capabilities as they relate to the Mid-scale program requirements on NSF Award No. [REDACTED]. A full description of the audit's objectives, scope, and methodology is attached to the report as Appendix B.

Please coordinate with our office during the 6-month resolution period, as specified by OMB 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**

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

- reviewed C&C's approach and planning of the audit;
- evaluated the qualifications and independence of the auditors;
- monitored the progress of the audit at key points;
- coordinated periodic meetings with C&C, as necessary, to discuss audit progress, findings, and recommendations;
- reviewed the audit report prepared by C&C; and
- coordinated issuance of the audit report.

We thank your staff for the assistance that was extended to the auditors during this audit. If you have any questions regarding this report, please contact Sarah Adams at 703.292.7100 or [OIGpublicaffairs@nsf.gov](mailto:OIGpublicaffairs@nsf.gov).

Attachment

cc: Stephen Willard, Dan Reed, Victor McCrary, John Veysey, Ann Bushmiller, Karen Marrongelle, Teresa Grancorvitz, Christina Sarris, Janis Coughlin-Piester, Linnea Avallone, Alex Wynnyk, Rochelle Ray, Charlotte Grant-Cobb, Allison Lerner, Lisa Vonder Haar, Ken Chason, Ken Lish, Billy McCain, Sarah Adams, Jennifer Kendrick, Louise Nelson, Karen Scott

## EXECUTIVE SUMMARY

The Cotton & Company Assurance and Advisory, LLC, audit team determined that the University of Connecticut Health Center (UConn Health) has generally complied with federal and NSF regulations, NSF program and award terms and conditions, and UConn Health policies while administering its Mid-scale Research Infrastructure (Mid-scale RI-2) award. However, the audit team identified four findings and two areas for improvement related to UConn Health's compliance with relevant Mid-scale RI-2 award requirements.

## AUDIT OBJECTIVES

The National Science Foundation Office of Inspector General engaged Cotton & Company Assurance and Advisory, LLC (herein referred to as "we"), to conduct a performance audit of costs UConn Health incurred on NSF Award No. [REDACTED] from the award's inception date through September 30, 2022. The audit objectives included evaluating UConn Health's award management and oversight capabilities as they relate to the Mid-scale RI-2 award and general grant management requirements. The audit scope also included testing to determine if costs claimed on the NSF award were allowable, allocable, reasonable, and in compliance with relevant federal and NSF regulations. We have attached a full description of the audit's objectives, scope, and methodology as [Appendix B](#).

## AUDIT CRITERIA

The audit team assessed UConn Health's compliance with relevant federal regulations (i.e., 2 Code of Federal Regulations [CFR] 200); NSF Proposal and Award Policies and Procedures Guides (PAPPGs) 20-1 and 22-1; NSF's Mid-scale RI-2 Program Solicitation (NSF 19-542); NSF's *Major Facilities Guide* (MFG) (NSF 19-68); NSF's *Research Infrastructure Guide* (RIG) (NSF 21-107); and UConn Health policies and procedures. The audit team included references to relevant criteria within each finding and defined key terms within the Glossary located in [Appendix E](#).

We conducted this performance audit in accordance with *Generally Accepted Government Auditing Standards* (GAGAS) issued by the Comptroller General of the United States.

## AUDIT FINDINGS

As summarized in [Appendix C](#), the auditors identified and questioned \$1,049 in costs UConn Health inappropriately claimed during the audit period, including:

- \$1,049 in inappropriately allocated travel expenses

The audit report also includes three compliance-related findings for which the auditors did not question any costs:

- Inadequately documented allocation methodologies
- Invoices not paid consistent with service agreement
- Non-compliance with Mid-scale reporting policy

In addition to the four findings, the audit report includes two areas for improvement for UConn Health to consider related to:

- Lump-sum salary payments
- Project Execution Plan (PEP) development

## RECOMMENDATIONS

The audit report includes five recommendations, one consideration for NSF's Director of the Division of Institution and Award Support, and one consideration for NSF's Office Head of the Research Infrastructure Office related to resolving the \$1,049 in questioned costs and ensuring UConn Health strengthens its award management environment, as summarized in [Appendix D](#).

## AUDITEE RESPONSE

UConn Health agreed with the findings in the audit report, noting it had repaid NSF for the \$1,049 in questioned costs and that it will strengthen its controls to ensure future compliance. UConn Health's response to the audit report is attached, in its entirety, as [Appendix A](#).

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## Abbreviations

<b>ACM\$</b>	Award Cash Management \$ervice
<b>CBA</b>	Collective Bargaining Agreement
<b>CFR</b>	Code of Federal Regulations
<b>EAGWI</b>	Equity Adjusted General Wage Increase
<b>EVM</b>	Earned Value Management
<b>FMP</b>	Faculty Merit Plan
<b>FY</b>	Fiscal Year
<b>GAGAS</b>	Generally Accepted Government Auditing Standards
<b>GAO</b>	Government Accountability Office
<b>UConn Health</b>	University of Connecticut Health Center
<b>MFG</b>	Major Facilities Guide
<b>NAN</b>	Network for Advanced NMR
<b>NMR</b>	Nuclear Magnetic Resonance
<b>NSF</b>	National Science Foundation
<b>OIG</b>	Office of Inspector General
<b>PAPPG</b>	Proposal and Award Policies and Procedures Guide
<b>PEP</b>	Project Execution Plan
<b>POP</b>	Period of Performance
<b>PI</b>	Principal Investigator
<b>RI</b>	Research Infrastructure
<b>RIG</b>	Research Infrastructure Guide

## BACKGROUND

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The National Science Foundation is an independent federal agency created “to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense; and for other purposes” (Pub. L. No. 81-507). NSF funds research and education in science and engineering by awarding grants and contracts to educational and research institutions throughout the United States.

In 2019, NSF began awarding grants under its new Mid-scale **Research Infrastructure (RI)** Program, which was designed to provide NSF with an agile process for funding experimental research capabilities in the mid-scale range.<sup>1</sup> The Mid-scale RI Program provides award funding through two tracks: Mid-scale Research Infrastructure 1 (**Mid-scale RI-1**) and Mid-scale Research Infrastructure 2 (**Mid-scale RI-2**). Specifically, Mid-scale RI-1 awards support the implementation or design stage of an RI project and Mid-scale RI-2 awards support the implementation stage of an RI project.<sup>2</sup>

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

NSF OIG engaged Cotton & Company Assurance and Advisory, LLC (herein referred to as “we”), to conduct a performance audit of costs the University of Connecticut Health Center (UConn Health) incurred on a single Mid-scale RI-2 award: NSF Award No. [REDACTED]. In fiscal year (FY) 2021, NSF awarded a 4-year \$39.7 million<sup>3</sup> award titled “[REDACTED]” to UConn Health to enable it to support the establishment of a geographically distributed Network for Advanced Nuclear Magnetic Resonance (NMR), or NAN.

