



National  
Science  
Foundation

NSF's Response to the  
Office of Inspector General's  
*Semiannual Report to Congress*  
Fall 2023





**Karen Marrongelle**  
National Science Foundation  
Chief Operating Officer

NSF Management appreciates the opportunity to respond to the Office of Inspector General's (OIG) Semiannual Report for the period from April 1, 2023, through September 30, 2023. NSF is committed to fostering innovation anywhere and opportunity everywhere. Accordingly, this Response highlights the ways the OIG's work enhances NSF's support of science and engineering in all 50 states and U.S. territories.

### ***Introduction***

The cover of this Management Response, depicting quantum dot technology for which two NSF-supported researchers were co-recipients of the 2023 Nobel Prize in chemistry, represents the realization of this vision. Today, quantum dots (a few nanometers in diameter) are manufactured into products that are part of our everyday lives – TVs, computers, and smartphones – and in the future, could be used in technologies such as flexible electronics, tiny sensors, and quantum computers. Reaching back to its inception, NSF has funded 262 Nobel Prize recipients, including recipients of the 2023 Nobel Prizes for physics and economics. NSF will continue to invest in the research and people whose bold visions, ingenuity, and hard work push the frontiers of knowledge for the future.

NSF's support of these groundbreaking discoveries is built on the solid foundation of careful stewardship of public funds. We remain steadfast in our commitment to strong oversight, recognizing the important contributions of the OIG's activities to this common goal. To that end, this Response describes the ways NSF's ecosystem of oversight is informed and enhanced by the robust and innovative audits and investigations by our OIG.

### ***Overview of NSF's Ecosystem of Oversight***

NSF's ecosystem of oversight is necessarily more comprehensive than the activities set out in the OIG's Semiannual Report. The ecosystem encompasses internal checks throughout the grant lifecycle that facilitate the administration of awards and monitoring of the institutions receiving those awards (the recipient institutions). At the same time, NSF adapts our existing controls to meet new challenges and funding resources.

Three types of activities highlight this ecosystem. First, NSF's Office of Budget, Finance and Award Management (BFA) conducts an annual risk assessment of open awards and recipient institutions to determine the comparative level of risk for each recipient. This assessment assists NSF in prioritizing which institutions will receive advanced oversight and calibrating the oversight to the type and degree of risk.

Second, during the post-award administration process, BFA conducts baseline monitoring, which seeks to verify that recipient institutions implement awards in compliance with Federal regulations and NSF's award terms and conditions. This activity, conducted on all grants and cooperative agreements, results in the identification of exceptions and potential issues that require immediate attention or that may require further scrutiny.

Third, informed by annual risk assessments and other activities, BFA conducts advanced monitoring activities focused on institutions managing higher-risk awards. Advanced monitoring includes desk reviews, site visits, Business Systems Reviews, NSF-initiated audits of incurred costs and accounting systems, and audits and reviews of major facilities. BFA also reviews the financial management capabilities of new, potential recipients prior to issuing an award and resolves a variety of issues related to the recipients' management practices identified in the Federally-mandated single audits of those institutions.

### ***Leveraging the OIG's Innovations to Improve NSF's Oversight***

NSF's ecosystem of oversight is amplified through strong engagement with the OIG. We view our OIG as innovators and leaders in the IG community with unique expertise for investigations and audits related to grants and cooperative agreements. This view is reflected in the numerous awards our OIG has received from the Council of Inspectors General on Integrity and Efficiency.

Through engagement with the OIG's Office of Investigation, NSF leverages two significant oversight mechanisms to mitigate the risk to Federal funds consisting of (1) suspensions, terminations, and other administrative actions related to awards; and (2) Government-wide suspensions of recipients and related parties. OIG recommendations for actions related to awards and recipients are prioritized by NSF in view of the imminent risk to Federal funds. For example, BFA may suspend an award within a few days of the OIG issuing its recommendation. NSF further notes that, while there may be a multi-agency investigation underway, it is often our OIG and NSF that recommend and impose, respectively, the earliest actions related to the associated NSF awards and recipients. And we recognize that our collaborative relationship helps safeguard Federal funds from imminent risk. Correspondingly, we extend our appreciation to the OIG for its significant contributions to U.S. Department of Justice investigations that yielded over \$3.5M in recoveries over this Semiannual Reporting period.

