

Performance Audit of Incurred Costs – Montana State University

REPORT PREPARED BY SIKICH CPA LLC





At a Glance

Performance Audit of Incurred Costs – Montana State University
OIG 24-1-006 | January 31, 2024

AUDIT OBJECTIVE

The National Science Foundation Office of Inspector General engaged Sikich CPA LLC (Sikich) to conduct a performance audit of costs that Montana State University (MSU) incurred on 176 NSF awards during the period of November 1, 2019, to October 31, 2022. The auditors tested approximately \$1.2 million of the more than \$37.7 million of costs claimed during the period. The audit objective was to determine if costs claimed by MSU on NSF awards were allowable, allocable, reasonable, and in compliance with NSF award terms and conditions and federal financial assistance requirements. A description of the audit's objective, scope, and methodology is attached to the report as Appendix B.

AUDIT RESULTS

The report highlights concerns about MSU's compliance with certain federal and NSF award requirements, NSF award terms and conditions, and MSU policies. The auditors questioned \$119,241 of costs claimed by MSU during the audit period. Specifically, the auditors found \$86,881 of unallowable expenses, \$22,015 of inadequately supported expenses, \$6,439 of inappropriately allocated expenses, and \$3,906 of ACM\$ drawdowns that exceeded expenses. The auditors also identified one compliance related finding for which there were no questioned costs: non-compliance with MSU policies. In addition to the five findings, the audit report includes one area for improvement for MSU to consider related to insufficient controls over the application of indirect cost rates. Sikich is responsible for the attached report and the conclusions expressed in it. NSF OIG does not express any opinion on the conclusions presented in Sikich's audit report.

RECOMMENDATIONS

The auditors included five findings and one area for improvement in the report with associated recommendations for NSF to direct MSU to resolve the questioned costs MSU disagrees with, provide documentation supporting that it repaid or otherwise credited the questioned costs MSU agreed to reimburse, and to ensure MSU strengthens administrative and management controls.

AUDITEE RESPONSE

MSU agreed with a majority of the findings, but only agreed to reimburse NSF for \$36,961 in questioned costs. MSU's response is attached to the report, in its entirety, as Appendix A.

CONTACT US

For congressional, media, and general inquiries, email OIGPublicAffairs@nsf.gov.



NATIONAL SCIENCE FOUNDATION
Office of Inspector General

MEMORANDUM

DATE: January 31, 2024

TO: Quadira Dantro
Director
Division of Institution and Award Support

Jamie French
Director
Division of Grants and Agreements

FROM: Theresa S. Hull [REDACTED]
Assistant Inspector General for Audits

SUBJECT: Final Report No. 24-1-006, *Montana State University*

This memorandum transmits the Sikich CPA LLC (Sikich) report for the audit of costs charged by Montana State University (MSU) to 176 NSF awards during the period of November 1, 2019, to October 31, 2022. The audit encompassed approximately \$1.2 million of the more than \$37.7 million of costs claimed during the period. The audit objective was to determine if costs claimed by MSU on NSF awards were allowable, allocable, reasonable, and in compliance with NSF award terms and conditions and federal financial assistance requirements. A full description of the audit's objective, 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

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

- reviewed Sikich'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 Sikich, as necessary, to discuss audit progress, findings, and recommendations;
- reviewed the audit report prepared by Sikich; 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 Keith Nackerud at 703-292-7100 or OIGPublicAffairs@nsf.gov.

Attachment

CC: Stephen Willard, Dan Reed, Victor McCrary, John Veysey, Ann Bushmiller, Karen Marrongelle, Teresa Grancorvitz, Christina Sarris, Janis Coughlin-Piester, Alex Wynnyk, Rochelle Ray, Charlotte Grant-Cobb

EXECUTIVE SUMMARY

The Sikich CPA LLC (formerly known as Cotton & Company Assurance and Advisory, LLC) audit team determined that Montana State University (MSU) needs improved oversight of the allocation and documentation of expenses charged to NSF awards to ensure costs claimed are reasonable, allocable, and allowable in accordance with all federal and NSF regulations, NSF award terms and conditions, and MSU policies and procedures. Specifically, the audit report includes five findings, one area for improvement, and a total of \$119,241 in questioned costs.

AUDIT OBJECTIVES

The National Science Foundation Office of Inspector General engaged Sikich CPA LLC (herein referred to as “we”), to conduct a performance audit of costs MSU claimed for the period from November 1, 2019, to October 31, 2022. The audit objectives included evaluating MSU’s award management environment to determine whether any further audit work was warranted and performing additional audit work, as determined appropriate. We have attached a full description of the audit’s objectives, scope, and methodology as [Appendix B](#).

AUDIT CRITERIA

The audit team assessed MSU’s compliance with 2 Code of Federal Regulations (CFR) 200 (versions effective 12/26/2014, and 11/12/2020); NSF Proposal and Award Policies and Procedures Guides (PAPPGs) 16-1, 17-1, 18-1, 19-1, 20-1, and 22-1; NSF award terms and conditions; and MSU 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 \$119,241 of direct and indirect costs MSU inappropriately claimed during the audit period, including:

- \$86,881 of unallowable expenses
- \$22,015 of inadequately supported expenses
- \$6,439 of inappropriately allocated expenses
- \$3,906 of ACM\$ drawdowns that exceeded expenses

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

- Non-compliance with MSU policies

In addition to the five findings, the audit report includes one area for improvement for MSU to consider related to:

- Insufficient controls related to the application of indirect cost rates

RECOMMENDATIONS

The audit report includes 18 recommendations and 1 consideration for NSF’s Director of the Division of Institution and Award Support related to resolving the \$119,241 in questioned costs and ensuring MSU strengthens its award management environment, as summarized in [Appendix D](#).

AUDITEE RESPONSE

Although MSU agreed with the majority of the findings included in the audit report, it only agreed to reimburse \$36,961 of the questioned costs. MSU’s response is attached, in its entirety, to the report as [Appendix A](#).

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Abbreviations

ACM\$	Award Cash Management \$ervice
CFR	Code of Federal Regulations
FAQ	Frequently Asked Questions
FY	Fiscal Year
GAGAS	Generally Accepted Government Auditing Standards
GL	General Ledger
GRFP	Graduate Research Fellowship Program
MSU	Montana State University
MTDC	Modified Total Direct Cost
NICRA	Negotiated Indirect Cost Rate Agreement
NSF	National Science Foundation
OIG	Office of Inspector General
OSP	Office of Sponsored Programs
P-Card	Purchase Card
PAPPG	Proposal and Award Policies and Procedures Guide
PI	Principal Investigator
POP	Period of Performance

BACKGROUND

The National Science Foundation is an independent federal agency created “to promote the progress of science; to advance the national health, prosperity, and welfare; 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.

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 contractors to provide these audit services.

NSF OIG engaged Sikich CPA LLC (formerly known as Cotton & Company Assurance and Advisory, LLC and herein referred to as “we”), to conduct a performance audit of costs claimed by Montana State University (MSU). MSU is a land-grant university serving state, national, and international constituents. It is located in Bozeman, Montana. In fiscal year (FY) 2022, MSU reported approximately \$479.9 million in operating revenues, with \$125.8 million received from federal sources—including NSF—as illustrated in Figure 1.

Figure 1: MSU’s FY 2022 Operating Revenues



Source: The chart data is supported by MSU’s 2022 Independent Auditors’ Report.

(<https://www.montana.edu/ubs/financialstatements/documents/MSU%20FY22%20Financial%20Statements%20w%20Opinion.pdf>) The photo of MSU’s campus is publicly available on MSU’s website. (<https://www.montana.edu/about/>)

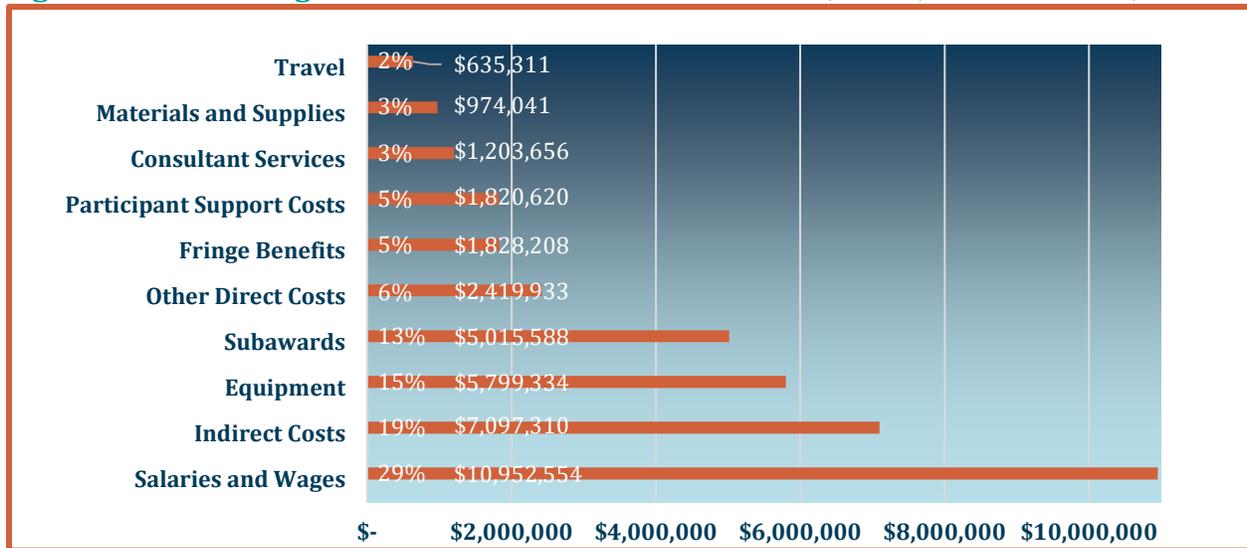
AUDIT SCOPE

This performance audit—conducted under Order No. 140D0422F0878—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 were to evaluate MSU’s award management environment; determine if costs claimed on NSF awards were allowable, allocable, reasonable, and in compliance with relevant federal and NSF regulations; determine whether any further audit work was warranted; and perform any additional audit work, as determined appropriate. [Appendix B](#) provides detailed information regarding the audit scope and methodology used for this engagement.