UConn Health is located in Farmington, Connecticut and the part of the University of Connecticut system<sup>4</sup> responsible for overseeing clinical care, advanced biomedical research, and academic education in medicine. UConn’s Office of the Vice President for

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<sup>1</sup> Per NSF’s *Major Facilities Guide* (MFG) (NSF 19-68) and *Research Infrastructure Guide* (RIG) (21-107), a mid-scale project includes research instrumentation, equipment, and upgrades to major research facilities or other research infrastructure investments that exceeds the maximum funded by the Major Research Instrumentation Program and are below that of a major multi-user research facility project.

<sup>2</sup> Per NSF program solicitations 19-537 (RI-1) and NSF 19-542 (RI-2), the implementation track (RI-1) is intended to facilitate acquisition or construction for a mid-scale-range implementation project, while the design track (RI-2) is intended to facilitate progress toward readiness.

<sup>3</sup> Although NSF Award No. [REDACTED] has a total intended award amount of \$39,723,283, NSF had only obligated \$31,180,005 in funding for this award as of September 30, 2022.

<sup>4</sup> The UConn system consists of UConn, UConn Health, and The University of Connecticut Foundation.

Research<sup>5</sup> reported approximately \$267.8 million in federal awards in FY 2022, including \$30.7 million in new awards from NSF, as illustrated in Figure 1.

**Figure 1: UCONN and UConn Health’s FY 2022 Research Awards by Source**



Source: The chart data is available on UCONN’s website (<https://ovpr.uconn.edu/about/research-metrics/>). The photo is publicly available on UConn Health’s website (<https://ovpr.uchc.edu/>).

## AUDIT SCOPE

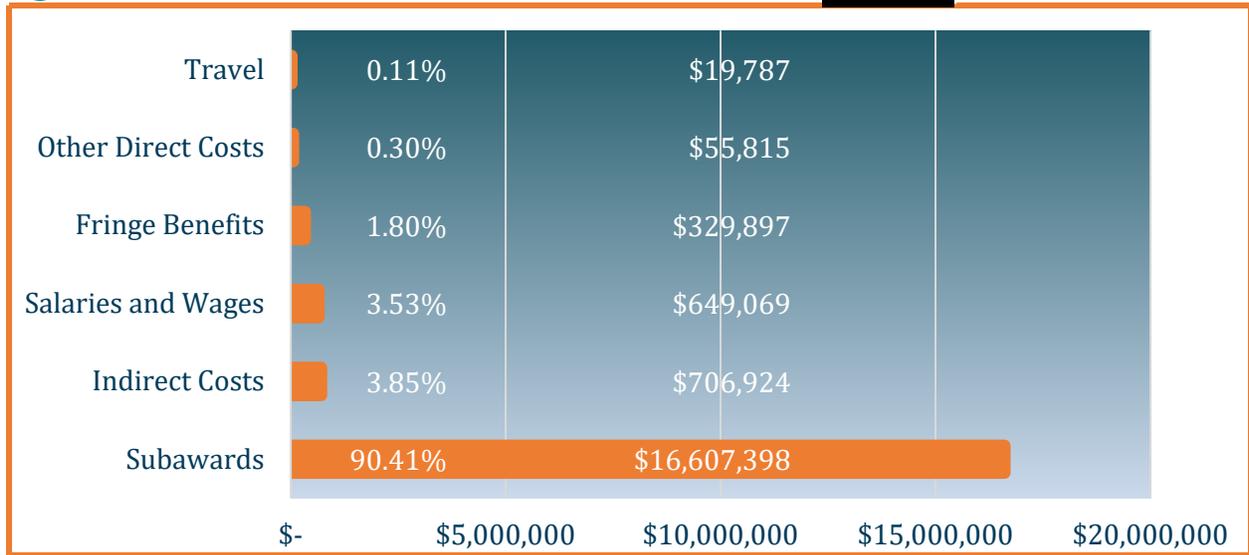
This performance audit—conducted under Order No. 140D0422F0873—was designed to meet the objectives identified in the Objectives, Scope, and Methodology section of this report (**Appendix B**) and was conducted in accordance with *Generally Accepted Government Auditing Standards* (GAGAS) issued by the Comptroller General of the United States.

The objectives of this performance audit included evaluating UConn Health’s award management and oversight capabilities as they relate to the Mid-Scale RI-2 award and determining whether UConn Health complied with relevant NSF RI-2 award requirements, such as developing a Project Execution Plan (PEP). This audit also involved determining if costs that UConn Health claimed through NSF’s Award Cash Management Service (ACM\$) from the award’s inception date through September 30, 2022, were **allocable, allowable, reasonable**, and in compliance with NSF award terms and conditions and applicable federal financial assistance requirements. **Appendix B** provides detailed information regarding the audit objectives, scope, and methodology used for this engagement.

As illustrated in Figure 2, UConn Health provided general ledger data to support the \$18.4 million in expenses it claimed on NSF Award No. [REDACTED] from the award’s inception date through September 30, 2022.

<sup>5</sup> This includes awards for both UConn Health and other UConn research campuses (i.e., Storrs and Regionals).

**Figure 2: Costs UConn Health Claimed on NSF Award No. [REDACTED]**



Source: Auditor analysis of accounting data UConn Health provided, illustrating the total costs (\$18,368,890) by expense type, using financial information to support costs incurred on NSF Award No. [REDACTED] during the audit period. Please note that “Other Direct Costs” in this table includes computer services, consultant services, materials and supplies, and other direct costs.

We judgmentally selected 41 transactions totaling \$15,742,004<sup>6</sup> (see Table 1) and evaluated supporting documentation to determine whether the costs claimed on NSF Award No. [REDACTED] were allocable, allowable, and reasonable, and whether they were in conformity with NSF award terms and conditions, organizational policies, and applicable federal financial assistance requirements.

**Table 1: Summary of Selected Transactions**

Budget Category	Transaction Count	Expense Amount <sup>7</sup>
Subawards	5	\$15,579,386
Salaries and Wages	17	70,828
Other Direct Costs	14	37,316
Indirect Costs	1	33,203
Fringe Benefits	4	21,271
<b>Total</b>	<b><u>41</u></b>	<b><u>\$15,742,004</u></b>

Source: Auditor summary of selected transactions.

We also performed non-transaction-based testing to determine whether the Mid-scale RI-2 PEP UConn Health submitted for this award covered all required components and whether

<sup>6</sup> The \$15,742,004 represents the total value of the 41 transactions selected for transaction-based testing. It does not represent the dollar base of the total costs reviewed during the audit.

<sup>7</sup> The expense amounts reported represent the total dollar value of the transactions selected for our sample; they do not include the total **fringe benefits** or **indirect costs** applied to the sampled transactions. However, we tested the fringe benefits and indirect costs for **allowability**.

UConn Health appropriately estimated the full lifecycle cost for the project in a manner consistent with relevant NSF program guidance.

