



Request this document in an accessible format by visiting [nsf.gov/accessibility](https://www.nsf.gov/accessibility)

NATIONAL SCIENCE FOUNDATION
Division of Institution & Award Support

2415 Eisenhower Avenue
Alexandria, VA 22314
(703) 292-8244

May 11, 2023

Stephen Murphy
VP for Finance & CFO
Yale University
P.O. Box 208304
New Haven, CT 06302

Reference: OIG Report No. 20-1-007

Dear Stephen Murphy,

The National Science Foundation (NSF) has completed the review and resolution of the Office of Inspector General (OIG) audit report on costs incurred under NSF awards by Yale University (Yale) during the period of February 1, 2016 through January 31, 2019.

The audit report identified a total of \$251,973 in questioned costs claimed on NSF awards and recommended that Yale strengthen its administrative and management controls over the areas in which findings and questioned costs were identified. NSF sustains \$188,817 of the questioned costs identified; however, based on alternative documentation reviewed and accepted during resolution, NSF will require repayment of only \$172,213. The table below summarizes the sustained, allowed, and disallowed costs by finding number:

Finding	Audit Report Description	Questioned	Sustained	Allowed	Disallowed
1	Unallowable Expenses	\$108,144	\$107,075	\$1,069	\$107,075
2	Inappropriately Allocated Expenses	\$83,309	\$24,732	\$58,577	\$24,732
3	Professional Services Agreement Not Appropriately Executed	\$39,850	\$39,850	\$16,604	\$23,246
4	Internal Service Provider Rates Not Appropriately Billed	\$15,252	\$11,742	\$3,510	\$11,742
5	Indirect Costs Not Appropriately Applied	\$5,418	\$5,418	\$0	\$5,418
TOTALS		\$251,973	\$188,817	\$79,760	\$172,213

To resolve the audit findings and questioned costs, NSF conducted detailed reviews of applicable Federal and NSF requirements, proposal and award information maintained by the Agency, and documentation provided by Yale. The attached Schedule of Sustained, Allowed and Disallowed Costs and the summary below provides the bases for the management decisions reached by NSF:

- **Finding 1: Unallowable Expenses**

NSF partially sustains the finding. Based on Yale's concurrence, NSF determined to sustain and disallow the \$81,993 that Yale agreed to repay. Based on NSF's review of documentation related to summer salaries, NSF determined to sustain and disallow \$25,082 that were not in compliance with Yale's internal policy. Based on NSF's review of documentation related to a banner, NSF determined that it was a reasonable expense to promote awareness by attendees at various conferences and workshops and determined to allow \$1,069. **NSF's management decision is to sustain and disallow \$107,075 and to allow \$1,069.**

Corrective Action: Yale has provided evidence of \$53,458 in repayment. NSF requires that Yale repay the remaining disallowed costs of \$53,617.

Compliance and Internal Control Recommendations: NSF has determined that corrective actions taken by Yale are responsive to the recommendations to enhance internal controls over participant support costs; approval of summer effort; control over duplicate expenses; approval of travel expense reports; enhanced travel policies; approval of other direct costs; and, approval of publication costs.

Final action will be complete upon repayment of \$53,617.

- **Finding 2: Inappropriately Allocated Expenses**

NSF partially sustains the finding. Based on Yale's concurrence, NSF determined to sustain and disallow the \$24,732 that Yale agreed to repay. Based on review of documentation during resolution, NSF determined that the lasers were calibrated specifically for the NSF research and that no other research performed at the time of purchase could have benefited from the lasers without re-calibration; therefore, 100% of the cost of the lasers is allocable to the respective NSF awards. NSF determined to allow \$58,577. **NSF's management decision is to sustain and disallow \$24,732 and to allow \$58,577.**

Corrective Action: Yale has provided evidence of \$24,732 in repayment.

Compliance and Internal Control Recommendations: NSF has determined that corrective actions taken by Yale are responsive to the recommendations to enhance internal controls over approval of equipment and material purchases near award expiration; strengthen allocation method to charge equipment, materials/supplies, travel, and other direct costs; approval of publication costs; and, approval of travel expense reports.