As illustrated in Figure 2, MSU provided general ledger (GL) data to support the \$37.7 million in expenses it claimed on 176 NSF awards during our audit [period of performance \(POP\)](#) of November 1, 2019, to October 31, 2022.

Figure 2: Costs Charged to NSF Awards from November 1, 2019, to October 31, 2022¹



Source: Auditor analysis of accounting data MSU provided, illustrating the total costs (\$37,746,555) by expense type, using financial information to support costs claimed on NSF awards during the audit period. The Other Direct Costs category includes other direct costs, computer services, and publications.

¹ The \$37,794,260 that MSU claimed in NSF’s Award Cash Management Service (ACM\$) exceeded the total award-related expenses that MSU reported in its GL. Because the amount claimed exceeded the expenses incurred for one NSF award, we reported [Finding 4: ACM\\$ Drawdowns That Exceeded Expenses](#). Because MSU was able to provide justifications for all other material discrepancies (See the [Objectives, Scope and Methodology](#) section for further details), we determined that the GL data was appropriate for the purposes of this engagement.

We judgmentally selected 50 transactions totaling \$1,168,638² (see Table 1) and evaluated supporting documentation to determine whether the costs claimed on the NSF awards 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 ³
Subawards	4	\$730,110
Consultant Services	4	116,503
Participant Support Costs	7	110,315
Materials and Supplies	2	48,750
Salaries and Wages	12	46,438
Equipment	4	43,034
Computer Services	3	28,549
Other Direct Costs	6	21,872
Travel	6	20,033
Publications	2	3,034
Total	<u>50</u>	<u>\$1,168,638</u>

Source: Auditor summary of selected transactions.

AUDIT RESULTS

We identified and questioned \$119,241 in costs MSU charged to 14 NSF awards. We also identified expenses that MSU charged to six NSF awards that did not result in **questioned costs** but did result in non-compliance with MSU-specific policies and procedures. Finally, we identified one area in which MSU should consider strengthening its controls to ensure it does not overcharge indirect costs to NSF awards in the future. 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
Unallowable Expenses	\$86,881
Inadequately Supported Expenses	22,015
Inappropriately Allocated Expenses	6,439
ACM\$ Drawdowns That Exceeded Expenses	3,906
Non-Compliance with MSU Policies	-
Total	<u>\$119,241</u>

Source: Auditor summary of findings identified.

² The \$1,168,638 represents the total value of the 50 transactions selected for transaction-based testing. It does not represent the dollar base of the total costs reviewed during the audit.

³ 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.

We made 18 recommendations and identified 1 consideration for NSF’s Director of the Division of Institution and Award Support related to resolving the \$119,241 in questioned costs and ensuring MSU strengthens its administrative and management procedures for monitoring federal funds. We communicated our audit results and the related findings and recommendations to MSU and NSF OIG. We have included MSU’s response to this report, in its entirety, in [Appendix A](#).

FINDING 1: UNALLOWABLE EXPENSES

MSU charged six NSF awards a total of \$86,881 in indirect costs, airfare expenses, [participant support costs](#), and [Graduate Research Fellowship Program \(GRFP\)](#) expenses that were unallowable per federal regulations⁴ and [NSF Proposal and Award Policies and Procedures Guides \(PAPPGs\)](#).⁵

Unallowable Indirect Costs

MSU did not verify that it and its subawardees applied indirect cost rates to a [Modified Total Direct Cost \(MTDC\)](#) base consistent with applicable [Negotiated Indirect Cost Rate Agreements \(NICRAs\)](#)⁶ when charging expenses to NSF awards. As a result, MSU charged two NSF awards for \$77,847 in unallowable indirect costs, as illustrated in Table 3.

Table 3: Unallowable Indirect Costs

Direct Expense Dates per Invoices Received	NSF Award No.	Unallowable Total	Indirect Cost Rates Inappropriately Applied to:	Notes
August 1, 2019 – November 30, 2019	██████████	\$72,578	Equipment Expenses	a
April 1, 2021 – August 30, 2021	██████████	5,269	Subawardee Expenses	b

Source: Auditor summary of identified exceptions.

- a) As of January 2020, MSU had charged NSF Award No. ██████████ for \$72,578 in unallowable indirect costs because it did not appropriately capitalize [equipment](#) costs invoiced for the construction of a plastic gutter system. Specifically, because the cost to construct the gutter system exceeded \$5,000 and the gutter system has a useful life in excess of 1 year, MSU should have classified the gutter system as

⁴ According to 2 Code of Federal Regulations (CFR) § 200.403 (12/26/2014) and 2 CFR § 200.403 (Revised 11/12/2020), [Factors affecting allowability of costs](#), (a), for a cost to be allowable, it must be allocable and reasonable for the performance of the federal award. Further, section (g) states that, in order for a cost to be allowable, it must be adequately documented.

⁵ According to NSF PAPPGs 18-1, 19-1, and 20-1, Part II, Chapter X, Section A, *Basic Considerations*, grantees should ensure all costs charged to NSF awards meet the requirements of the applicable federal cost principles, grant terms and conditions, and any other specific requirements of both the award notice and the applicable program solicitation.

⁶ MSU’s NICRAs dated September 17, 2015, and June 1, 2022, state that MTDCs shall exclude equipment, capital expenditures, and the portion of each subgrant and subcontract in excess of \$25,000.

equipment, which is excluded from MSU’s MTDC base, consistent with MSU’s Office of Sponsored Programs (OSP) Principal Investigator (PI) Guide.⁷

- b) As of January 2022, an MSU subawardee had invoiced MSU for \$5,269 in unallowable indirect costs that MSU charged NSF Award No. [REDACTED] as a result of one of its subawardees inappropriately applying MSU’s off-campus indirect cost rate of 26 percent to its MTDC base rather than using its own approved off-campus indirect cost rate of 22 percent⁸ when calculating the total indirect costs to invoice to MSU.

Unallowable Airfare Expenses

MSU charged two NSF awards for \$6,259 in airfare costs that are not allowable per federal regulations⁹ and NSF PAPPGs,¹⁰ as illustrated in Table 4.

Table 4: Unallowable Airfare Expenses

Expense Date	NSF Award No.	Unallowable Total	Unallowable Airfare Associated With:	Notes
February 2020	[REDACTED]	\$3,491	Upgraded Airfare	a
June 2022	[REDACTED]	2,768	Unused Airfare/Airfare Credit Received	b

Source: Auditor summary of identified exceptions.

- a) In February 2020, MSU charged NSF Award No. [REDACTED] for \$3,491 for airfare that included upgrades to Comfort Plus seating without either performing a cost comparison to identify the costs associated with the upgrades or documenting that a special accommodation existed that would make the upgrades allowable.¹¹

⁷ According to MSU’s *OSP PI Guide* (2022), Section 740.00, equipment means tangible property having a useful life of more than 1 year and a per-unit acquisition cost that equals or exceeds \$5,000. Further, the guide notes that MSU may not charge facilities and administration costs (Indirect [F&A]) on equipment costs.

⁸ Per the subawardee’s NICRA dated July 11, 2014, the predetermined rate from July 1, 2014, to June 30, 2019, was 22.00 percent for off-campus research.

⁹ According to 2 CFR § 200.474 (12/26/2014), (d), *Commercial air travel*, airfare costs in excess of the basic, least expensive unrestricted accommodations class offered by commercial airlines are unallowable except when such accommodations would: (i) require circuitous routing, (ii) require travel during unreasonable hours, (iii) excessively prolong travel, or (iv) result in additional costs that would offset the transportation savings. Additionally, 2 CFR § 200.406 (Revised 11/12/2020), *Applicable Credits*, states that entities must repay federal awards for any credits accrued or received. This repayment may take the form of either a cost reduction or a cash refund.

¹⁰ NSF PAPPGs 18-1 and 20-1, Part I, Chapter II, Section C.2.g.iv.a, *Travel*, state that allowance for air travel normally will not exceed the cost of round-trip, economy airfares.

¹¹ MSU’s *Business Procedures Manual, Travel – Mode of Travel*, states, “Employees using commercial airline travel should make every effort to purchase tickets at the lowest available fare.... If unable to purchase a ticket at the lowest available fare, the traveler must provide justification and have approval from the appropriate supervisor. Failure to comply with this policy will require reimbursement of the cost to upgrade the ticket.” Further, per 2 CFR § 200.474 (12/26/2014), (d), *Commercial air travel*, airfare costs in excess of the basic, least expensive unrestricted accommodations class offered by commercial airlines are unallowable except when such accommodations would: (i) require circuitous routing, (ii) require travel during unreasonable hours, (iii) excessively prolong travel, or (iv) result in additional costs that would offset the transportation savings.

- b) In June 2022, MSU charged NSF Award No. [REDACTED] for \$2,768 in airfare expenses for an external advisory committee member (a non-MSU employee) to attend an award related committee meeting. Because the advisory member was unable to attend the meeting due to an illness, the cost of the airfare did not benefit the award, and was therefore unallowable. Further, although the cost of the airfare was credited back to the non-MSU employee when the traveler canceled their trip, the funds were not returned to MSU or NSF.

Unallowable Use of Participant Support Funds

MSU used \$2,110 of participant support funding awarded on one NSF award to cover non-participant expenses without the prior NSF approval required per NSF Grant General Conditions,¹² as illustrated in Table 5.

Table 5: Unallowable Use of Participant Support Costs

Expense Date	NSF Award No.	Unallowable Total	Participant Funds Used to Cover:	Notes
September 2022	[REDACTED]	\$2,110	Non-Participant Costs	a

Source: Auditor summary of identified exception.

- a) In September 2022, MSU used \$2,110 in participant support costs budgeted for NSF Award No. [REDACTED] to support an individual who was not an award participant. MSU acknowledged that it had incorrectly charged the award for the costs incurred for the “11th participant”¹³ and that it should have charged these costs to a separate funding source.

Unallowable GRFP Payment

MSU charged one NSF award for \$665 in unallowable GRFP expenses for a stipend payment that exceeded the \$34,000 limit allowed per NSF’s GRFP solicitation,¹⁴ as illustrated in Table 6.