## AUDIT RESULTS

We questioned \$1,049 in costs UConn Health charged to NSF Award No. [REDACTED]. We also identified exceptions that did not result in **questioned costs**, but did result in non-compliance with federal and/or NSF policies. See Table 2 for a summary of questioned costs by finding area, **Appendix C** for a summary of questioned costs by NSF award, and **Appendix D** for a summary of all recommendations.

**Table 2: Summary of Questioned Costs by Finding Area**

Finding Description	Questioned Costs
Inappropriately Allocated Travel Expenses	\$1,049
Inadequately Documented Allocation Methodologies	-
Invoices Not Paid Consistent with Service Agreement	-
Non-Compliance with Mid-Scale Reporting Policy	-
<b>Total</b>	<b><u>\$1,049</u></b>

Source: Auditor summary of findings identified.

We made five recommendations for NSF’s Director of the Division of Institution and Award Support related to resolving the \$1,049 in questioned costs and ensuring UConn Health strengthens its administrative and management policies and procedures for monitoring federal funds and administering its Mid-scale RI-2 award.

We also identified two areas where UConn Health could consider improving its controls to ensure future compliance with the RI-2 Program and allowability guidance. We provided one consideration for NSF’s Director of the Division of Institution and Award Support and one consideration for NSF’s Office Head of the Research Infrastructure Office related to the two **areas for improvement**.

We communicated the results of our audit and the related findings, areas for improvement, recommendations, and considerations to UConn Health and NSF OIG. We have included UConn Health’s response to this report, in its entirety, in **Appendix A**.

### FINDING 1: INAPPROPRIATELY ALLOCATED TRAVEL EXPENSES

UConn Health did not always allocate travel expenses to NSF Award No. [REDACTED] based on the relative benefits the award received, as required per federal regulations<sup>8</sup> and NSF

<sup>8</sup> According to 2 Code of Federal Regulations (CFR) 200, Section §200.405, *Allocable costs*, if a cost benefits two or more projects or activities in proportions that can be determined without undue effort or cost, the cost must be allocated to the projects based on the proportional benefit. Further, per 2 CFR 200, Section §200.403(a), *Factors affecting allowability of costs*, except where otherwise authorized by statute, costs must meet the following general criteria in order to be allowable under federal awards: be necessary and reasonable for the performance of the federal award, be allocable thereto under these principles, and be accorded consistent treatment. In addition, 2 CFR 200, Section §200.475(a), *Travel Costs*, states that travel costs are allowable when they are specifically related to the federal award.

**Proposal and Award Policies and Procedures Guide** (PAPPG).<sup>9</sup> Specifically, in June 2022, UConn Health charged NSF Award No. [REDACTED] for \$2,945 in travel costs a UConn Health employee incurred to attend a conference that benefited two separate grants, instead of charging the \$1,896 that UConn Health identified as allocable to this award. As a result, UConn Health charged NSF Award No. [REDACTED] for \$1,049 in inappropriately allocated travel expenses.

## Conclusion

UConn Health did not have sufficient policies and procedures or internal controls in place to ensure that it reasonably allocated costs incurred based on the relative benefits NSF Award No. [REDACTED] received. Specifically, UConn Health did not perform an accurate review of the travel expenses the employee claimed to ensure the employee had appropriately allocated the expenses between the two grants that benefited from the travel, as intended. We are therefore questioning \$1,049 in inappropriately allocated travel expenses charged to NSF Award No. [REDACTED]. UConn Health has agreed to reimburse NSF for the \$1,049 in questioned costs, as illustrated in Table 3.

**Table 3: Finding 1 Summary: Inappropriately Allocated Travel Expenses**

NSF Award No.	Description	Fiscal Year(s)	Questioned Costs			UConn Health Agreed to Reimburse
			Direct	Indirect	Total	
[REDACTED]	June 2022 Travel Expenses	2022	\$640	\$409	\$1,049	\$1,049
<b>Total</b>			<u>\$640</u>	<u>\$409</u>	<u>\$1,049</u>	<u>\$1,049</u>

Source: Auditor summary of identified exception.

## Recommendations

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

- 1.1 Direct UConn Health to provide documentation supporting that it has repaid or otherwise credited the \$1,049 in questioned travel costs for which it has agreed to reimburse NSF.
- 1.2 Direct UConn Health to update policies and procedures and/or implement additional controls that require personnel to verify they allocated travel expenses in a manner that was consistent with the documented allocation methodology.

<sup>9</sup> NSF PAPPG 20-1, Part II, Chapter X, Section A, *Basic Considerations*, states that expenditures under NSF cost-reimbursement grants are governed by the federal cost principles and must conform to NSF policies where articulated in the applicable grant general terms and conditions, grant special provisions, and grantee internal policies.

**University of Connecticut Health Center Response:** UConn Health agreed with the finding, noting that it has reimbursed NSF for the questioned costs and that it will require an additional verification that allocated travel expenses are consistent with documented allocation methodologies in the future.

**Auditors' Additional Comments:** Our position regarding this finding has not changed.

## **FINDING 2: INADEQUATELY DOCUMENTED ALLOCATION METHODOLOGIES**

UConn Health did not appropriately document the methodology it used to **allocate** computer-related expenses to NSF Award No. [REDACTED] as required by federal regulations<sup>10</sup> and the NSF PAPPG.<sup>11</sup> Specifically, we identified five instances in which UConn Health did not document a justification for the methodology it used to allocate computer-related expenses to the NSF award, as illustrated in Table 4.

**Table 4: Summary of Percent Allocation Methodology Justifications**

Expense Date	Materials Purchased	Percent of Expense Allocated to the NSF Award	Documented Justification for the Percent of Expense Allocated to the NSF Award
October 2021	Computer Monitors	40%	None Provided.
December 2021	Laptop Computer	80%	None Provided.
December 2021	Laptop Computer	50%	None Provided.
December 2021	Laptop Computer	45%	None Provided.
March 2022	Desktop Computer	70%	None Provided.

*Source: Auditor summary of identified exceptions.*

### **Conclusion**

Because UConn Health did not require purchasers to document the allocation methodologies used to charge materials to this award, we compared the percentage of each expense charged to the NSF award to the percentage of effort employees who used the materials dedicated to this NSF award (when applicable) to determine if the expense percentages charged to the award appeared reasonable, as illustrated in Table 5.

<sup>10</sup> According to 2 CFR 200, Section §200.405, *Allocable costs*, (d), costs that benefit two or more projects may be allocated to the projects based on any reasonable **documented** basis. [emphasis added]

<sup>11</sup> NSF PAPPG 20-1, Part II, Chapter X, Section A, *Basic Considerations*, states that expenditures under NSF cost reimbursement grants are governed by the federal cost principles and must conform to NSF policies where articulated in the applicable grant general terms and conditions, grant special provisions, and grantee internal policies.