Similarly, our constructive relationship with the OIG's Office of Audits helps enhance our oversight ecosystem, in at least three ways. First, based on concerns identified by activities such as post-grant oversight and advanced monitoring by BFA, NSF has provided input for the OIG's audit plans, including audits of recipient institutions and internal programs. The OIG has initiated related audits that have resulted in recommendations to address NSF's underlying concerns.

Second, NSF regularly initiates corrective actions related to the OIG's audits of NSF internal controls, operations, and financial management before the final audit reports are issued. We believe that the OIG's innovative practice of issuing formal Notices of Potential Findings and Recommendations (NPFRRs) during the audit process promotes ongoing dialogue with the OIG and enables NSF to take early and substantial action. We also appreciate that the OIG extends NSF the courtesy of recognizing our responsive actions in its audit reports.

Third, over a decade ago, BFA and the OIG's Office of Audits established the Stewardship Collaborative to advance the resolution process of OIG's audits of recipient institutions (external audits). The work of the Stewardship Collaborative has encompassed identifying root causes of common findings, improving communications to awardees, and sharing perspectives on Office of Management and Budget (OMB) guidance documents. NSF also conducts outreach to the awardee community about common issues and findings related to OIG audit resolutions, with the goal of heading off problems before they mature into audit findings. As such, the impact of a given audit resolution may extend beyond a single awardee. NSF further credits the OIG with its analysis of common findings across external audits and sharing promising practices by recipients to help avoid them.

More information about NSF's external audit resolution activities is set out in the Management Report on Final Actions Taken (also known as the Final Action Tables). The Final Action Tables report data arising from the OIG's audits of NSF's awardees, including (1) the status of NSF's resolution of the OIG's audit reports; and (2) costs disallowed and disposition of recommendations by NSF during the reporting period.\*

### **Conclusion**

We close by recognizing that strong oversight and stewardship of taxpayer dollars are vital to NSF delivering on its mission *to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense* on behalf of the American people. NSF's ecosystem of oversight is complemented and enhanced by the OIG's audits and investigations. Sharing concerns with the OIG and taking actions responsive to the OIG's work will help NSF continue supporting groundbreaking researchers and the discoveries on the horizon.

\* For clarity, we note that the attached Final Action Tables do not report data on recommendations arising from the OIG's audits of NSF's operations and programs (internal audits). Only a small subset of such recommendations issued before the start of this Semiannual Reporting period remain open, consisting of 24 recommendations from 9 internal audits. None of these recommendations include questioned costs or funds put to better use. For context, NSF's practice for internal audits is to reach agreement with the OIG with respect to the corrective action plans responsive to the recommendations and the sufficiency of actions to close them. NSF and the OIG also engage regularly on the progress of plans responsive to internal audits, including target dates, to ensure that there is agreement and clarity on the paths forward toward recommendation closure. In view of this process, the management decisions and final actions by NSF align with the OIG's resolution and closure of these recommendations.



**Karen Marrongelle**  
National Science Foundation  
Chief Operating Officer



**Management Decisions Made on OIG External Audit Reports  
for the Six-Month Period Ended September 30, 2023**

	Number of Reports	Dollar Value
A. Audit reports pending management decisions at the beginning of the period	29	\$5,553,012
(1) Questioned Costs	29	\$5,553,012
(2) Funds Put to Better Use	0	\$0
B. Audit reports issued during the reporting period	4	\$7,396
(1) Questioned Costs	4	\$7,396
(2) Funds Put to Better Use	0	\$0
C. Total audit reports pending management decisions this reporting period (A+B)	33	\$5,560,408
D. Audit reports for which a management decision was made during the reporting period (Disallowed Costs)	4	\$267,998
(1) Questioned Costs	4	\$402,177
(a) Disallowed Costs	4	\$267,998
(b) Allowed Costs	4	\$134,179
(2) Funds Put to Better Use	0	n/a
E. Audit reports pending management decisions at the end of the period	29	\$5,158,231
(1) Questioned Costs	28	\$5,158,231
(2) Funds Put to Better Use	0	\$0
F. Total Reports (D+E)	33	