Table 6: Unallowable GRFP Overpayment

Expense Date	NSF Award No.	Unallowable Total	Description	Notes
April 2019 - June 2020	[REDACTED]	\$665	GRFP Overpayment	A

Source: Auditor summary of identified exception.

¹² According to NSF’s General Grant Conditions (Effective 2/25/2019), Section 7, *Participant Support Costs*, funds provided for participant support may not be used for other categories of expense without NSF’s prior written approval.

¹³ Travel costs for the 11th participant included lodging (\$1,340), a University Access Card (\$20), social fees (\$15), a refrigerator (\$20), and a meal plan (\$715).

¹⁴ According to NSF Program Solicitation 19-590, *Award Information*, NSF provided a stipend of \$34,000 to GRFP fellows.

- a) Between April 2019 and June 2020, MSU charged NSF Award No. [REDACTED] for \$34,665 in GRFP stipend payments provided to one student, or \$665 in excess of the allowable annual stipend amount of \$34,000.

Conclusion

MSU’s policies, procedures, and internal controls were not sufficient to ensure it only charged allowable costs to NSF awards. Specifically, MSU did not have sufficient review procedures in place to ensure it appropriately capitalized constructed equipment, verified that subawardees only applied allowable indirect cost rates, and removed unallowable and refunded airfare costs from expense reports before charging unallowable costs to NSF awards. Further, MSU’s policies did not ensure it complied with NSF-specific award terms and conditions related to spending participant support funds or issuing GRFP stipends. We are therefore questioning \$86,881 of unallowable expenses charged to six NSF awards. MSU agreed to reimburse NSF for \$14,303 of the questioned costs but disagreed with the remaining \$72,578, as illustrated in Table 7.

Table 7: Finding 1 Summary: Unallowable Expenses

NSF Award No.	Description	Fiscal Year(s)	Questioned Costs			
			Direct	Indirect	Total	MSU Agreed to Reimburse
[REDACTED]	August 2019 - November 2019 Indirect Costs	2020	\$0	\$72,578	\$72,578	\$0
[REDACTED]	April 2021 - August 2021 Indirect Costs	2021 - 2022	-	5,269	5,269	5,269
[REDACTED]	February 2020 Upgraded Airfare	2020	2,424	1,067	3,491	3,491
[REDACTED]	June 2022 Unused/Credited Airfare	2022	1,922	846	2,768	2,768
[REDACTED]	September 2022 Non-Participant Costs	2023	2,110	-	2,110	2,110
[REDACTED]	April 2019 - June 2020 GRFP Overpayment	2019 - 2020	665	-	665	665
Total			<u>\$7,121</u>	<u>\$79,760</u>	<u>\$86,881</u>	<u>\$14,303</u>

Source: Auditor summary of identified exceptions.

Recommendations

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

- 1.1. Resolve the \$72,578 in questioned indirect costs for which MSU has not agreed to reimburse NSF and direct MSU to repay or otherwise remove the sustained questioned costs from its NSF awards.

- 1.2. Direct MSU to provide documentation supporting that it has repaid or otherwise credited the \$14,303 in questioned airfare, participant support costs, and Graduate Research Fellowship Program (GRFP) expenses for which it has agreed to reimburse NSF.
- 1.3. Direct MSU to strengthen its policies and procedures related to the capitalization of constructed equipment. Updated policies should require MSU to capitalize any constructed items that meet its definition of equipment and exclude the cost of these items from its modified total direct cost base.
- 1.4. Direct MSU to develop formal policies and procedures for reviewing subawardee invoices to verify that the subawardee is appropriately applying indirect costs using the rate(s) included in the subawardee's approved Negotiated Indirect Cost Rate Agreement(s) before approving the invoice for payment.
- 1.5. Direct MSU to strengthen its procedures for booking and approving travel expenses. Updated procedures could include:
 - Requiring travelers to perform a cost comparison when booking flights that include any unallowable upgrades so the travelers are able to document the difference in cost between the standard economy airfare and the airfare including the upgrades.
 - Requiring personnel approving expense reports to verify that travelers actually performed the scheduled travel and that the travelers did not claim expenses for any unused, credited, or refunded expenses prior to approving expense reports.
- 1.6. Direct MSU to implement additional procedures that require routine reviews of all expenses charged to NSF awards as participant support costs to verify that MSU incurred the costs to support NSF award participants.
- 1.7. Direct MSU to strengthen its procedures surrounding GRFP stipend payments. Updated procedures should ensure that MSU pays GRFP stipends using the stipend rate identified in the relevant NSF GRFP solicitation.

Montana State University Response: MSU partially agreed with the finding, agreeing to reimburse NSF for \$14,303 of the questioned costs but disagreeing with the \$72,578 in questioned indirect costs for NSF Award No. [REDACTED]. Specifically, MSU believes that it appropriately accounted for the construction costs of the gutter system as contracted services expenses because:

- MSU included costs to construct the gutter system as contracted service costs in the NSF award proposal budget, and both the NSF Program Officer and the NSF Grants Officer approved the budget.

- MSU does not believe the gutter system represents capital equipment because the PI was unable to verify that the gutter system would have a useful life greater than 1 year. Specifically, per the PI, the system’s useful life was uncertain due to weather conditions.

Auditors’ Additional Comments: Our position regarding this finding has not changed. With regard to the \$72,578 in questioned costs for NSF Award No. [REDACTED] because the gutter system meets both the federal and MSU definition of equipment,¹⁵ and because equipment is excluded from MSU’s MTDC base and does not incur indirect costs,¹⁶ the questioned indirect costs are unallowable. Specifically, because the \$164,949 in consulting service costs charged to the NSF award resulted in MSU receiving a tangible asset with a cost exceeding \$5,000 and a useful life of more than 1 year,¹⁷ our position regarding this finding has not changed.

FINDING 2: INADEQUATELY SUPPORTED EXPENSES

MSU did not provide adequate documentation to support the allocability, allowability, and reasonableness of \$22,015 in travel and internal service provider expenses charged to five NSF awards, as required for the costs to be allowable per federal regulations,¹⁸ NSF PAPPGs,¹⁹ and MSU policies.²⁰

¹⁵ According to MSU’s OSP PI Guide (2022), Section 740.00, equipment means tangible property having a useful life of more than 1 year and a per-unit acquisition cost that equals or exceeds \$5,000. Further, the guide notes that MSU may not charge facilities and administration costs (Indirect [F&A]) on equipment costs.

¹⁶ MSU’s NICRAs dated September 17, 2015, and June 1, 2022, state that MTDCs shall exclude equipment.

¹⁷ MSU confirmed the gutter system remained in use for more than one year and that it was still in use as of the award’s POP end date of November 30, 2023.

¹⁸ According to 2 CFR § 200.403 (12/26/2014) and 2 CFR § 200.403 (Revised 11/12/2020), *Factors affecting allowability of costs*, (a), for a cost to be allowable, it must be allocable and reasonable for the performance of the federal award. Further, section (g) states that, in order for a cost to be allowable, it must be adequately documented.

¹⁹ Per NSF PAPPGs 16-1, Part II, Chapter V, and 17-1, 19-1, and 20-1, Part II, Chapter X, Section A, *Basic Considerations*, grantees should ensure that all costs charged to NSF awards meet the requirements of the cost principles contained in 2 CFR § 200, Subpart E; NSF policy; and the program solicitation. Additionally, the grantee organization is responsible for ensuring that all costs charged to NSF awards meet the requirements of the grant terms and conditions.

²⁰ Per MSU’s *OSP PI Guide*, Section 620, *OMB Uniform Guidance*, PIs are required to conform to circulars that are relevant to their awards. This includes 2 CFR § 200.403, which states that, for a cost to be allowable, it must be adequately documented, as well as necessary and reasonable for the performance of the federal award.

Inadequately Supported Travel Expenses

MSU did not provide adequate documentation to support that \$12,010 in travel expenses charged to two NSF awards were allowable per federal regulations,²¹ NSF PAPPGs,²² and MSU policies,²³ as illustrated in Table 8.

Table 8: Inadequately Supported Travel Expenses

Expense Date	NSF Award No.	Expense Total	Insufficient Documentation to Support the Allowability of:	Notes
February 2020	██████████	\$2,308	Airfare Expenses	a
May 2022	██████████	9,702	Lodging Expenses	b

Source: Auditor summary of identified exceptions.

- a)** In February 2020, MSU charged NSF Award No. ██████████ for \$2,308 in expenses that a travel agency invoiced for purchasing airfare. However, MSU was unable to provide an itemized receipt or other documentation to support that the invoiced costs were allowable and reasonable.

- b)** In May 2022, MSU charged NSF Award No. ██████████ for \$9,702 in lodging and no-notice expenses related to the rental of a house. Although MSU was able to provide an invoice supporting the amount charged to the award, MSU was unable to provide a lease agreement or any other documentation to support that the costs charged to the award were reasonable or allowable.

Inadequately Supported Internal Service Expenses

MSU did not provide adequate documentation to support that it charged \$10,005 in internal service expenses to three NSF awards using rates that were reasonably calculated and approved on at least a 2-year basis, as required per federal regulations,²⁴ as illustrated in Table 9.

²¹ According to 2 CFR § 200.474 (12/26/2014) and 2 CFR § 200.475 (11/12/2020), *Travel costs*, expenses for transportation and lodging are allowable when charged on an actual cost basis in accordance with the non-federal entity's written travel reimbursement policies. Additionally, per section (b), *Lodging and Subsistence*, costs of lodging must be considered reasonable and otherwise allowable only to the extent such costs do not exceed charges normally allowed by the non-federal entity. Further, section (d) (12/26/2014) and section (e) (11/12/2020), *Commercial air travel*, state that airfare costs in excess of the basic, least expensive unrestricted accommodations class offered by commercial airlines are unallowable except when justified and documented on a case-by-case basis.

²² According to NSF PAPPGs 16-1 and 20-1, Part I, Chapter II, Section C.2.g.iv.a, *Travel*, allowance for air travel normally will not exceed the cost of round-trip, economy airfares.