**Table 5: Auditor Comparison of Expense and Employee Effort Allocations**

Expense Date	Materials Purchased	Percentage of Expense Charged to NSF Award	Percentage of Employee Effort Charged to NSF Award
October 2021	Computer Monitors	40%	N/A <sup>12</sup>
December 2021	Laptop Computer	80%	100%
December 2021	Laptop Computer	50%	100%
December 2021	Laptop Computer	45%	30%
March 2022	Desktop Computer	70%	90%

Source: Auditor comparison of the allocation percentages that UConn Health used to charge computer expenses to the NSF award to the amount of effort the employees who used the computers dedicated to the award.

Because the material expenses charged to this NSF award appeared reasonable based on the comparison performed in Table 5, we are not questioning any costs associated with this finding. However, because UConn Health did not document the methodology it used to allocate these expenses to NSF Award No. [REDACTED] we are noting compliance exceptions with allocation methodologies utilized to charge these materials to this NSF award, as illustrated in Table 6.

**Table 6: Finding 2 Summary: Inadequately Documented Allocation Methodologies**

NSF Award No.	Description	Fiscal Year(s)	Questioned Costs			UConn Health Agreed to Reimburse
			Direct	Indirect	Total	
[REDACTED]	October 2021 Monitors	2022	\$0	\$0	\$0	\$0
[REDACTED]	December 2021 Laptop	2022	-	-	-	-
[REDACTED]	December 2021 Laptop	2022	-	-	-	-
[REDACTED]	December 2021 Laptop	2022	-	-	-	-
[REDACTED]	March 2022 Desktop	2022	-	-	-	-
<b>Total</b>			<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>

Source: Auditor summary of identified exceptions.

## Recommendation

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

- 2.1 Direct UConn Health to implement additional controls to ensure it adequately documents how it determined that the methodology used to charge expenses to NSF awards was consistent with the relative benefit received by the award(s) charged.

<sup>12</sup> Because UConn Health installed the sampled computer monitors in a laboratory and did not provide the monitors to specific individuals, effort allocations are not applicable.

**University of Connecticut Health Center Response:** UConn Health agreed with this finding, noting that it will update its procedures and training to ensure the methodology used to charge expenses to sponsored programs is appropriately documented in the future.

**Auditors' Additional Comments:** Our position regarding this finding has not changed.

**FINDING 3: INVOICES NOT PAID CONSISTENT WITH SERVICE AGREEMENT**

In August 2021 and July 2022, UConn Health charged NSF Award No. [REDACTED] for costs incurred for consulting services that the consultant did not bill consistent with their service agreement, as required per federal regulations.<sup>13</sup> Specifically, the consultant billed UConn Health for services at a rate of \$115 per hour, instead of using the approved rate of \$120 per hour identified in their service agreement.<sup>14</sup>

**Conclusion**

UConn Health’s invoice approval procedures did not require the invoice approver to verify that the consultant billed for services at the rate established in the relevant service agreement.

Because this exception resulted in UConn Health charging NSF Award No [REDACTED] less than the amount allowable per the service agreement, we are not questioning any costs associated with this finding. However, we are noting a compliance exception, as UConn Health could potentially overcharge NSF if invoice approvers do not ensure that consultants bill for services using rates that are consistent with approved service agreements, as illustrated in Table 7.

**Table 7: Finding 3 Summary: Invoices Not Paid Consistent with Service Agreement**

NSF Award No.	Description	Fiscal Year(s)	Questioned Costs			UConn Health Agreed to Reimburse
			Direct	Indirect	Total	
[REDACTED]	August 2021 Consultant Services	2022	\$0	\$0	\$0	\$0
[REDACTED]	July 2022 Consultant Services	2023	-	-	-	-
<b>Total</b>			<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>

Source: Auditor summary of identified exceptions.

<sup>13</sup> According to 2 CFR 200, Section §200.459, *Professional service costs*, the adequacy of the contractual agreement is relevant in determining the allowability of costs.

<sup>14</sup> The applicable UConn Health Personal Service Agreement stated that the consultant would bill for their services at a rate of \$120 per hour for a total of 223.75 hours.

## Recommendation

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

- 3.1 Direct UConn Health to implement additional controls to ensure that consultants bill—and that UConn Health pays for—professional services invoiced using rates that are consistent with the rates identified in relevant service agreements.

**University of Connecticut Health Center Response:** UConn Health agreed with this finding, noting that it has implemented an additional step to its invoice review procedures which requires the reviewer to ensure invoiced rates for consulting and professional services are consistent with the rates included in relevant service agreements.

**Auditors’ Additional Comments:** Our position regarding this finding has not changed.

### FINDING 4: NON-COMPLIANCE WITH MID-SCALE REPORTING POLICY

UConn Health did not submit its annual project reports for NSF Award No. [REDACTED] at least 90 days prior to the end of the budget period, as required per the NSF RI-2 Program Solicitation.<sup>15</sup> Specifically, UConn Health did not submit the annual report due within our audit **period of performance** (POP) by the report’s due date, as illustrated in Table 8.

**Table 8: Annual Mid-Scale RI-2 Reports Not Submitted Timely**

Reporting Period	Report Due Date	Report Submission Date	Days Late
July 1, 2021 – June 30, 2022	April 1, 2022	June 8, 2022	68 Days

Source: Auditor summary of identified exception.

## Conclusion

UConn Health relied on the Principal Investigator (PI) to submit the annual report by the due date and did not have adequate oversight or proper monitoring controls in place to verify that RI-2 programmatic reports were submitted within the time frame required per the NSF RI-2 Program Solicitation. Further, UConn Health noted that the PI discussed the reporting timeline with NSF and submitted the annual report based on that communication.

Because this instance of non-compliance did not directly result in UConn Health charging unallowable costs to the NSF award, we are not questioning any costs related to this exception. However, we are noting a compliance exception as UConn Health did not submit its annual report by the due date required per the NSF Program Solicitation, as illustrated in Table 9.

<sup>15</sup> Per Mid-scale RI-2 Program Solicitation (NSF 19-542), Section VII, C. *Reporting Requirements*, the PI must submit an annual project report to the cognizant Program Officer no later than 90 days prior to the end of the current budget period.

**Table 9: Finding 4 Summary: Non-Compliance with Mid-Scale Reporting Policy**

NSF Award No.	Compliance Exception Identified	Fiscal Year(s)
	2021 – 2022 RI-2 Annual Report Not Submitted Timely	2022

Source: Auditor summary of identified exception.

## Recommendations

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

- 4.1 Direct UConn Health to implement controls that ensure Mid-scale Program annual reports are submitted on a timely basis, as required per the Research Infrastructure 2 Program Solicitation.

**University of Connecticut Health Center Response:** UConn Health agreed with this finding and noted that it recently implemented a procedure designed to ensure RI-2 annual reports are submitted at least 90 days prior to the end of the budget period.