NSF considers Finding 2 resolved and closed.

- **Finding 3: Professional Services Agreement Not Appropriately Executed**

NSF sustains the finding. Yale did not follow its procurement policy. Rather than: (1) rejecting the invoice when it was presented for payment; (2) requiring that the value for services received go through a ratification process, and (3) properly procuring the remaining services, Yale approved and paid a three-year prepayment invoice. The finding is sustained because a Professional Services Agreement (PSA) was not in place when the invoice was paid. However, NSF determined to allow \$16,604 for services received after the execution of a PSA and to disallow \$23,246. **NSF's management decision is to sustain \$39,850, disallow \$23,246, and to allow \$16,604.**

Corrective Action: NSF requires that Yale repay the disallowed costs of \$23,246.

Compliance and Internal Control Recommendation: NSF has determined that corrective actions taken by Yale are responsive to the recommendation to enhance internal controls over the execution of professional services and consulting agreements.

Final action will be complete upon repayment of \$23,246.

- **Finding 4: Internal Service Provider Rates Not Appropriately Billed and Supported**

NSF partially sustains the finding. Yale did not comply with its policy to annually develop and review a schedule of rates and charges for all users of its University Services Providers. Based on Yale's concurrence, NSF determined to sustain and disallow \$2,397 that Yale agreed to repay. Based on the review of documentation related to the remaining questioned costs of \$12,855, NSF determined that only \$3,510 was based on formal rate schedules and determined to sustain and disallow \$9,345. **NSF's management decision is to sustain and disallow \$11,742 and to allow \$3,510.**

Corrective Action: Yale has provided evidence of \$2,397 in repayment. NSF requires that Yale repay the remaining disallowed costs of \$9,345.

Compliance and Internal Control Recommendation: NSF has determined that corrective actions taken by Yale are responsive to the recommendation to strengthen processes and procedures over internal service provider billings, development of rate sheets, and invoicing.

Final action will be complete upon repayment of \$9,345.

- **Finding 5: Indirect Costs Not Appropriately Applied**

NSF sustains the finding. **Based on Yale's concurrence, it is NSF's management decision to sustain and disallow the \$5,418 of questioned costs.**

Corrective Action: Yale has provided evidence of \$5,418 in repayment.

Compliance and Internal Control Recommendation: NSF has determined that corrective actions taken by Yale are responsive to the recommendation to strengthen internal controls so that indirect costs are not applied to capital expenditures.

NSF considers Finding 5 resolved and closed.

- **Finding 6: Accounting System Unable to Adequately Identify Expenses Related to Costs Drawn Down in ACM\$**

NSF sustains the finding. Yale was unable to adequately identify the source and application of the funds it drew from ACM\$ during the audit period.

Compliance and Internal Control Recommendation: NSF has determined the condition related only to Yale's legacy system and that its current invoice billing process fully addresses the recommendation.

NSF considers Finding 6 resolved and closed.

- **Finding 7: Incorrect Application of Provisional/Final Indirect Cost Rates**

NSF sustains the finding. According to 2 CFR 200, Appendix III, Section C.7, federal agencies must use the negotiated rates in effect at the time of the initial award throughout the life of the federal award for Institutions of Higher Education. However, per 2 CFR 200, Appendix III, Section C.7, provisional rates are not considered negotiated rates. The instances cited in the audit report were cases where the negotiated rate agreements at the time of the awards only established provisional rates for the awarded periods of performances. Therefore, there were no negotiated rates in effect at the time of the awards. Yale must wait until the next negotiated rate agreements are issued to determine if rate(s) are established for all or part of the awarded periods of performance. When a

rate(s) is established for all or part of the period of performance, that rate agreement is applied as if it were the rate agreement in effect at the time of the award.

Compliance and Internal Control Recommendation: NSF has determined that corrective actions taken by Yale are responsive to the recommendation to update its practices for establishing indirect cost rates awarded during provisional rate periods.

NSF considers Finding 7 resolved and closed.

- **Finding 8: Non-Compliance with Yale Policies**

NSF sustains the finding. The auditors found that Yale did not always comply with, or document compliance with, its internal policies and procedures for travel, effort reporting, salary, subawards, or procurement.