**Final Actions Taken on Audits with Management Decisions  
for the Six-Month Period Ended September 30, 2023**

	Number of Recommendations	Dollar Value
A. Audit reports with management decisions on which final action had not been taken at the beginning of the period	150	\$3,000,391
B. Audit reports on which management decisions were made during the period	63	\$267,998
C. Total audit reports pending final action during this period (Total A+B)	213	\$3,268,389
D. Audit reports on which final action was taken during this period	162	\$1,592,027
(1) Recoveries		
(a) Collection and Offset		\$1,592,027
(b) Amount uncollectible		
(2) Write-offs		
(3) Implemented Recommendations	162	
E. Audit reports needing final action at the end of the reporting period and unimplemented recommendations (C-D) <b>See detailed table for explanations why final actions are not complete.</b>	51	\$1,676,362
F. Total (D+E)	213	\$3,268,389

**Management Decisions Made on OIG External Audit Reports  
for the Period Ended September 30, 2023**

<b>A. Audit reports pending management decisions at the beginning of the period:</b>			<b>No. of Recommendations</b>	<b>Questioned Costs</b>	<b>Funds Put to Better Use</b>
1	19-1-010	University of Maryland College Park	19	\$357,108	\$0
2	19-1-017	Oregon State University	24	\$369,532	\$0
3	20-1-004	University of North Carolina at Chapel Hill	43	\$744,671	\$0
4	20-1-005	University of Houston	30	\$133,305	\$0
5	20-1-007	Yale University	36	\$251,973	\$0
6	21-1-002	Texas A&M University	24	\$137,558	\$0
7	21-1-004	University of Florida	17	\$640,723	\$0
8	21-1-007	Clemson University	35	\$276,440	\$0
9	21-1-008	Emory University	8	\$89,884	\$0
10	21-1-017	Tennessee State University	13	\$155,432	\$0
11	21-1-019	University of Pittsburgh	12	\$106,659	\$0
12	21-1-020	University of California-San Francisco	20	\$136,810	\$0
13	22-1-001	University of Rhode Island	21	\$627,748	\$0
14	22-1-002	University of Texas at Dallas	24	\$249,210	\$0
15	22-1-003	University of California - Merced	33	\$226,652	\$0
16	22-1-006	California Polytechnic State University Foundation	13	\$30,177	\$0
17	22-1-007	San Francisco State University	6	\$260	\$0
18	22-1-008	Education Development Center	12	\$88,089	\$0
19	22-1-009	BSCS Science Learning	16	\$158,050	\$0
20	22-1-011	Arctic Research Consortium of the U.S.	10	\$14,847	\$0
21	22-1-012	North Carolina Central University	14	\$60,320	\$0
22	22-1-013	Colorado School of Mines	10	\$10,260	\$0
23	22-6-006	Massachusetts Institute of Technology	5	\$0	\$0
24	23-1-001	Cary Institute of Ecosystem Studies	15	\$33,024	\$0
25	23-1-002	Computing Research Association	27	\$319,674	\$0
26	23-1-003	University of Mississippi	16	\$129,951	\$0
27	23-1-004	University of North Carolina at Charlotte	10	\$6,048	\$0
28	23-1-005	Incorporated Research Institutions for Seismology (IRIS)	5	\$470	\$0
29	23-1-006	Rensselaer Polytechnic Institute	22	\$198,137	\$0
<b>Subtotal A</b>			<b>540</b>	<b>\$5,553,012</b>	<b>\$0</b>

**Management Decisions Made on OIG External Audit Reports  
for the Period Ended September 30, 2023**

<b>B. Audit reports issued this six-month reporting period</b>			<b>No. of Recommendations</b>	<b>Questioned Costs</b>	<b>Funds Put to Better Use</b>
1	23-1-007	Ohio State University	5	\$960	\$0
2	23-1-008	Smithsonian Institution Astrophysical Observatory	4	\$2,496	\$0
3	23-1-009	Monterey Bay Aquarium Research Institute	5	\$2,891	\$0
4	23-1-010	University of Connecticut Health Center	5	\$1,049	\$0
<b>Subtotal B</b>			<b>19</b>	<b>\$7,396</b>	<b>\$0</b>