**Auditors’ Additional Comments:** Our position regarding this finding has not changed.

## AREA FOR IMPROVEMENT 1: LUMP-SUM SALARY PAYMENTS

UConn Health’s policies and procedures for salaries do not discuss the allowability of lump-sum payments related to the **Equity Adjusted General Wage Increase (EAGWI)** or the **Faculty Merit Plan (FMP) Pool**. UConn Health stated that the EAGWI and FMP Pool lump-sum payments, which are not included in an employee’s base salary per UConn Health’s Collective Bargaining Agreement (CBA),<sup>16</sup> are allowable as part of each employee’s institutional base salary (IBS). Although the CBA does outline how UConn Health establishes these payments, UConn Health’s salary policies do not address the allowability of the EAGWI and FMP Pool payments as part of an employee’s IBS, nor do its policies address how it ensures that it appropriately allocates these payments to sponsored projects.

## Conclusion

Because UConn Health appears to have made the lump-sum salary payments consistent with the CBA, the lump-sum salary payments were supported by annual salary agreements, and because UConn Health allocated the lump-sum salary payments to the NSF award consistent with the level of effort employees allocated to the NSF award, we did not identify a finding related to the sampled payments. However, because UConn Health has not developed institutional policies to support the allowability and allocability of these payments on sponsored projects, we identified an area for improvement.

<sup>16</sup> Per the **Collective Bargaining Agreement Between the UConn Health Board of Directors and The University of Connecticut Health Center Chapter of the American Association of University Professors** for the period from July 1, 2021, to June 20, 2024, an employee’s base salary (bSalary) is the salary the employee receives without considering salary supplements designated for specific responsibilities.

## Consideration

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

- Directing UConn Health to improve its salary policies and procedures to provide additional guidance surrounding the allowability and allocation methodologies it uses to charge Equity Adjusted General Wage Increase payments and payments made from the Faculty Merit Plan Pool to federal awards.

### **AREA FOR IMPROVEMENT 2: PEP COMPLIANCE**

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The PEP UConn Health submitted—and updated—for NSF Award No. [REDACTED] does not contain all of the information recommended per NSF's *Major Facilities Guide* (MFG) or its *Research Infrastructure Guide* (RIG),<sup>17</sup> which replaced the MFG in December 2021. Specifically, although both guides state that awardees' PEPs should include the 38 subtopics identified in Table 3.4.1, which represent the minimum PEP components required for Mid-scale RI-2 projects,<sup>18</sup> UConn Health's PEP did not include all recommended elements or provide a justification as to why the elements were not applicable or included.

#### ***UConn Health's PEP Did Not Include All Recommended Elements***

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UConn Health's PEP did not include 1 of the 38 recommended subtopics. Specifically:

- UConn Health's PEP did not include a **Segregation of Funding Plan [15.4]**.<sup>19</sup>

#### ***UConn Health's PEP Was Not Sufficiently Detailed***

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The information that UConn Health included in its PEP for 8 of the 38 recommended subtopics was not consistent with the requirements outlined in the MFG and RIG. Specifically:

- **Facility Divestment Plan [1.5]**. This section did not include an estimate of divestment liabilities.<sup>20</sup>

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<sup>17</sup> NSF's MFG and RIG contain NSF's policies regarding the planning and management of major facilities and mid-scale projects through their full lifecycle.

<sup>18</sup> Per NSF's MFG and RIG, section *Guidance for Mid-Scale Research Infrastructure Projects, Programmatic Deliverables*, the following list provides the minimum required components of the PEP for a mid-scale project: 1. Introduction; 2. Organization; 4. Construction Project Definition; 6. Risk and Opportunity Management; 8. Configuration Control; 9. Acquisitions; 10. Project Management Controls; 12. Cyber-Infrastructure; and 13. Commissioning, including Concept of Operations.

<sup>19</sup> Per Table 3.4.1 in the MFG and RIG, subtopic 15.4, *Commissioning*, the PEP should include "Financial accounting procedures for the Recipient to properly expense the activities between construction and operations funding per the Plans..."

<sup>20</sup> Per Table 3.4.1 in the MFG and RIG, subtopic 1.5, *Facility Divestment Plan*, the PEP should include an estimate of divestment liabilities at the end of the facility life.

- **Cost Book, Cost Model Data Set, and Basis of Estimate [4.7].** UConn Health’s cost estimate did not include all of the elements recommended in the Government Accountability Office’s (GAO’s) *Cost Estimating and Assessment Guide*.<sup>21</sup>
- **Baseline Schedule Estimating Plan and Integrated Schedule [4.9].** UConn Health did not develop its Earned Value Management (EVM) schedule using the best practices identified in GAO’s *Schedule Assessment Guide*.<sup>22</sup>
- **Schedule Contingency [4.10].** This section did not include UConn Health’s confidence level for its ability to meet the project end date.<sup>23</sup>
- **Contingency Management Plan [6.3].** This section did not include NSF approval requirements for cooperative agreements.<sup>24</sup>
- **Acquisition Plans [9.1].** This section did not include a time-based list of acquisitions and procurement actions.<sup>25</sup>
- **Acquisition Approval Process [9.2].** This section did not include information regarding the procurement approval process.<sup>26</sup>
- **Financial and Business Controls [10.3].** This section did not include the required description of financial and business processes and controls; it only includes information regarding who is responsible for providing oversight.<sup>27</sup>

## Conclusion

Because the NSF MFG and RIG only state that awardees should include these items in their PEPs, and because NSF approved UConn Health’s PEP, we did not note any findings related to the missing elements. However, because these guides state that PEPs should ideally

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<sup>21</sup> Per the *Guidance for Mid-Scale Research Infrastructure Projects* section of the MFG and RIG, budgets should be supported by well-documented basis of estimates developed in accordance with the best practices and 12 steps outlined in the GAO *Cost Estimating and Assessment Guide* to meet the four characteristics of a high-quality estimate: well-documented, comprehensive, accurate, and credible.

<sup>22</sup> Per the *Guidance for Mid-Scale Research Infrastructure Projects* section of the MFG and RIG, schedules should be developed following the applicable best practices outlined in the GAO *Schedule Assessment Guide*.

<sup>23</sup> Per Table 3.4.1 in the MFG and RIG, subtopic 4.10, *Schedule Contingency*, the PEP should include a project end date with contingency and should include the confidence level for meeting the project end date.

<sup>24</sup> Per Table 3.4.1 in the MFG and RIG, subtopic 6.3, *Contingency Management Plan*, the PEP should describe NSF approval requirements per cooperative agreements.

<sup>25</sup> Per Table 3.4.1 in the MFG and RIG, subtopic 9.1, *Acquisition Plans*, the PEP should describe acquisition plans, processes, subawards, and contracting strategy and provide a time-based list of acquisitions and procurement actions.

<sup>26</sup> Per Table 3.4.1 in the MFG and RIG, subtopic 9.2, *Acquisition Approval Process*, the PEP should describe the approval process for acquisitions and create a year-by-year acquisition plan of actions that are estimated to require NSF approval.