Compliance and Internal Control Recommendations: NSF has determined that corrective actions taken by Yale are responsive to the recommendations to strengthen its processes and procedures over travel, effort reporting, salary, subawards, and procurement.

NSF considers Finding 8 resolved and closed.

Based on the above, the total disallowed amount is \$172,213. Yale has provided NSF evidence of \$86,005 in repayments. **Repayment of the remaining \$86,208 must be made via www.pay.gov.** Please reference OIG Audit Report No. 20-1-007. Any necessary adjustments to ACM\$ as a result of the repayment will be made by the NSF Division of Financial Management (DFM). **Repayment of disallowed costs must be received no later than 90 days from the date of this letter, or August 9, 2023. Failure to provide timely repayment may result in DFM initiating formal collection through the Department of Treasury, Debt Management Services.**

Please be aware that Yale's right to appeal cost disallowances by NSF is outlined in Chapter XII.B of the NSF Proposal and Award Policies and Procedures Guide (PAPPG), which may be found online at: https://www.nsf.gov/publications/pub_summ.jsp?ods_key=pappg. **An appeal must be filed within 30 days from the date of this letter, or June 10, 2023.**

NSF considers all audit report findings and questioned costs resolved. Upon verification that repayment of all disallowed costs has been completed, the audit report will be fully closed out by NSF.

Yale's timely responses and full cooperation with the NSF audit resolution process have been greatly appreciated. Should you have any questions regarding this letter or the NSF audit resolution process, please contact me at 703-292-4579.

Sincerely,

Carrie Davison

Carrie Davison, Senior Cost Analyst
Resolution and Advanced Monitoring Branch
Division of Institution and Award Support