²³ MSU's *Business Procedures Manual, Travel – Mode of Travel*, states that employees using commercial airline travel should make every effort to purchase tickets at the lowest available fare. Further, the policy notes that, if the traveler is unable to purchase a ticket at the lowest available fare, the traveler must provide justification and obtain approval from the appropriate supervisor. The policy states that if the traveler does not comply with this requirement, they will be required to reimburse the cost to upgrade the ticket.

²⁴ According to 2 CFR 200, Section § 200.468 (12/26/2014) (b), *Specialized service facilities*, "The costs of such services, when material, must be charged directly to applicable awards based on actual usage of the services on the basis of a schedule of rates or established methodology that: ... (2) is designed to recover only the aggregate costs of the services. Rates must be adjusted at least biennially, and must take into consideration over/under applied costs of the previous period(s)."

Table 9: Inadequately Supported Internal Service Expenses

Expense Date	NSF Award No.	Expense Total	Issues with Internal Service Provider Invoiced Rates:	Notes
January 2020	██████	\$3,201	Rates Were Not Supported by a Rate Agreement	a
December 2020	██████	1,764	Rates Supported by an Agreement That Was Not Reviewed or Approved Timely	b
October 2021	██████	5,040	Rates Supported by an Agreement That Was Not Reviewed or Approved Timely	c

Source: Auditor summary of identified exceptions.

- a)** In January 2020, MSU charged NSF Award No. ██████ for \$3,201 in expenses that an MSU internal event planning service provider invoiced using rates that were not supported by a rate agreement or any other type of documentation. Specifically, MSU charged the NSF award for costs invoiced for advertising, printing, lunches, and background checks, as well as for a 6 percent internal administration fee, none of which were supported by established rate agreements.
- b)** In December 2020, MSU charged NSF Award No. ██████ for \$1,764 in expenses that an MSU internal maintenance service provider invoiced using rates that MSU did not formally review and approve until April 2023, after our audit began.
- c)** In October 2021, MSU charged NSF Award No. ██████ for \$5,040 in expenses that an MSU internal computer service provider invoiced using rates that MSU did not formally review and approve until April 2023, after our audit began.

Conclusion

MSU’s policies, procedures, and internal controls were not sufficient to ensure that it obtained, created, and/or maintained adequate documentation to support the allowability of all costs charged to federal awards. Specifically, MSU’s procedures did not require personnel reviewing travel expense reports to verify that the travelers had submitted itemized receipts, contracts, or other documentation to support the allowability of all of the costs claimed. Further, MSU’s policies and procedures were not sufficient to ensure that MSU’s internal service providers appropriately develop, review, and approve rates invoiced to MSU departments consistent with federal regulations. We are therefore questioning \$22,015 in inadequately supported expenses charged to five NSF awards. MSU agreed to reimburse NSF for \$12,313 of the questioned costs but disagreed with the remaining \$9,702, as illustrated in Table 10.

Table 10: Finding 2 Summary: Inadequately Supported Expenses

NSF Award No.	Description	Fiscal Year(s)	Questioned Costs			MSU Agreed to Reimburse
			Direct	Indirect	Total	
██████	February 2020 Airfare	2020	\$1,832	\$476	\$2,308	\$2,308
██████	May 2022 Lodging	2022	7,700	2,002	9,702	-
██████	January 2020 Internal Services	2020	2,223	978	3,201	3,201
██████	December 2020 Internal Services	2021	1,225	539	1,764	1,764
██████	October 2021 Internal Services	2022	3,500	1,540	5,040	5,040
Total			<u>\$16,480</u>	<u>\$5,535</u>	<u>\$22,015</u>	<u>\$12,313</u>

Source: Auditor summary of identified exceptions.

Recommendations

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

- 2.1. Resolve the \$9,702 in questioned inadequately supported lodging expenses for which MSU has not agreed to reimburse NSF and direct MSU to repay or otherwise remove the sustained questioned costs from its NSF awards.
- 2.2. Direct MSU to provide documentation supporting that it has repaid or otherwise credited the \$12,313 in questioned airfare and internal service expenses for which it has agreed to reimburse NSF.
- 2.3. Direct MSU to strengthen its policies and procedures surrounding the review of expense reports to require reviewers to verify that travelers have supported all costs claimed as allowable per federal and NSF regulations before charging the costs to NSF awards. Updated policies should ensure that travelers:
 - Provide itemized receipts when booking travel through travel agencies.
 - Support all lodging costs claimed with documentation that includes an agreed-upon rate (such as a hotel receipt or a formal lease agreement).
- 2.4. Direct MSU to develop formal policies and procedures for establishing internal service provider rate agreements and for verifying that MSU has appropriately reviewed and approved the rate agreements before charging those rates to NSF awards.

Montana State University Response: MSU partially agreed with the finding, agreeing to reimburse NSF for \$12,313 of the questioned costs but disagreeing with the remaining \$9,702 in inadequately supported travel expenses questioned for NSF Award No. ██████

Specifically, MSU believes the expenses questioned for NSF Award No. [REDACTED] should be allowable because the costs were reasonable and consistent with MSU's established travel policy and because NSF approved the travel costs as part of the NSF award proposal. Specifically, MSU noted that while a formal lease agreement was never executed,²⁵ because the amount charged was based on an [REDACTED] invoice that MSU was required to pay related to lodging reserved to perform NSF-related travel, the costs should be allowable.

Auditors' Additional Comments: Our position regarding this finding has not changed. With regard to the \$9,702 in questioned lodging costs for NSF Award No. [REDACTED] because MSU did not obtain any formal documentation to support the amount charged to the award, we are unable to verify the costs are reasonable or allowable consistent with NSF or federal regulations. Specifically, although the travelers did originally make a payment to [REDACTED] for the lodging, MSU did not obtain a lease to support the terms of the payment. Further, due to issues between [REDACTED] and the host, the host separated from [REDACTED] and refunded the money the travelers had paid [REDACTED]. Although the host requested a direct payment from the travelers for the same amount charged by [REDACTED], the host did not establish a lease and/or any other documentation to support the terms of the stay. Further, the host then charged the travelers for additional fees for not providing 30 days' notice prior to leaving when the travelers were forced to leave due to the fire. As it does not appear reasonable for MSU to charge the award for lodging that was not based on any formal, documented terms or for unreasonable fees assessed by the host, our position regarding this finding has not changed.

FINDING 3: INAPPROPRIATELY ALLOCATED EXPENSES

MSU did not always allocate expenses to NSF awards based on the relative benefits the awards received, as required per federal regulations²⁶ and NSF PAPPGs.²⁷ As a result, MSU charged two NSF awards a total of \$6,439 in inappropriately allocated publication and tuition expenses, as illustrated in Table 11.

²⁵ MSU noted that it was in the process of executing a formal lease agreement but did not because the travelers vacated the lodging as a result of a fire.

²⁶ According to 2 CFR § 200.405 (12/26/2014) (a), *Allocable Costs*, a cost is allocable to a particular cost objective (i.e., a specific function, project, sponsored agreement, department, or the like) if the goods or services involved are chargeable or assignable to such cost objective in accordance with the relative benefits received or another equitable relationship.

²⁷ According to NSF PAPPGs 16-1, Part II, Chapter V, and 18-1, Part II, Chapter X, Section A, *Basic Considerations*, grantees should ensure all costs charged to NSF awards meet the requirements of the applicable federal cost principles, grant terms and conditions, and any other specific requirements of both the award notice and the applicable program solicitation.

Table 11: Inappropriately Allocated Expenses

Expense Date	NSF Award No.	Expense Type	Amount Charged	Percent Allocable (%)	Amount Inappropriately Allocated	Notes
July 2021	██████████	Publication	\$2,441	50.00	\$1,221	a
January 2022	██████████	Tuition	7,987	34.67	5,218	b

Source: Auditor summary of identified exceptions.

- a) In July 2021, MSU charged NSF Award No. ██████████ for \$2,441—or 100 percent—of the expenses incurred to publish a research article that referenced funding support from two NSF awards: NSF Award No. ██████████ and NSF Award No. ██████████. As MSU confirmed both awards contributed equally to the project, 50 percent—or \$1,221—of the publication costs are not allocable to this NSF award.²⁸
- b) In January 2022, MSU charged NSF Award No. ██████████ for \$7,987—or 100 percent—of three students’ Fall 2021 tuition expenses. Although these students did dedicate effort to this award, because the NSF award expired in September 2021, only 26 of the 75 Fall 2021 instruction days, or 34.67 percent, fell within the award’s POP. Accordingly, 65.33 percent—or \$5,218—of the tuition costs are not allocable to this award.

Conclusion

MSU’s policies, procedures, and internal controls were not sufficient to ensure that MSU allocated costs incurred based on the relative benefits each NSF award received. Specifically, MSU did not ensure that it appropriately allocated publication expenses to all funding sources that supported published research, or that it charged tuition costs consistent with student effort. We are therefore questioning \$6,439 of publication and tuition expenses that MSU inappropriately allocated to two NSF awards. MSU agreed to reimburse NSF for the \$6,439 in questioned costs, as illustrated in Table 12.

Table 12: Finding 3 Summary: Inappropriately Allocated Expenses

NSF Award No.	Description	Fiscal Year(s)	Questioned Costs			MSU Agreed to Reimburse
			Direct	Indirect	Total	
██████████	July 2021 Publication	2022	\$848	\$373	\$1,221	\$1,221
██████████	January 2022 Tuition	2022	5,218	-	5,218	5,218
Total			<u>\$6,066</u>	<u>\$373</u>	<u>\$6,439</u>	<u>\$6,439</u>

Source: Auditor summary of identified exceptions.

²⁸ Per 2 CFR § 200.461 (12/26/2014), *Publication and printing costs*, publication costs are allowable when publications report work supported by the federal government.

Recommendations

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

- 3.1 Direct MSU to provide documentation supporting that it has repaid or otherwise credited the \$6,439 in questioned publication and tuition expenses for which it has agreed to reimburse NSF.
- 3.2 Direct MSU to strengthen its policies and procedures and internal controls for allocating expenses to sponsored projects. Updated procedures could require:
 - Individuals incurring publication expenses to document and justify the allocation methodology used when publishing research that identifies multiple sponsoring funding sources.
 - MSU to remove all costs charged to NSF awards for tuition that relates to time period(s) after the award's period of performance has expired as part of the award close-out activities and verify that it allocates tuition consistent with student effort.