<sup>27</sup> Per Table 3.4.1 in the MFG and RIG, subtopic 10.3, *Financial and Business Controls*, the PEP should include a description of financial and business processes and controls.

contain or reference all project-related documents and should serve as a standalone source explaining how and why the project meets all requirements, we believe UConn Health could improve its PEP by including all of the information recommended per the NSF MFG and RIG.

### **Consideration**

We suggest that NSF's Office Head of the Research Infrastructure Office consider:

- Directing UConn Health to update its Project Execution Plan to include all recommended elements and/or provide justifications for any elements that UConn Health determines are not applicable.

COTTON & COMPANY ASSURANCE AND ADVISORY, LLC



Megan Mesko, CPA, CFE  
Partner  
August 4, 2023

## **APPENDIX A: UCONN HEALTH'S RESPONSE**

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July 14, 2023

Cotton & Company Assurance and Advisory, LLC  
333 John Carlyle Street, Suite 500  
Alexandria, Virginia 22314

Attention: Megan Mesko, CPA, CFE

Dear Ms. Mesko,

The University of Connecticut Health Center (UConn Health) appreciates the opportunity to work with the National Science Foundation Office of Inspector General and Cotton & Company to examine our research administration and accounting practices in relation to National Science Foundation (NSF) Award No. [REDACTED]. UConn Health takes seriously the obligation to administer awards in compliance with applicable laws, policies, and requirements.

Both internal and external audits are an integral component of UConn Health's internal controls and provide valuable feedback to management. As such, UConn Health welcomes the recommendation of the auditors to further enhance and strengthen our internal control functions.

UConn Health agrees with the findings and recommendations of the audit report and has begun implementation of enhancements to internal controls as described below.

Finding 1: Inappropriately allocated travel expenses

Response:

1.1: UConn Health has reimbursed NSF \$1,049 via ACMS draw, transaction ID 351245 dated March 7, 2023.

1.2: UConn Health will incorporate into its travel procedures for sponsored program travel an additional verification that allocated travel expenses are consistent with the documented allocated methodology. Guidance on this procedure update will be implemented by September 30, 2023.

Finding 2: Inadequately documented allocation methodologies

Response:

UConn Health will enhance procedure and training to ensure the methodology used to charge expenses to sponsored programs is appropriately documented. Guidance on this update to procedure will be implemented by September 30, 2023.

Office of the Vice President for Research  
263 Farmington Avenue  
Farmington, CT 06030-5335  
research.uconn.edu

*An Equal Opportunity Employer*

Finding 3: Invoices not paid consistent with service agreement

Response:

UConn Health has implemented an additional step to invoice review procedures to confirm that invoiced rates for consulting/ professional services are consistent with rates included in the relevant service agreements. Implemented June 29, 2023.

Finding 4: Non-compliance with mid-scale reporting policy

Response:

UConn Health has implemented a procedure to facilitate and ensure annual project reports are submitted at least 90 days prior to the end of the budget period, as required per the NSF- R1 Program Solicitation. Implemented July 11, 2023.

Sincerely,



Pamir Alpay  
Interim Vice President for Research,  
Innovation and Entrepreneurship



Jeffrey Geoghegan  
Executive Vice President for Finance  
and Chief Financial Officer

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

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## OBJECTIVES

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The NSF OIG Office of Audits engaged Cotton & Company Assurance and Advisory, LLC (herein referred to as “we”), to conduct an audit of all the costs the University of Connecticut Health Center (UConn Health) had claimed on NSF Award No. [REDACTED] as of September 30, 2022. The objectives of the audit included:

- Evaluating UConn Health’s award management environment to determine whether UConn Health was capable of adhering to award-specific terms and conditions, as well as the requirements of the *Uniform Guidance* and general award terms and conditions.
- Determining if the costs claimed on the award were allocable, allowable, reasonable, and in conformance with NSF award terms and conditions and applicable federal financial assistance requirements.
- Determining whether UConn Health complied with NSF’s Mid-scale Research Infrastructure (RI)-2 Program Solicitation (NSF 19-542) and other applicable Mid-scale program requirements within NSF’s *Major Facilities Guide* (MFG) (NSF 19-68) and *Research Infrastructure Guide* (RIG) (21-107), such as developing a Project Execution Plan (PEP).

## SCOPE

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The audit population included approximately \$18.4 million UConn Health claimed on NSF Award No. [REDACTED] in NSF’s Award Cash Management Service (ACM\$) from the award’s inception date through September 30, 2022.

## METHODOLOGY

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After obtaining NSF OIG’s approval for our audit plan, we performed each of the approved audit steps. Generally, these steps included:

- Assessing the reliability of the general ledger data UConn Health provided by comparing the costs charged to NSF awards per UConn Health’s accounting records to the reported net expenditures reflected in the ACM\$ drawdown requests.
  - Our work required us to rely on computer-processed data obtained from UConn Health and NSF OIG. NSF OIG provided award data that UConn Health reported through ACM\$ during our audit period.
    - We assessed the reliability of the general ledger data UConn Health provided by: (1) comparing the costs charged to NSF awards per UConn Health’s accounting records to the reported net expenditures reflected in the ACM\$ drawdown requests UConn Health submitted to NSF during the audit’s period of performance (POP), and (2) reviewing the parameters UConn Health used to extract transaction data from its accounting system. As we did not identify any

discrepancies in the data provided, we found UConn Health's computer-processed data to be sufficiently reliable for the purposes of the audit.

- We found NSF's computer-processed data to be sufficiently reliable for the purposes of this audit. We did not review or test whether the data contained in NSF's databases or the controls over NSF's databases were accurate or reliable; however, the independent auditor's report on NSF's financial statements for fiscal year (FY) 2021 found no reportable instances in which NSF's financial management systems did not substantially comply with applicable requirements.
- UConn Health provided detailed transaction-level data to support the \$18,368,890 it claimed in ACM\$ for the award during the audit period. This data resulted in a total audit universe of \$18,368,890 in expenses claimed on NSF Award No. [REDACTED]
- Obtaining and reviewing all available accounting and administrative policies and procedures, external audit reports, desk review reports, and other relevant information UConn Health and NSF OIG provided, as well as any other relevant information that was available online.
- Summarizing our understanding of federal, NSF, Mid-scale RI-2 award, and UConn Health-specific policies and procedures surrounding costs budgeted for—or charged to—NSF awards and identifying the controls in place to ensure that costs charged to the Mid-scale RI-2 award were reasonable, allocable, and allowable.
  - In planning and performing this audit, we considered UConn Health's internal controls, within the audit's scope, solely to understand the directives or policies and procedures UConn Health has in place to ensure that charges against NSF awards complied with relevant federal regulations, NSF award terms, RI Program requirements, and UConn Health policies.
- Designing and executing tests that allowed our team to determine whether the Mid-scale RI PEP covered all required components and whether UCONN appropriately estimated the full lifecycle cost for the project consistent with NSF's MFG (NSF 19-68), RIG (21-107), and RI-2 Program Solicitation (NSF 19-542) applicable to the sampled NSF award.
- Providing UConn Health with a list of 41 transactions that we selected based on the results of our data analytics and requesting that UConn Health provide documentation to support each transaction.
- Reviewing the supporting documentation UConn Health provided and requesting additional documentation as necessary to ensure we obtained sufficient,

appropriate evidence to assess the allowability of each sampled transaction under relevant federal,<sup>28</sup> NSF,<sup>29</sup> and UConn Health policies.<sup>30</sup>