Attachment: Schedule of Sustained, Allowed, and Disallowed Costs

Attachment 1: Schedule of Sustained, Allowed, and Disallowed Costs

Yale University

OIG 20-1-007

						REPAYMENTS		Notes
Finding	Audit Report Description	Questioned	Sustained	Allowed	Disallowed	Repaid	To Repay via pay.gov	
1	Unallowable Expenses							
	Unallowable Use of Participant Support Costs							
1.2	Award No. 1558568	\$ 27,523	\$ 27,523	\$ -	\$ 27,523		\$ 27,523	1
1.2	Award No. 1317976	\$ 154	\$ 154	\$ -	\$ 154	\$ 154	\$ -	1
	Unallowable Salary Expenses							
1.1	Award No. 1607101	\$ 25,082	\$ 25,082	\$ -	\$ 25,082	\$ -	\$ 25,082	2
	Unallowable Airfare Expenses							
1.2	Award No. 1339637	\$ 2,578	\$ 2,578	\$ -	\$ 2,578	\$ 2,578	\$ -	1
1.2	Award No. 1463897	\$ 1,866	\$ 1,866	\$ -	\$ 1,866	\$ 1,866	\$ -	1
1.2	Award No. 1644701	\$ 949	\$ 949	\$ -	\$ 949		\$ 949	1
1.2	Award No. 1459158	\$ 2,865	\$ 2,865	\$ -	\$ 2,865	\$ 2,865	\$ -	1
1.2	Award No. 1565310	\$ 9,804	\$ 9,804	\$ -	\$ 9,804	\$ 9,804	\$ -	1
1.2	Award No. 1456134	\$ 1,881	\$ 1,881	\$ -	\$ 1,881	\$ 1,881		1
	Unallowable Duplicate Expenses							
1.2	Award No. 1350046	\$ 81	\$ 81	\$ -	\$ 81	\$ 81		1
1.2	Award No. 1542815	\$ 2,423	\$ 2,423	\$ -	\$ 2,423	\$ 2,423	\$ -	1
1.2	Award No. 1828190	\$ 544	\$ 544	\$ -	\$ 544	\$ 544	\$ -	1
1.2	Award No. 1248100	\$ 10,490	\$ 10,490	\$ -	\$ 10,490	\$ 10,490	\$ -	1
	Unallowable Travel Expenses							
1.2	Award No. 1564385	\$ 9,241	\$ 9,241	\$ -	\$ 9,241	\$ 9,241	\$ -	1
1.2	Award No. 1464866	\$ 1,210	\$ 1,210	\$ -	\$ 1,210	\$ 1,210	\$ -	1
1.2	Award No. 1605178	\$ 3,256	\$ 3,256	\$ -	\$ 3,256	\$ 3,256	\$ -	1
1.2	Award No. 1644701	\$ 63	\$ 63	\$ -	\$ 63		\$ 63	1
	Unallowable Other Expenses							
1.2	Award No. 1339637	\$ 3,177	\$ 3,177	\$ -	\$ 3,177	\$ 3,177	\$ -	1
1.1	Award No. 1339637	\$ 1,069	\$ -	\$ 1,069	\$ -	\$ -	\$ -	3
1.2	Award No. 1350046	\$ 262	\$ 262	\$ -	\$ 262	\$ 262		1
1.2	Award No. 1660648	\$ 3,626	\$ 3,626	\$ -	\$ 3,626	\$ 3,626	\$ -	1
	Subtotal Finding 1	\$ 108,144	\$ 107,075	\$ 1,069	\$ 107,075	\$ 53,458	\$ 53,617	
2	Inappropriately Allocated Expenses							
2.1	Award No. 1436268	\$ 20,166	\$ -	\$ 20,166	\$ -	\$ -	\$ -	4
2.1	Award No. 1205307	\$ 38,411	\$ -	\$ 38,411	\$ -	\$ -	\$ -	5
2.2	Award No. 1150826	\$ 1,209	\$ 1,209	\$ -	\$ 1,209	\$ 1,209	\$ -	1
2.2	Award No. 1622389	\$ 2,086	\$ 2,086	\$ -	\$ 2,086	\$ 2,086		1
2.2	Award No. 1413096	\$ 5,439	\$ 5,439	\$ -	\$ 5,439	\$ 5,439		1
2.2	Award No. 1740549	\$ 6,657	\$ 6,657	\$ -	\$ 6,657	\$ 6,657	\$ -	1
2.2	Award No. 1521523	\$ 4,655	\$ 4,655	\$ -	\$ 4,655	\$ 4,655	\$ -	1
2.2	Award No. 1301798	\$ 2,775	\$ 2,775	\$ -	\$ 2,775	\$ 2,775	\$ -	1
2.2	Award No. 1465100	\$ 1,605	\$ 1,605	\$ -	\$ 1,605	\$ 1,605	\$ -	1
2.2	Award No. 1811740	\$ 306	\$ 306	\$ -	\$ 306	\$ 306	\$ -	1
	Subtotal Finding 2	\$ 83,309	\$ 24,732	\$ 58,577	\$ 24,732	\$ 24,732	\$ -	1
3	Professional Services Agreement Not Appropriately Executed							
	Award No. 1521523	\$ 39,850	\$ 39,850	\$ 16,604	\$ 23,246	\$ -	\$ 23,246	6
	Subtotal Finding 3	\$ 39,850	\$ 39,850	\$ 16,604	\$ 23,246	\$ -	\$ 23,246	
4	Internal Service Provider Rates Not Appropriately Billed							
4.1	Award No. 1119826	\$ 166	\$ 166	\$ -	\$ 166	\$ -	\$ 166	7
4.1	Award No. 1258654	\$ 64	\$ 64	\$ -	\$ 64	\$ -	\$ 64	7
4.1	Award No. 1403224	\$ 1,795	\$ 815	\$ 980	\$ 815	\$ -	\$ 815	7
4.1	Award No. 1457995	\$ 1,999	\$ 1,640	\$ 359	\$ 1,640	\$ -	\$ 1,640	7
4.1	Award No. 1462439	\$ 3,965	\$ 1,794	\$ 2,171	\$ 1,794	\$ -	\$ 1,794	7
4.1	Award No. 1561143	\$ 938	\$ 938	\$ -	\$ 938	\$ -	\$ 938	7
4.1	Award No. 1565310	\$ 451	\$ 451	\$ -	\$ 451	\$ -	\$ 451	7
4.1	Award No. 1605178	\$ 3,477	\$ 3,477	\$ -	\$ 3,477	\$ -	\$ 3,477	7
4.2	Award No. 1119826	\$ 1,761	\$ 1,761	\$ -	\$ 1,761	\$ 1,761		1
4.2	Award No. 1351443	\$ 412	\$ 412	\$ -	\$ 412	\$ 412		1
4.2	Award No. 1610827	\$ 165	\$ 165	\$ -	\$ 165	\$ 165		1
4.2	Award No. 1354053	\$ 59	\$ 59	\$ -	\$ 59	\$ 59		1
	Subtotal Finding 4	\$ 15,252	\$ 11,742	\$ 3,510	\$ 11,742	\$ 2,397	\$ 9,345	
5	Indirect Costs Not Appropriately Applied							