Montana State University Response: MSU agreed with the finding and stated that it will reimburse NSF for the \$6,439 in questioned costs. MSU further stated that it will strengthen its procedures to ensure that it appropriately allocates publication and tuition expenses in the future.

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

FINDING 4: ACM\$ DRAWDOWNS THAT EXCEEDED EXPENSES

MSU did not appropriately limit the amount it drew from NSF's Award Cash Management Service (ACM\$) to its immediate cash requirements for one NSF award, as required per federal regulations²⁹ and the NSF PAPPG.³⁰ Specifically, MSU's ACM\$ draws for one NSF award exceeded the total expenses supported within its accounting system data by \$3,906, as illustrated in Table 13.

²⁹ According to 2 CFR § 200.305 (12/26/2014) (b)(1), *Federal payment*, the timing and amount of advance payments must be as close as is administratively feasible to the actual disbursements by the non-federal entity for direct program or project costs and the proportionate share of any allowable indirect costs.

³⁰ According to NSF PAPPG 16-1, Part II, Chapter III, Section C.2.a, *Payment Policies*, advance payments to grantees must be limited to the minimum amounts needed and be timed to be in accordance with the actual, immediate cash requirements of the grantee in carrying out the purpose of the approved program or project. Further, this policy notes that the timing and amount of advance payments must be as close as is administratively feasible to the actual disbursements by the grantee for direct program or project costs and the proportionate share of any allowable indirect costs.

Table 13: ACM\$ Draws That Exceeded Accumulated Expenses

NSF Award No.	Cash Drawn per ACM\$	Expenses per MSU's GL	Unsupported Expenses	Notes
██████████	\$6,000,000	\$5,996,094	\$3,906	a

Source: Auditor summary of identified exception.

- a) In September 2022, after receiving a notice from NSF regarding expiring appropriations, MSU drew down all of the remaining funds on NSF Award No. ██████████. As a result, MSU drew down a total of \$6,000,000 on this award when its accounting records only supported \$5,996,094 in expenses. Further, MSU's overall award summary dated January 11, 2023, supported that MSU had only incurred \$5,996,094 in expenses for this award as of the end of the 120-day close-out period.

Conclusion

MSU allows personnel to draw down all funds remaining on awards with expiring appropriations without verifying it has incurred sufficient expenses to justify the amounts drawn down. Further, MSU does not have sufficient close-out procedures in place to ensure that it returns overdrawn funds to NSF. We are therefore questioning \$3,906 claimed on one NSF award that was not supported by the expenses recorded within MSU's accounting system. MSU agreed to reimburse NSF for the \$3,906 in questioned costs, as illustrated in Table 14.

Table 14: Finding 4 Summary: ACM\$ Draws That Exceeded Accumulated Expenses

NSF Award No.	Description	Fiscal Year(s)	Questioned Costs	MSU Agreed to Reimburse
██████████	ACM\$ Draws That Exceeded Accumulated Expenses	2023	\$3,906	\$3,906
Total			<u>\$3,906</u>	<u>\$3,906</u>

Source: Auditor summary of identified exception.

Recommendations

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

- 4.1 Direct MSU to provide documentation supporting that it has repaid or otherwise credited the \$3,906 in questioned Award Cash Management Service drawdowns for which it has agreed to reimburse NSF.
- 4.2 Direct MSU to strengthen the administrative and management internal controls and procedures surrounding its Award Cash Management Service reconciliation process. Updated controls could include:
 - Requiring MSU to develop a formal procedure regarding how to calculate the appropriate amount of funding to draw down on NSF awards with expiring

appropriations. This procedure should ensure that MSU documents how it determined the appropriate amount to draw down and returns any unused funds to NSF in a timely manner.

- Requiring an individual who is independent from the standard Award Cash Management Service drawdown process to perform periodic reconciliations of Award Cash Management Service drawdowns to MSU general ledger expenses for each NSF award, as well as to conduct a final review and reconciliation at award close-out.

Montana State University Response: MSU agreed with the finding and stated that it returned the \$3,906 to NSF.

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

FINDING 5: NON-COMPLIANCE WITH MSU POLICIES

MSU did not always comply with its *Subaward Frequently Asked Questions (FAQ) Procedures* and *Business Procedures Manual* when charging costs to six NSF awards.

Non-Compliance with MSU Subaward Policy

MSU did not always obtain PI approval on **subaward** invoices, as required by MSU’s *Subaward FAQ Procedures*,³¹ as illustrated in Table 15.

Table 15: Non-Compliance with MSU Subaward Policy

Expense Date	NSF Award No.	Fiscal Year	Subaward Invoice Policy Compliance Exception
June 2021		2021	Subaward Invoice Not Approved by PI
January 2022		2022	Subaward Invoice Not Approved by PI
September 2022		2023	Subaward Invoice Not Approved by PI
October 2022		2023	Subaward Invoice Not Approved by PI

Source: Auditor summary of identified exceptions.

Non-Compliance with MSU’s Business Procedures Manual

MSU did not always create or maintain contract service agreements³² or use a purchase card (P-Card) when incurring lodging expenses,³³ as required by MSU’s *Business Procedures Manual*, as illustrated in Table 16.

³¹ Per MSU’s *Subaward FAQ Procedures*, the MSU PI is responsible for approving all subaward expenses submitted for payment.

³² Per MSU’s *Business Procedures Manual*, Paragraph II.H., Expenditures, *General Procurement Guidelines*, departments must issue a contracted service agreement when buying services for which the total contract value exceeds \$5,000.

³³ Per MSU’s *Business Procedures Manual*, *Travel – Meals and Lodging section*, Part II.B., travelers are required to use the MSU P-Card for lodging purchases.

Table 16: Non-Compliance with MSU’s Business Procedures Manual

Expense Date	NSF Award No.	Fiscal Year	Business Procedures Manual Compliance Exception	Notes
January 2021	██████████	2021	Consultant Service Not Supported by a Contract Service Agreement	a
May 2022	██████████	2022	Lodging Not Charged to P-Card	b

Source: Auditor summary of identified exceptions.

- a) In January 2021, MSU charged NSF Award No. ██████████ for \$18,688 in **consultant services** that were not supported by a contract services agreement.
- b) In May 2022, MSU charged NSF Award No. ██████████ for \$9,702 in lodging expenses that the traveler did not charge to an MSU P-Card.

Conclusion

MSU has not appropriately documented its current approval procedures for subaward invoices which, per MSU, now only require the PI’s approval on final invoices.³⁴ Further, MSU did not have sufficient procedures or internal controls in place to ensure purchasers complied with all of the requirements outlined in its *Business Procedures Manual*. Because these instances of non-compliance did not directly result in MSU charging unallowable costs to NSF awards, we are not questioning any costs related to these exceptions. However, we are noting compliance exceptions for the six instances in which MSU did not comply with its internal policies when charging costs to awards, as illustrated in Table 17.

Table 17: Finding 5 Summary: Non-Compliance with MSU Policies

NSF Award No.	Compliance Exception Identified	Fiscal Year
██████████	Non-Compliance with MSU Subaward Invoice Procedure	2021
██████████	Non-Compliance with MSU Subaward Invoice Procedure	2022
██████████	Non-Compliance with MSU Subaward Invoice Procedure	2023
██████████	Non-Compliance with MSU Subaward Invoice Procedure	2023
██████████	Non-Compliance with MSU Business Procedures Manual	2021
██████████	Non-Compliance with MSU Business Procedures Manual	2022

Source: Auditor summary of identified exceptions.

Recommendations

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

- 5.1. Direct MSU to verify that all of its current subaward policies accurately reflect its subaward invoice approval requirements.

³⁴ As of April 2023, MSU has updated its policies and procedures to only require the PI to approve the final invoice, as that has been MSU’s practice for all subaward invoices. However, because the policy in effect at the time of the transaction required the PI to approve the subaward invoice and the PI did not do so, we are noting a compliance exception.

- 5.2. Direct MSU to implement internal controls that require personnel to create contract service agreements to support all consultant services and maintain the agreements throughout the contract's period of performance and after its expiration date in accordance with its record retention policies.
- 5.3. Direct MSU to conduct annual travel expense reporting trainings for individuals who may travel for sponsored projects. The annual training should emphasize all Travel – Meals and Lodging requirements included in MSU's *Business Procedures Manual*, including the requirement to use University purchase cards.

Montana State University Response: MSU did not agree with this finding and specifically noted it disagreed with the identified instances of non-compliance with its *Subaward FAQ Procedures*. Specifically, MSU noted that it clarified its subaward procedures in April 2023 to address any ambiguity regarding the intent of existing policies and internal controls. MSU's response did not specifically address the non-compliance identified with its *Business Procedures Manual*.

Auditors' Additional Comments: Our position regarding this finding has not changed. Specifically, MSU noted it clarified its subaward procedures in April 2023 to state that the PI is only required to approve the final subaward invoice. However, the procedures in effect at the time of the sampled invoices required PI approval on all invoices. As the prior procedures required the sampled invoice to be approved and the April 2023 change to the procedures occurred after the invoice was paid, the prior procedures were applicable during the audit and our position regarding this finding has not changed.

AREA FOR IMPROVEMENT: INSUFFICIENT CONTROLS RELATED TO THE APPLICATION OF INDIRECT COST RATES

MSU does not have a formally documented policy or procedure in place to ensure it consistently charges indirect costs using a rate no greater than the NICRA rate(s) in effect as of the NSF award date. Specifically, MSU does not have a formal process for documenting its decision to apply a proposed indirect cost rate when the proposed rate is different from the NICRA rate(s) effective at the time of award.

As a result, MSU did not document that it verified its use of its proposed indirect cost rates would not result in indirect costs being overcharged to at least two NSF awards, as illustrated in Table 18.

Table 18: Proposed Indirect Cost Rates Applied

NSF Award Number	Award Date	Transaction Date	Rate Applied (%) ³⁵	Appropriate Rate (%) ³⁶
	12/29/2020	10/10/2022	44.00	45.00
	2/18/2022	10/4/2022	44.00	45.00

Source: Auditor summary of identified exceptions.