- Holding virtual interviews and walkthroughs with UConn Health in January 2023 to discuss the PEP, payroll (including effort reporting), fringe benefits, travel, equipment, procurement, other direct costs (e.g., patent, relocation, recruiting, interest, advertising/public relations, entertainment, fundraising, lobbying, selling/marketing, and training costs), and other general policies in place to ensure compliance with relevant NSF terms and conditions (e.g., programmatic reporting, supplemental funding requests, changes in scope, cost transfers, record retention, whistle-blower information, research misconduct, and conflict of interest policies).

At the conclusion of our fieldwork, we provided a summary of our results to NSF OIG personnel for review. We also provided the summary to UConn Health personnel to ensure that UConn Health was aware of each of our findings and that it did not have additional documentation to support the questioned costs.

We conducted this performance audit in accordance with *Generally Accepted Government Auditing Standards* (GAGAS) issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

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<sup>28</sup> We assessed UConn Health's compliance with 2 Code of Federal Regulations (CFR) Part 200, Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards; 2 CFR Part 215, Uniform Administrative Requirements for Grants and Agreements with Institutions of Higher Education, Hospitals, and Other Non-Profit Organizations; and 2 CFR Part 230, Cost Principles for Non-Profit Organizations (Office of Management and Budget Circular A-122), as appropriate.

<sup>29</sup> We assessed UConn Health's compliance with NSF Proposal and Award Policies and Procedures Guides (PAPPGs) 20-1 and 22-1, NSF's MFG (NSF 19-68) and Mid-scale RI-2 Program Solicitation (NSF 19-542), and NSF award-specific terms and conditions, as appropriate.

<sup>30</sup> We assessed UConn Health's compliance with its internal policies and procedures surrounding costs budgeted for or charged to NSF awards.

## **APPENDIX C: SUMMARY OF QUESTIONED COSTS**

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**Appendix C, Table 1: Schedule of Questioned Costs by Finding**

Finding	Description	Questioned Costs		Total
		<i>Unsupported</i>	<i>Unallowable</i>	
1	Inappropriately Allocated Travel Expenses	\$0	\$1,049	\$1,049
2	Inadequately Documented Allocation Methodologies	-	-	-
3	Invoices Not Paid Consistent with Service Agreement	-	-	-
4	Non-Compliance with Mid-Scale Reporting Policy	-	-	-
<b>Total</b>		<b><u>\$0</u></b>	<b><u>\$1,049</u></b>	<b><u>\$1,049</u></b>

Source: Auditor summary of questioned costs by finding.

**Appendix C, Table 2: Summary of Questioned Costs by NSF Award Number**

NSF Award No.	No. of Transaction Exceptions	Questioned Direct Costs	Questioned Indirect Costs	Questioned Total	UCONN Agreed to Reimburse
	8	\$640	\$409	\$1,049	\$1,049
<b>Total</b>	<u>8</u>	<u>\$640</u>	<u>\$409</u>	<u>\$1,049</u>	<u>\$1,049</u>

*Source:* Auditor summary of questioned costs by NSF award number.

**Appendix C, Table 3: Summary of Questioned Costs by NSF Award Number and Expense Description**

	NSF Award No.	Expense Description	Questioned Direct Costs	Questioned Indirect Costs	Total Questioned Costs	UConn Health Agreed to Reimburse
1) Inappropriately Allocated Expenses	██████	Travel Expenses	\$640	\$409	\$1,049	\$1,049
2) Lack of Documented Allocation Methodology	██████	Computer Monitors	-	-	-	-
	██████	Laptop Computer	-	-	-	-
	██████	Laptop Computer	-	-	-	-
	██████	Laptop Computer	-	-	-	-
3) Invoices Not Paid Consistent with Service Agreement	██████	Desktop Computer	-	-	-	-
	██████	Consultant Services	-	-	-	-
3) Invoices Not Paid Consistent with Service Agreement	██████	Consultant Services	-	-	-	-
	██████	Consultant Services	-	-	-	-
4) Non-Compliance with Mid-Scale Reporting Policy	██████	2021 – 2022 RI-2 Annual Report Not Submitted Timely	-	-	-	-
<b>Total</b>			<u>\$640</u>	<u>\$409</u>	<u>\$1,049</u>	<u>\$1,049</u>

Source: Auditor summary of identified exceptions.

## **APPENDIX D: SUMMARY OF RECOMMENDATIONS AND CONSIDERATIONS**

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

- 1.1 Direct UConn Health to provide documentation supporting that it has repaid or otherwise credited the \$1,049 in questioned travel costs for which it has agreed to reimburse NSF.
- 1.2 Direct UConn Health to implement additional controls that require personnel to verify they allocated travel expenses in a manner that was consistent with the documented allocation methodology.
- 2.1 Direct UConn Health to implement additional controls to ensure it adequately documents how it determined that the methodology used to charge expenses to NSF awards was consistent with the relative benefit received by the award(s) charged.
- 3.1 Direct UConn Health to implement additional controls to ensure that consultants bill—and that UConn Health pays for—professional services invoiced using rates that are consistent with the rates identified in relevant service agreements.
- 4.1 Direct UConn Health to implement controls that ensure Mid-scale Program annual reports are submitted on a timely basis, as required per the Research Infrastructure 2 Program Solicitation.

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

- Directing UConn Health to improve its salary policies and procedures to provide additional guidance surrounding the allowability and allocation methodologies it uses to charge Equity Adjusted General Wage Increase payments and payments made from the Faculty Merit Plan Pool to federal awards.

Additionally, we suggest that NSF's Office Head of the Research Infrastructure Office consider:

- Directing UConn Health to update its Project Execution Plan to include all recommended elements and/or provide justifications for any elements that UConn Health determines are not applicable.

## **APPENDIX E: GLOSSARY**

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**Allocable cost.** A cost is allocable to a particular federal award or other cost objective if the goods or services involved are chargeable or assignable to that federal award or cost objective in accordance with relative benefits received. This standard is met if the cost:

- (a) Is incurred specifically for the federal award.
- (b) Benefits both the federal award and other work of the non-federal entity and can be distributed in proportions that may be approximated using reasonable methods.
- (c) Is necessary to the overall operation of the non-federal entity and is assignable in part to the federal award in accordance with the principles in this subpart. (2 CFR § 200.405).