						REPAYMENTS	
Finding	Audit Report Description	Questioned	Sustained	Allowed	Disallowed	Repaid	To Repay via pay.gov
	Award No. 1438564	\$ 5,418	\$ 5,418	\$ -	\$ 5,418	\$ 5,418	
	Subtotal Finding 5	\$ 5,418	\$ 5,418	\$ -	\$ 5,418	\$ 5,418	
TOTALS		\$ 251,973	\$ 188,817	\$ 79,760	\$ 172,213	\$ 86,005	\$ 86,208

Notes
1

1. Yale agreed to repay questioned costs.
2. Award 1607101; QC \$25,082: Federal policy requires compliance with the non-Federal entity’s policies at 2 CFR 200.403. NSF’s management decision is to sustain and disallow the questioned cost because of Yale’s failure to obtain the Provost Office approval, as required by Yale’s internal policies.
3. Award 1339637; QC \$1,069: NSF has determined that the MoDRN banner was a necessary supply to support the dissemination of research supported by the NSF grant at conferences and workshops. NSF’s management decision is to allow the questioned cost.
4. Award 1436268; QC \$20,166: NSF has determined that the laser was specifically calibrated to perform the NSF research and no other research performed at the time of the purchase could benefit from the laser. Therefore, 100% of the cost of the laser is allocable to the NSF award. NSF’s management decision is to allow the questioned cost.
5. Award 1205307; QC \$38,411: NSF has determined that the laser was specifically calibrated to perform the NSF research and no other research performed at the time of the purchase could benefit from the laser. Therefore, 100% of the cost of the laser is allocable to the NSF award. NSF’s management decision is to allow the questioned cost.
6. Award 1521523; QC \$39,850: Yale did not follow its procurement policy. Rather than: (1) rejecting the invoice when it was presented for payment; (2) requiring that the value for services received go through a ratification process, and (3) properly procuring the remaining services, Yale approved and paid the invoice. NSF does not agree that the execution of a sole source document and a Professional Services Agreement (PSA) corrects the allowability of the transaction. Federal policy requires compliance with the non-Federal entity’s policies at 2 CFR 200.403. Because a PSCA was not in place when the invoice was paid, NSF has determined to sustain the questioned costs. However, since the NSF award benefited from the services received and a Professional Services Agreement was signed by Yale on 8/28/2019, NSF will allow costs for the 15-month period 9/1/2019 to 11/30/20 calculated as $(15/36) \times (\$39,850) = \$16,604$. It is NSF’s management decision to allow \$16,604 and to disallow \$23,246.
7. 8 Awards; QC \$12,855: Per Yale’s response to the draft audit report concerning Storage@Yale, the initial FY17 rate (7/1/2016 to 6/30/2017) was calculated in April 2016 and provided to the relevant University office at that time. This appears to be consistent with Yale’s policy. Accordingly, NSF has determined to allow the questioned costs for Storage@Yale with accounting dates prior to July 1, 2017, in the amount of \$3,510. Regarding the remaining questioned costs, Yale failed to comply with its Policy 1410.4 which states that Internal Service Providers (ISP) must annually develop a schedule of rates and charges for all users of the ISP’s goods and services and to submit the rates to a designated central office for review. Notwithstanding that retroactive rate analyses were conducted as a result of the audit, the rates charged to NSF awards were not based on formal rate schedules. It is NSF’s management decision to allow \$3,510 and to disallow \$9,345.