Conclusion

Because these instances of MSU charging indirect costs using proposed rates did not directly result in MSU charging unallowable costs to NSF awards, we are not noting a finding. However, we are noting an **area for improvement**, as MSU’s lack of a formal process and/or procedure for applying proposed indirect cost rates could cause it to charge unallowable costs to NSF awards if MSU’s indirect cost rates were to decrease in the future.

Consideration

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

- Directing MSU to develop formal policies and/or procedures regarding how to verify—and document verification of—its election to use proposed indirect cost rates. This should address how MSU will ensure the decision to use proposed indirect cost rates will not result in NSF being overcharged for indirect costs in cases when negotiated rates decrease within a single Negotiated Indirect Cost Rate Agreement (NICRA) or between the date an NSF award is proposed and the date it is awarded.

Sikich CPA LLC

(formerly known as Cotton & Company Assurance and Advisory, LLC)

January 19, 2024

³⁵ MSU’s NICRA dated September 17, 2015, established a predetermined indirect cost rate of 44 percent for on-campus research from July 1, 2014, to June 30, 2018. The same rate was provisional from July 1, 2018, until amended.

³⁶ MSU’s NICRA dated June 1, 2022, established a predetermined indirect cost rate of 44 percent for on-campus research from July 1, 2018, to June 30, 2022. Additionally, the NICRA established a predetermined indirect cost rate of 45 percent for on-campus research from July 1, 2022, to June 30, 2024.

APPENDIX A: MSU'S RESPONSE



December 15, 2023

Cotton & Company
333 John Carlyle Street, Suite 500
Alexandria, VA 22314

Attention: Andrew Holzer, CPA, CFE, CISA

Re: Formal Response from Montana State
University, NSF OIG Audit

Montana State University (MSU) appreciates the opportunity to work with the the National Science Foundation Office of Inspector General and Cotton & Company to examine our research accounting practices. MSU takes seriously our obligation to administer our sponsored awards in compliance with the Uniform Guidance and all applicable laws, policies, and procedures. MSU recognizes that one benefit of the audit is the opportunity to strengthen and improve our policies and procedures. We also appreciate that Cotton and Company acknowledged that COVID disruptions to travel during the time frame of the audited expenses, as well as MSU's cybersecutiry attack, created unusual challenges for the institution and our controls.

MSU will work with the National Science Foundation during the resolution process to further improve our oversight and controls regarding the expenditure of federal funds and will strengthen our compliance environment.

MSU has already reimbursed the NSF for \$3,906 via ACMS credits. Of the remaining questioned costs, MSU respectfully disagrees with \$82,280 of the findings, as outlined below. MSU will reimburse the NSF for the remaining findings.

Sincerely,



Sandy Sward, PhD
Associate VP Research Administration

**Office of Sponsored
Programs**

309 Montana Hall
PO Box 172470
Bozeman, MT 59717-2470
www.montana.edu
Tel: 406-994-2381
Fax: 406-994-7951
Email: research@montana.edu

Montana State University NSF Audit Report Response

Finding 1: Unallowable Expenses

Montana State University (MSU) has internal controls in place that reasonably assure that expenses that are charged to sponsored awards are allowable, allocable, reasonable and necessary for the project. MSU also has established controls to ensure that costs meet sponsor regulatory requirements as well as MSU policies and procedures. The unallowable expenses that were identified as a result of this audit will be further evaluated for areas where MSU can improve controls and strengthen administrative and management procedures.

Unallowable Indirect Costs

NSF Award No.	Unallowable Total	MSU Response
	\$72,578	<p>MSU respectfully disagrees with this finding. We believe this expenditure was accurately proposed, approved by NSF and expensed as a contracted service agreement. It does not represent a capital equipment purchase that would be excluded from the allowability of F&A's.</p> <p>The purpose of this NSF award was to study drought conditions which required assembling a plastic sheeting system simulating drought at high elevations. Useful life was uncertain and highly variable due to weather conditions. The investigator, when pressed, provided only a rough estimate of its potential useful life. Severe weather events would, understandably, drastically impact any useful-life estimate. This was the case with the previously constructed system for Phase I. The investigator was unable to reuse the deteriorated system due to the high elevation and intense UV damage.</p> <p>The expense was budgeted as a contracted service by the PI and approved by both the NSF Program Officer and the NSF Grants Officer. It was never envisioned as a piece of equipment. It was also never questioned by the NSF to be a capitalizable item. Please see the image below.</p> 

		Additionally, the PI transferred to a different institution. In that revised budget, the NSF again reviewed and approved the expense as contracted services. Nor did the receiving institution request a transfer of the gutter system as a piece of equipment.
██████████	\$5,269	MSU agrees with this finding but feels this was an unusual circumstance and not a reflection of MSU's overall subaward policies and procedures. The correct F&A rate of 26% for off-campus activity was applied to the NSF award, however the PI then transferred to ██████████. The resulting subaward was issued incorrectly at MSU's off-campus rate; rather than the off-campus rate for the new institution. MSU will repay NSF \$5,269 and strengthen its procedures for reviewing subawardee invoices and NICRA rates when investigators transfer institutions.

Unallowable Airfare Expenses

NSF Award No.	Unallowable Total	MSU Response
██████████	\$3,491	MSU agrees with this finding and will repay NSF \$3,491. MSU has clear guidance on travel expenses, but this situation occurred under unusual circumstances related to COVID. The initial conference/airfare was compliant with MSU policies; however, the trip was cancelled due to COVID, and significant travel delays resulted. The PI was issued a travel voucher by the airlines. The later use of that voucher was complicated and airline credit was applied to secure a subsequent ticket. This COVID voucher use then occurred outside of traditional MSU travel-related channels. Nevertheless, MSU has already provided additional training to campus on travel-related issues including the use of travel vouchers.
██████████	\$2,768	MSU agrees with this finding and will repay NSF \$2,768. Since the NSF award is still active it was anticipated that the traveler would utilize the airline credit to attend a future External Advisory Committee meeting. However, due to the length of time outstanding for this credit, the traveler agreed to repay MSU and has already done so.

Unallowable Use of Participant Support Funds

NSF Award No.	Unallowable Total	MSU Response
██████████	\$2,110	MSU agrees with this finding and will repay NSF \$2,110. This expense was incorrectly charged to the NSF award and has been removed.

Unallowable GRFP Payment

NSF Award No.	Unallowable Total	MSU Response

	\$665	MSU agrees with this finding and will repay NSF \$665.
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Finding 2: Inadequately Supported Expenses

Inadequately Supported Travel Expenses

MSU appreciates that the auditors recognized that these payments for airfare and lodging benefited the NSF projects. However, a COVID related emergency (closing international borders) and an unanticipated fire, resulted in travel-related emergencies that complicated strict adherence to travel-related policies and procedures requiring exceptions. MSU needed to balance concern for the safety of our investigators and students with exceptions allowed by the Uniform Guidance.

NSF Award No.	Unallowable Total	MSU Response
	\$2,308	MSU agrees with this finding and will repay NSF \$2,308. The pandemic, and the pending closure of the US borders, prompted the PI to work with a travel agent to rebook a complicated flight home from [REDACTED]. International borders were being closed and an extended stay in [REDACTED] would have been very expensive and would have kept [REDACTED] separated from [REDACTED] family in the U.S. [REDACTED] worked with a travel agent that converted [REDACTED] existing compliant ticket to a [REDACTED] option, and it was not feasible for [REDACTED] to print comparables to document that the ticket revision was the least expensive airfare at that time. This type of ticket also does not list the type of seat classification to reflect "economy" class. Therefore, MSU had no way to document it was the lowest fare to bring this investigator home. An excessively long stay in [REDACTED] due to closed borders would have been prohibitively expensive to the NSF thus justifying a case-by-case exception [200.475 UG(e)(iii)].
	\$9,702	MSU does not agree with this finding and we appreciate the auditor's acknowledgment that the NSF award benefitted from this expense. An emergency (fire) occurred during this approved travel and MSU's concern for the safety and wellbeing of the PI and [REDACTED] graduate student became paramount. Therefore, we do not feel this finding reflects weak controls or inadequate travel policies/procedures. The expense amount was supported by the original [REDACTED] charge, as reflected in the purchasing-card documentation provided to the auditors. However, MSU was not able to provide a formal lease agreement for the \$9,702 in lodging expenses. Additionally, a formal lease agreement is not required per MSU travel policies. While a lease agreement was discussed with MSU personnel due to the length of time the PI and graduate student were required to remain in travel status, it was dropped when the fire occurred, as the PI and student needed to vacate the premises. The monthly <i>lodging and subsistence</i> amount charged to the award meets the requirements of 200.475 UG (b)(2), as the costs were reasonable and consistent with MSU's established travel policy. The travel costs were also approved by the NSF in the proposal and the

		award. Given the unusual nature of these events, and adherence to MSU's travel policies, we believe the direct and indirect costs for this expense should be allowed.
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Inadequately Supported Internal Service Expenses

NSF Award No.	Unallowable Total	MSU Response
██████████	\$3,201	MSU agrees with this finding. A copy of MSU's 6% administrative fee policy was provided to the auditors. Unfortunately, a cyber incident occurred during the audit period leaving some internal documentation unretrievable. MSU will repay NSF \$3,201.
██████████	\$1,764	MSU agrees with this finding. Prior to the NSF audit, MSU hired a Core Facilities Manager. They are responsible for working with internal recharge centers to ensure review and approval of rates. MSU will repay NSF \$1,764.
██████████	\$5,040	MSU agrees with this finding. Prior to the NSF audit, MSU hired a Core Facilities Manager. They are responsible for working with internal recharge centers to ensure review and approval of rates. MSU will repay NSF \$5,040.

Finding 3: Inappropriately Allocated Expenses

Inappropriately Allocated Expense

NSF Award No.	Unallowable Total	MSU Response
██████████	\$1,221	MSU agrees with this finding and will repay NSF \$1,221. MSU will strengthen procedures to ensure appropriate allocation of publication expenses.
██████████	\$5,218	MSU agrees with this finding and will repay NSF \$5,218. MSU will strengthen procedures to ensure appropriate allocation of tuition expenses.