**Return to the term's initial use.**

**Allocation.** *Allocation* means the process of assigning a cost, or a group of costs, to one or more cost objective(s), in reasonable proportion to the benefit provided or other equitable relationship. The process may entail assigning a cost(s) directly to a final cost objective or through one or more intermediate cost objectives. (2 CFR § 200.4).

**Return to the term's initial use.**

**Factors affecting allowability of costs.** The tests of allowability of costs under these principles are: they must be reasonable; they must be allocable to sponsored agreements under the principles and methods provided herein; they must be given consistent treatment through application of those generally accepted accounting principles (GAAP) appropriate to the circumstances; and they must conform to any limitations or exclusions set forth in these principles or in the sponsored agreement as to types or amounts of cost items. (2 CFR 220, Appendix A, Section C.2.) and (2 CFR § 200.403).

**Return to the term's initial use.**

**Allowable cost.** Except where otherwise authorized by statute, costs must meet the following general criteria in order to be allowable under federal awards:

- (a) Be necessary and reasonable for the performance of the federal award and be allocable thereto under these principles.
- (b) Conform to any limitations or exclusions set forth in these principles or in the federal award as to types or amount of cost items.
- (c) Be consistent with policies and procedures that apply uniformly to both federally-financed and other activities of the non-federal entity. (2 CFR § 200.403).

**Return to the term's initial use.**

**Area for Improvement.** For the purposes of this report, an area for improvement represents a condition that does not constitute the grantee's non-compliance but warrants the attention of the grantee and NSF management.

**Return to the term's initial use.**

**Equity Adjusted General Wage Increase (EAGWI).** A wage increase beyond an employee's base salary (bSalary) that UConn HC bargaining unit faculty members are eligible for in each fiscal year. (UConn HC [CBA](#), Section 14.3).

[Return to the term's initial use.](#)

**Faculty Merit Plan (FMP) Pool.** A pool of funding that is distributed to all faculty members who are not enrolled in the alternative bonus plan and who have an academic merit rating of acceptable or above are eligible to receive bonuses from during each fiscal year. (UConn HC [CBA](#), Section 14.4).

[Return to the term's initial use.](#)

**Fringe Benefits.** Allowances and services provided by employers to their employees as compensation in addition to regular salaries and wages. Fringe benefits include, but are not limited to, the costs of leave (vacation, family-related, sick, or military), employee insurance, pensions, and unemployment benefit plans. (2 CFR § 200.431).

[Return to the term's initial use.](#)

**Indirect (F&A) Costs.** This refers to those costs incurred for a common or joint purpose benefitting more than one cost objective, and not readily assignable to the cost objectives specifically benefitted, without effort disproportionate to the results achieved. To facilitate equitable distribution of indirect expenses to the cost objectives served, it may be necessary to establish a number of pools of indirect (F&A) costs. Indirect (F&A) cost pools must be distributed to benefitted cost objectives on bases that will produce an equitable result in consideration of relative benefits derived. (2 CFR § 200.56).

[Return to the term's initial use.](#)

**Mid-scale RI-1.** This program supports either the design or implementation of unique and compelling RI projects. Mid-scale implementation projects may include any combination of equipment, instrumentation, cyberinfrastructure, broadly used large scale datasets and the personnel needed to successfully commission the project. The total cost of current Mid-scale RI-1 projects range from \$400,000 to \$20 million. (NSF 22-637).

[Return to the term's initial use.](#)

**Mid-scale RI-2.** This program emphasizes projects that have strong scientific merit, respond to an identified need of the research community, demonstrate technical and managerial readiness for implementation, include a well-developed plan for student training in the design and implementation of mid-scale research infrastructure, and involve a diverse workforce in mid-scale facility development, and/or associated data management. The total cost of current Mid-scale RI-2 projects range from \$20 million to \$100 million. (NSF 23-570).

[Return to the term's initial use.](#)

**Period of Performance (POP).** The time during which the non-federal entity may incur new obligations to carry out the work authorized under the federal award. The federal awarding agency or pass-through entity must include start and end dates of the POP in the federal award. (2 CFR § 200.77).

[Return to the term's initial use.](#)

**Proposal & Award Policies & Procedures Guide (PAPPG).** Comprises documents relating to NSF's proposal and award process for the assistance programs of NSF. The PAPPG, in conjunction with the applicable standard award conditions incorporated by reference in award, serve as the NSF's implementation of 2 CFR § 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards*. If the PAPPG and the award conditions are silent on a specific area covered by 2 CFR § 200, the requirements specified in 2 CFR § 200 must be followed. (NSF PAPPG 22-1).

[Return to the term's initial use.](#)

**Questioned Cost** A cost that is questioned by the auditors because of an alleged violation of a provision of a law, regulation, contract, grant, cooperative agreement, or other agreement or document governing the expenditure of funds; a finding that, at the time of the audit, such cost is not supported by adequate document; or a finding that the expenditure of funds for the intended purpose is unnecessary or unreasonable. (2 CFR 200.1).

[Return to the term's initial use.](#)

**Reasonable Cost.** A reasonable cost is a cost that, in its nature and amount, does not exceed that which would have been incurred by a prudent person under the circumstances prevailing at the time the decision to incur the cost was made. (2 CFR § 200.404).

[Return to the term's initial use.](#)

**Research Infrastructure (RI).** NSF defines RI as any combination of facilities, equipment, instrumentation, or computational hardware or software, and the necessary human capital in support of the same. (NSF 19-68 and 21-107, Section 1.4.1).

[Return to the term's initial use.](#)

**Unsupported Cost.** A cost that is questioned because the auditors found that, at the time of the audit, such cost is not supported by adequate documentation. Unsupported Cost is a subset of and included in **Questioned Costs**. (2 CFR 200.1).

[Return to the term's initial use.](#)



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- Mail: 2415 Eisenhower Avenue, Alexandria, VA 22314 ATTN: OIG HOTLINE

### National Defense Authorization Act (NDAA) General Notification

Pursuant to Pub. L. No. 117-263, § 5274, business entities and non-governmental organizations specifically identified in this report have 30 days from the date of report publication to review this report and submit a written response to NSF OIG **that clarifies or provides additional context** for each instance within the report in which the business entity or non-governmental organizations is specifically identified. Responses that conform to the requirements set forth in the statute will be attached to the final, published report.

If you find your business entity or non-governmental organization was specifically identified in this report and wish to submit comments under the above-referenced statute, please send your response, within 30 days of the publication date of this report, to **[OIGPL117-263@nsf.gov](mailto:OIGPL117-263@nsf.gov)**, no later than September 22, 2023. We request that comments be in .pdf format, be free from any proprietary or otherwise sensitive information, and not exceed 2 pages. Please note, a response that does not satisfy the purpose set forth by the statute will not be attached to the final report.