<b>C. Total audit reports pending management decisions this reporting period (Total A+B: 33)</b>	<b>559</b>	<b>\$5,560,408</b>	<b>\$0</b>
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<b>D. Audit reports for which a management decision was made during the reporting period</b>			<b>No. of Recommendations</b>	<b>Questioned Costs</b>	<b>Funds Put to Better Use</b>	<b>Disallowed Costs</b>
1	20-1-007	Yale University	36	\$251,973	\$0	\$172,213
2	21-1-008	Emory University	8	\$89,884	\$0	\$35,465
3	22-1-012	North Carolina Central University	14	\$60,320	\$0	\$60,320
4	22-6-006	Massachusetts Institute of Technology	5	\$0	\$0	\$0
<b>Subtotal D</b>			<b>63</b>	<b>\$402,177</b>	<b>\$0</b>	<b>\$267,998</b>

**Management Decisions Made on OIG External Audit Reports  
for the Period Ended September 30, 2023**

<b>E. Audit reports pending management decisions at the end of the period:</b>			<b>No. of Recommendations</b>	<b>Questioned Costs</b>	<b>Funds Put to Better Use</b>
1	19-1-010	University of Maryland College Park	19	\$357,108	\$0
2	19-1-017	Oregon State University	24	\$369,532	\$0
3	20-1-004	University of North Carolina at Chapel Hill	43	\$744,671	\$0
4	20-1-005	University of Houston	30	\$133,305	\$0
5	21-1-002	Texas A&M University	24	\$137,558	\$0
6	21-1-004	University of Florida	17	\$640,723	\$0
7	21-1-007	Clemson University	35	\$276,440	\$0
8	21-1-017	Tennessee State University	13	\$155,432	\$0
9	21-1-019	University of Pittsburgh	12	\$106,659	\$0
10	21-1-020	University of California-San Francisco	20	\$136,810	\$0
11	22-1-001	University of Rhode Island	21	\$627,748	\$0
12	22-1-002	University of Texas at Dallas	24	\$249,210	\$0
13	22-1-003	University of California - Merced	33	\$226,652	\$0
14	22-1-006	California Polytechnic State University Foundation	13	\$30,177	\$0
15	22-1-007	San Francisco State University	6	\$260	\$0
16	22-1-008	Education Development Center	12	\$88,089	\$0
17	22-1-009	BSCS Science Learning	16	\$158,050	\$0
18	22-1-011	Arctic Research Consortium of the U.S.	10	\$14,847	\$0
19	22-1-013	Colorado School of Mines	10	\$10,260	\$0
20	23-1-001	Cary Institute of Ecosystem Studies	15	\$33,024	\$0
21	23-1-002	Computing Research Association	27	\$319,674	\$0
22	23-1-003	University of Mississippi	16	\$129,951	\$0
23	23-1-004	University of North Carolina at Charlotte	10	\$6,048	\$0
24	23-1-005	Incorporated Research Institutions for Seismology (IRIS)	5	\$470	\$0
25	23-1-006	Rensselaer Polytechnic Institute	22	\$198,137	\$0
26	23-1-007	Ohio State University	5	\$960	\$0
27	23-1-008	Smithsonian Institution Astrophysical Observatory	4	\$2,496	\$0
28	23-1-009	Monterey Bay Aquarium Research Institute	5	\$2,891	\$0
29	23-1-010	University of Connecticut Health Center	5	\$1,049	\$0
		<b>Subtotal E</b>	<b>496</b>	<b>\$5,158,231</b>	<b>\$0</b>

<b>F. Reconciliation total audit reports (Total D+E: 33)</b>			<b>559</b>	<b>\$5,560,408</b>	<b>\$0</b>
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**Final Actions Taken on Audits with Management Decisions  
for the Six-Month Period Ended September 30, 2023**