Finding 4: ACMS\$ Drawdowns that Exceeded Expenses

Unsupported ACM\$ Draw

NSF Award No.	Unallowable Total	MSU Response
██████████	\$3,906	MSU agrees with this finding and has returned the \$3,906 to the NSF ACM\$.

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Finding 5: Non-Compliance with MSU Policies

Non-Compliance with MSU Subaward Policy

NSF Award No.	Unallowable Total	MSU Response
[REDACTED]	\$0	MSU did not agree with this finding. However, subaward procedures were clarified in April of 2023 to address any ambiguity as to the intent of existing policies and internal controls. As noted in the audit document, MSU has already clarified the subaward invoice approval requirements thus reflecting the recommendations of the auditors.

APPENDIX B: OBJECTIVES, SCOPE, AND METHODOLOGY

OBJECTIVES

The NSF OIG Office of Audits engaged Sikich CPA LLC (formerly known as Cotton & Company Assurance and Advisory, LLC and herein referred to as “we”), to conduct an audit of the costs Montana State University (MSU) claimed on NSF awards during the audit period of performance (POP) of November 1, 2019, through October 31, 2022. The objectives of the audit were to evaluate MSU’s award management environment; to determine if costs claimed are allowable, allocable, reasonable, and in compliance with NSF award terms and conditions and applicable federal financial assistance requirements; and to determine whether any extraordinary circumstances existed that would justify further audit work beyond the original sample of 40 to 50 transactions.

SCOPE

The audit population included approximately \$37.7 million in expenses MSU claimed on 176 NSF awards during our audit POP of November 1, 2019, through October 31, 2022.

METHODOLOGY

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 (GL) data MSU provided by comparing the costs charged to NSF awards per MSU’s accounting records to the reported net expenditures reflected in the Award Cash Management \$ervice (ACM\$) drawdown requests.
 - Our work required us to rely on computer-processed data obtained from MSU and NSF OIG. NSF OIG provided award data MSU reported through NSF’s ACM\$ during our audit period.
 - We assessed the reliability of the GL data MSU provided by: (1) comparing the costs charged to NSF awards per MSU’s accounting records to the reported net expenditures reflected in the ACM\$ drawdown requests MSU submitted to NSF during the audit POP; and (2) reviewing the parameters that MSU used to extract transaction data from its accounting systems. We found MSU’s computer-processed data to be sufficiently reliable for the purposes of the audit. We did not identify any exceptions with the parameters MSU used to extract the accounting data.
 - 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.

MSU provided detailed transaction-level data to support \$37,746,555 in claimed costs charged to NSF awards during the audit period, which was less than the \$37,794,260 MSU claimed in ACM\$ for the 176 awards. Although MSU was able to provide justifications for most of the material discrepancies identified,³⁷ MSU did not support a portion of the costs claimed on one NSF award. As such, we questioned the unsupported amount in [Finding 4](#).

- This data resulted in a total audit universe of \$37,746,555 in expenses claimed on 176 NSF awards.
- Obtaining and reviewing all available accounting and administrative policies and procedures, external audit reports, desk review reports, and other relevant information MSU and NSF OIG provided, as well as any other relevant information that was available online.
- Summarizing our understanding of federal, NSF, and MSU-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 sponsored projects were reasonable, allocable, and allowable.
 - In planning and performing this audit, we considered MSU's internal controls within the audit's scope solely to understand the directives or policies and procedures MSU has in place to ensure that charges against NSF awards complied with relevant federal regulations, NSF award terms, and MSU policies.
- Providing MSU with a list of 50 transactions that we selected based on the results of our data analytics and requesting that MSU provide documentation to support each transaction.

³⁷ The majority of the variance between the GL data and the costs claimed in ACM\$ was the result of an NSF error that occurred on an award in 2009-2010 and that was therefore outside of the defined audit scope. Specifically, we determined that variance was a result of NSF providing an additional payment to MSU as a result of underfunding MSU's Graduate Research Fellowship Program (GRFP) award.

- Reviewing the supporting documentation MSU 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,³⁸ NSF,³⁹ and MSU policies.⁴⁰
- Holding virtual interviews and walkthroughs with MSU in March 2023 to discuss payroll (including fringe benefits and effort reporting), travel, participant support costs, procurement, equipment (including an inventory check), other direct costs (e.g., patent, relocation, recruiting, interest, advertising/public relations, entertainment, fundraising, lobbying, selling/marketing, and training costs), subawards, ACM\$ processing, indirect costs, and other general policies (e.g., pre- and post-award costs, program income, whistle-blower information, research misconduct, and conflict of interest policies).
- Summarizing the results of our fieldwork and confirming that we did not identify any extraordinary circumstances that justified the need for a second audit phase.⁴¹

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 MSU personnel to ensure MSU 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.

³⁸ We assessed MSU's compliance with 2 CFR Part 200, Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards (versions effective 12/26/2014 and 11/20/2020).

³⁹ We assessed MSU's compliance with NSF Proposal and Award Policies and Procedures Guides (PAPPGs) 16-1, 17-1, 18-1, 19-1, 20-1, and 22-1, and with NSF award-specific terms and conditions, as appropriate.

⁴⁰ We assessed MSU's compliance with its own internal policies and procedures surrounding costs budgeted for or charged to NSF awards.

⁴¹ Based on the areas of elevated risk of noncompliance identified during the initial phase, we determined that there was no need for an expanded audit phase.

APPENDIX C: SUMMARY OF QUESTIONED COSTS

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

Finding	Description	Questioned Costs		Total
		<i>Unsupported</i>	<i>Unallowable</i>	
1	Unallowable Expenses	\$0	\$86,881	\$86,881
2	Inadequately Supported Expenses	-	22,015	22,015
3	Inappropriately Allocated Expenses	-	6,439	6,439
4	ACM\$ Drawdowns That Exceeded Expenses	3,906	-	3,906
5	Non-Compliance with MSU Policies	-	-	-
Total		<u>\$3,906</u>	<u>\$115,335</u>	<u>\$119,241</u>

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	MSU Agreed to Reimburse
██████████	1	\$1,832	\$476	\$2,308	\$2,308
██████████	2	-	5,269	5,269	5,269
██████████	1	5,218	-	5,218	5,218
██████████	1	2,424	1,067	3,491	3,491
██████████	1	3,906	-	3,906	3,906
██████████	1	665	-	665	665
██████████	1	-	-	-	-
██████████	1	2,223	978	3,201	3,201
██████████	1	-	72,578	72,578	-
██████████	1	-	-	-	-
██████████	1	1,225	539	1,764	1,764
██████████	1	2,110	-	2,110	2,110
██████████	1	-	-	-	-
██████████	1	3,500	1,540	5,040	5,040
██████████	1	848	373	1,221	1,221
██████████	1	1,922	846	2,768	2,768
██████████	2	7,700	2,002	9,702	-
██████████	1	-	-	-	-
Total	20	<u>\$33,573</u>	<u>\$85,668</u>	<u>\$119,241</u>	<u>\$36,961</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

Finding No.	NSF Award No.	Description	Fiscal Year(s)	Direct	Indirect	Total	MSU Agreed to Reimburse
1) Unallowable Expenses	██████	August 2019 - November 2019 Indirect Costs	2020	\$0	\$72,578	\$72,578	\$0
	██████	April 2021 - August 2021 Indirect Costs	2021 - 2022	-	5,269	5,269	5,269
	██████	February 2020 Upgraded Airfare	2020	2,424	1,067	3,491	3,491
	██████	June 2022 Unused/Credited Airfare	2022	1,922	846	2,768	2,768
	██████	September 2022 Non-Participant Costs	2023	2,110	-	2,110	2,110
	██████	April 2019 - June 2020 GRFP Overpayment	2019 - 2020	665	-	665	665
2) Inadequately Supported Expenses	██████	February 2020 Airfare	2020	1,832	476	2,308	2,308
	██████	May 2022 Lodging	2022	7,700	2,002	9,702	-
	██████	January 2020 Internal Services	2020	2,223	978	3,201	3,201
	██████	December 2020 Internal Services	2021	1,225	539	1,764	1,764
	██████	October 2021 Internal Services	2022	3500	1540	5,040	5,040
3) Inappropriately Allocated Expenses	██████	July 2021 Publication	2022	848	373	1,221	1,221
	██████	January 2022 Tuition	2022	5,218	-	5,218	5,218
4) ACM\$ Drawdowns That Exceeded Expenses	██████	ACM\$ Draws That Exceeded Accumulated Expenses	2023	3,906	-	3,906	3,906
5) Non-Compliance with MSU Policies	██████	Non-Compliance with MSU Subaward Invoice Procedure	2021	-	-	-	-

Finding No.	NSF Award No.	Description	Fiscal Year(s)	Direct	Indirect	Total	MSU Agreed to Reimburse
	██████	Non-Compliance with MSU Subaward Invoice Procedure	2022	-	-	-	-
	██████	Non-Compliance with MSU Subaward Invoice Procedure	2023	-	-	-	-
	██████	Non-Compliance with MSU Subaward Invoice Procedure	2023	-	-	-	-
	██████	Non-Compliance with MSU Business Procedures Manual	2021	-	-	-	-
	██████	Non-Compliance with MSU Business Procedures Manual	2022	-	-	-	-
Total				<u>\$33,573</u>	<u>\$85,668</u>	<u>\$119,241</u>	<u>\$36,961</u>

Source: Auditor summary of identified exceptions.