<b>A. Audit Reports with management decisions on which final action had not been taken at the beginning of the period:</b>			<b>Reported Recommendations</b>	<b>Disallowed Costs</b>	<b>Open Recommendations</b>	<b>Pending Repayment</b>
1	19-1-016	Ohio State University <sup>1</sup>	22	\$386,368	22	\$386,368
2	20-1-001	University of Colorado at Boulder	15	\$68,303	15	\$68,303
3	20-1-008	Duke University	48	\$663,284	48	\$663,284
4	21-1-001	University of Kansas Center for Research Inc	11	\$1,550,054	11	\$1,550,054
5	21-1-003	University of Wyoming	15	\$256,351	15	\$256,351
6	21-1-009	University of New Mexico	9	\$3,681	9	\$3,681
7	21-1-010	SUNY at Stony Brook	10	\$31,341	10	\$31,341
8	21-1-011	Florida International University	9	\$22,144	9	\$22,144
9	21-1-014	California Institute of Technology (Caltech)	11	\$18,865	11	\$18,865
<b>Subtotal A</b>			<b>150</b>	<b>\$3,000,391</b>	<b>150</b>	<b>\$3,000,391</b>

<b>B. Audit Reports on which management decisions were made during the period:</b>			<b>Reported Recommendations</b>	<b>Disallowed Costs</b>	<b>Open Recommendations</b>	<b>Pending Repayment</b>
1	20-1-007	Yale University	36	\$172,213	36	\$172,213
2	21-1-008	Emory University	8	\$35,465	8	\$35,465
3	22-1-012	North Carolina Central University	14	\$60,320	14	\$60,320
4	22-6-006	Massachusetts Institute of Technology	5	\$0	5	\$0
<b>Subtotal B</b>			<b>63</b>	<b>\$267,998</b>	<b>63</b>	<b>\$267,998</b>

<b>C. Total Recommendations Pending Final Action During This Period:</b>					<b>213</b>	<b>\$3,268,389</b>
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<b>D. Audit Reports on which final action was taken during this period:</b>			<b>Reported Recommendations</b>	<b>Disallowed Costs</b>	<b>Closed Recommendations</b>	<b>Repaid</b>
1	19-1-016	Ohio State University <sup>1</sup>	22	\$386,368	22	\$386,368
2	20-1-001	University of Colorado at Boulder	15	\$68,303	15	\$68,303
3	21-1-003	University of Wyoming	15	\$256,351	9	\$256,351
4	20-1-007	Yale University	36	\$172,213	36	\$172,213
5	20-1-008	Duke University	48	\$663,284	48	\$663,284
6	21-1-008	Emory University	8	\$35,464	5	\$0
7	21-1-010	SUNY at Stony Brook	10	\$31,341	6	\$31,341
8	21-1-011	Florida International University	9	\$22,144	5	\$14,167
9	22-1-012	North Carolina Central University	14	\$60,320	11	\$0
10	22-6-006	Massachusetts Institute of Technology	5	\$0	5	\$0
<b>Subtotal D</b>			<b>182</b>	<b>\$1,695,788</b>	<b>162</b>	<b>\$1,592,027</b>

**Final Actions Taken on Audits with Management Decisions  
for the Six-Month Period Ended September 30, 2023**

E. Audit Reports needing final action at the end of the period:			Reported Recommendations	Disallowed Costs	Open Recommendations	Pending Repayment	Explanation Why Final Action is Not Complete
1	21-1-001	University of Kansas Center for Research Inc	11	\$1,550,054	11	\$1,550,054	b
2	21-1-003	University of Wyoming	15	\$256,351	6	\$0	b
3	21-1-008	Emory University	8	\$35,465	3	\$35,465	a
4	21-1-009	University of New Mexico	9	\$3,681	9	\$3,681	b
5	21-1-010	SUNY at Stony Brook	10	\$31,341	4	\$0	b
6	21-1-011	Florida International University	9	\$22,144	4	\$7,977	a
7	21-1-014	California Institute of Technology	11	\$18,865	11	\$18,865	a
8	22-1-012	North Carolina Central University	14	\$60,320	3	\$60,320	a
<b>Subtotal E</b>			<b>87</b>	<b>\$1,978,221</b>	<b>51</b>	<b>\$1,676,362</b>	

**F. Reconciliation of Recommendations:**

**213**

**\$3,268,389**

<sup>1</sup> The NSF sustained amount is \$463,523; however, NSF's consideration of circumstances and alternative documentation resulted in a management decision to disallow and require repayment of \$386,368.

Final actions are completed when all recommendations are closed and all disallowed costs have been repaid. Explanations why final actions are not complete:

- a. The management decision was made during the preceding year.
- b. NSF Management continues to aggressively pursue final actions to fully implement audit recommendations.