APPENDIX D: SUMMARY OF RECOMMENDATIONS AND CONSIDERATIONS

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

- 1.1. Resolve the \$72,578 in questioned indirect costs for which MSU has not agreed to reimburse NSF and direct MSU to repay or otherwise remove the sustained questioned costs from its NSF awards.
- 1.2. Direct MSU to provide documentation supporting that it has repaid or otherwise credited the \$14,303 in questioned airfare, participant support costs, and Graduate Research Fellowship Program (GRFP) expenses for which it has agreed to reimburse NSF.
- 1.3. Direct MSU to strengthen its policies and procedures related to the capitalization of constructed equipment. Updated policies should require MSU to capitalize any constructed items that meet its definition of equipment and exclude the cost of these items from its modified total direct cost base.
- 1.4. Direct MSU to develop formal policies and procedures for reviewing subawardee invoices to verify that the subawardee is appropriately applying indirect costs using the rate(s) included in the subawardee's approved Negotiated Indirect Cost Rate Agreement(s) before approving the invoice for payment.
- 1.5. Direct MSU to strengthen its procedures for booking and approving travel expenses. Updated procedures could include:
 - Requiring travelers to perform a cost comparison when booking flights that include any unallowable upgrades so the travelers are able to document the difference in cost between the standard economy airfare and the airfare including the upgrades.
 - Requiring personnel approving expense reports to verify that travelers actually performed the scheduled travel and that the travelers did not claim expenses for any unused, credited, or refunded expenses prior to approving expense reports.
- 1.6. Direct MSU to implement additional procedures that require routine reviews of all expenses charged to NSF awards as participant support costs to verify that MSU incurred the costs to support NSF award participants.
- 1.7. Direct MSU to strengthen its procedures surrounding GRFP stipend payments. Updated procedures should ensure that MSU pays GRFP stipends using the stipend rate identified in the relevant NSF GRFP solicitation.
- 2.1. Resolve the \$9,702 in questioned inadequately supported lodging expenses for which MSU has not agreed to reimburse NSF and direct MSU to repay or otherwise remove the sustained questioned costs from its NSF awards.

- 2.2. Direct MSU to provide documentation supporting that it has repaid or otherwise credited the \$12,313 in questioned airfare and internal service expenses for which it has agreed to reimburse NSF.
- 2.3. Direct MSU to strengthen its policies and procedures surrounding the review of expense reports to require reviewers to verify that travelers have supported all costs claimed as allowable per federal and NSF regulations before charging the costs to NSF awards. Updated policies should ensure that travelers:
 - Provide itemized receipts when booking travel through travel agencies.
 - Support all lodging costs claimed with documentation that includes an agreed-upon rate (such as a hotel receipt or a formal lease agreement).
- 2.4. Direct MSU to develop formal policies and procedures for establishing internal service provider rate agreements and for verifying that MSU has appropriately reviewed and approved the rate agreements before charging those rates to NSF awards.
- 3.1 Direct MSU to provide documentation supporting that it has repaid or otherwise credited the \$6,439 in questioned publication and tuition expenses for which it has agreed to reimburse NSF.
- 3.2 Direct MSU to strengthen its policies and procedures and internal controls for allocating expenses to sponsored projects. Updated procedures could require:
 - Individuals incurring publication expenses to document and justify the allocation methodology used when publishing research that identifies multiple sponsoring funding sources.
 - MSU to remove all costs charged to NSF awards for tuition that relates to time period(s) after the award's period of performance has expired as part of the award close-out activities and verify that it allocates tuition consistent with student effort.
- 4.1 Direct MSU to provide documentation supporting that it has repaid or otherwise credited the \$3,906 in questioned Award Cash Management Service drawdowns for which it has agreed to reimburse NSF.
- 4.2 Direct MSU to strengthen the administrative and management internal controls and procedures surrounding its Award Cash Management Service reconciliation process. Updated controls could include:
 - Requiring MSU to develop a formal procedure regarding how to calculate the appropriate amount of funding to draw down on NSF awards with expiring

appropriations. This procedure should ensure that MSU documents how it determined the appropriate amount to draw down and returns any unused funds to NSF in a timely manner.

- Requiring an individual who is independent from the standard Award Cash Management Service drawdown process to perform periodic reconciliations of Award Cash Management Service drawdowns to MSU general ledger expenses for each NSF award, as well as to conduct a final review and reconciliation at award close-out.

- 5.1 Direct MSU to verify that all of its current subaward policies accurately reflect its subaward invoice approval requirements.
- 5.2 Direct MSU to implement internal controls that require personnel to create contract service agreements to support all consultant services and maintain the agreements throughout the contract's period of performance and after its expiration date in accordance with its record retention policies.
- 5.3 Direct MSU to conduct annual travel expense reporting trainings for individuals who may travel for sponsored projects. The annual training should emphasize all Travel – Meals and Lodging requirements included in MSU's *Business Procedures Manual*, including the requirement to use University purchase cards.

Additionally, we suggest that NSF's Director of the Division of Institution and Award Support consider:

- Directing MSU to develop formal policies and/or procedures regarding how to verify—and document verification of—its election to use proposed indirect cost rates. This should address how MSU will ensure the decision to use proposed indirect cost rates will not result in NSF being overcharged for indirect costs when negotiated rates decrease within a single Negotiated Indirect Cost Rate Agreement (NICRA) or between the date an NSF award is proposed and the date it is awarded.

APPENDIX E: GLOSSARY

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.**](#)

Factors affecting allowability of costs. The tests of allowability of costs under these principles are: costs must meet the following general criteria in order to be allowable under Federal awards: (a) Be necessary and reasonable (b) Conform to any limitations or exclusions set forth in these principles or in the Federal award (c) Be consistent with policies and procedures (d) Be accorded consistent treatment (e) Be determined in accordance with generally accepted accounting principles (GAAP) (f) Not be included as a cost or used to meet cost sharing or matching requirements of any other federally-financed program (g) Be adequately documented. (2 CFR § 200.403 and Revised 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.**](#)

Consultant Services (Professional Service costs). This refers to costs of professional and consultant services rendered by persons who are members of a particular profession or possess a special skill, and who are not officers or employees of the non-federal entity, which are allowable, subject to paragraphs (b) and (c) when reasonable in relation to the

services rendered and when not contingent upon recovery of the costs from the federal government. (2 CFR § 200.459 and 2 CFR Revision § 200.459)

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

Equipment. Tangible personal property—including information technology (IT) systems—having a useful life of more than 1 year and a per-unit acquisition cost which equals or exceeds the lesser of the capitalization level established by the non-federal entity for financial statement purposes, or \$5,000. (2 CFR § 200.33)

[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. Except as provided elsewhere in these principles, the costs of fringe benefits are allowable provided that the benefits are reasonable and are required by law, non-federal entity-employee agreement, or an establishment policy of the non-federal entity. (2 CFR § 200.431 and 2 CFR Revision § 200.431)

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

Graduate Research Fellowship Program (GRFP). The purpose of the NSF GRFP is to help ensure the quality, vitality, and diversity of the scientific and engineering workforce of the United States. A goal of the program is to broaden participation of the full spectrum of diverse talents in STEM. The program recognizes and supports outstanding graduate students in NSF-supported science, technology, engineering, and mathematics disciplines who are pursuing research-based master's and doctoral degrees at accredited United States institutions. Fellowships provide the student with a three-year annual stipend along with a cost of education allowance for tuition and fees (paid to the institution), as well as access to opportunities for professional development available to NSF-supported graduate students. Fellowships may only be used for an eligible graduate degree program at an academic institution accredited in, and having a campus located in, the US, its territories, possessions, or the Commonwealth of Puerto Rico. (<https://www.nsfgrfp.org/about/about-grfp/>)

[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.](#)

Modified Total Direct Cost (MTDC). All direct salaries and wages, applicable fringe benefits, materials and supplies, services, travel, and up to the first \$25,000 of each subaward (regardless of the period of performance (POP) of the subawards under the

award). MTDC excludes equipment, capital expenditures, charges for patient care, rental costs, tuition remission, scholarships and fellowships, participant support costs and the portion of each subaward in excess of \$25,000. Other items may only be excluded when necessary to avoid a serious inequity in the distribution of indirect costs, and with the approval of the cognizant agency for indirect costs. (2 CFR § 200.68 and Revised 2 CFR § 200.1)

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

Negotiated Indirect Cost Rate. Generally charged to federal awards through the development and application of an indirect cost rate. In order to recover indirect costs related to federal awards, most organizations must negotiate an indirect cost rate with the federal agency that provides the preponderance of funding, or Health and Human Services (HHS) in the case of colleges and universities. (NSF Office of Budget, Finance, and Award Management)

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

Participant Support Costs. This refers to direct costs for items such as stipends or subsistence allowances, travel allowances, and registration fees paid to or on behalf of participants or trainees (but not employees) in connection with conferences or training projects. (2 CFR § 200.75)

[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 and Award Policies and 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 20-1)

[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.](#)

Subaward. An award provided by a pass-through entity to a subrecipient for the subrecipient to carry out part of a federal award received by the pass-through entity. It does not include payments to a contractor or payments to an individual that is a beneficiary of a federal program. A subaward may be provided through any form of legal agreement, including an agreement that the pass-through entity considers a contract. (2 CFR § 200.92 and Revised 2 CFR § 200.1)

[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.

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

National Defense Authorization Act

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, no later than March 6, 2024. We request that comments be in .pdf format, be free from any proprietary or otherwise sensitive information, and not exceed two pages. Please note, a response that does not satisfy the purpose set forth by the statute will not be attached to the final report.

About Us

NSF OIG was established in 1989, in compliance with the *Inspector General Act of 1978* (5 USC 401-24). Our mission is to provide independent oversight of NSF to improve the effectiveness, efficiency, and economy of its programs and operations and to prevent and detect fraud, waste, and abuse.

Contact Us

Address:

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

Phone: 703-292-7100

Website: oig.nsf.gov

Follow us on X (formerly Twitter): twitter.com/nsfoig

Congressional, media, and general inquiries: OIGPublicAffairs@nsf.gov

Freedom of Information Act inquiries: FOIAOIG@nsf.gov

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- Anonymous Hotline: 1-800-428-2189
- Mail: 2415 Eisenhower Avenue, Alexandria, VA 22314 ATTN: OIG HOTLINE

Have a question about reporting fraud, waste, or abuse? Email OIG@nsf.gov.

Whistleblower Retaliation Information

All NSF employees, contractors, subcontractors, awardees, and subawardees are protected from retaliation for making a protected disclosure. If you believe you have been subject to retaliation for protected whistleblowing, or for additional information on whistleblower protections, please visit oig.nsf.gov/whistleblower.