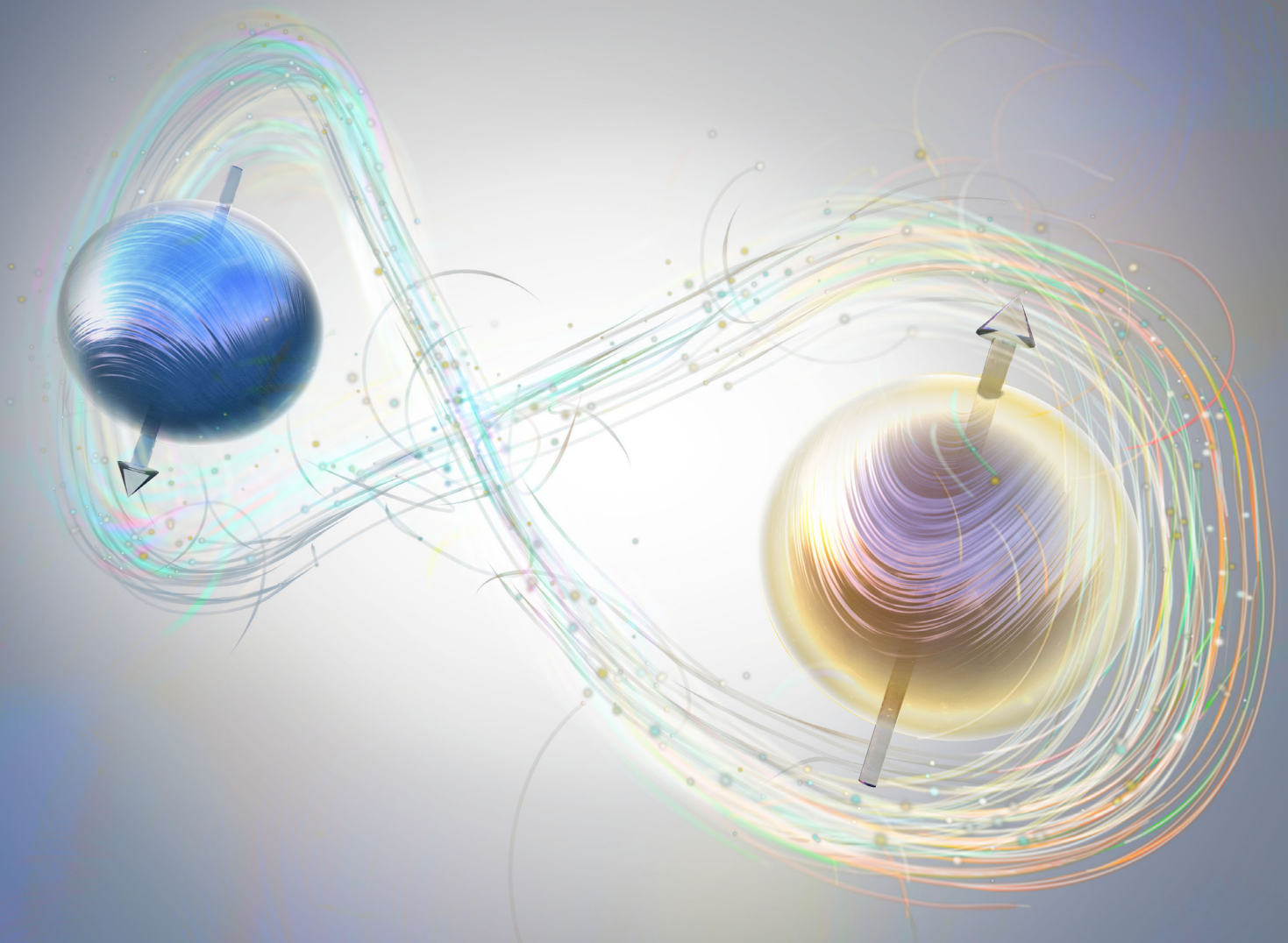




National
Science
Foundation



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

Fall 2022



Karen Marrongelle
*National Science Foundation
Chief Operating Officer*

NSF Management appreciates the opportunity to provide this response to the Office of Inspector General's (OIG) Semiannual Report for the period from April 1, 2022, through September 30, 2022. This period has been exciting for NSF, bringing the enactment of the CHIPS and Science Act (CHIPS). CHIPS will make crucial investments in the most innovative ideas across all areas of science and engineering and will accelerate their application to help solve today's challenges and tomorrow's at speed and scale. At this critical time, we recognize and value the contributions of the OIG which, in alignment with NSF's longstanding commitment to the responsible and effective stewardship of taxpayer funds, will help fulfill the promise of CHIPS.

CHIPS will continue the investments by NSF in research that, over the past seven decades, have supported groundbreaking discoveries and inspired and trained early-stage researchers. The cover of this Management Response, which depicts the nature of quantum entanglement for which two NSF-supported researchers were co-recipients of the 2022 Nobel Prize in physics, exemplifies the realization of the promise of this support. NSF has also supported the research work of two co-recipients, including through an early-stage career award, of the 2022 Nobel Prize in chemistry for the development of "click chemistry." The breakthrough discoveries by the Nobel Prize recipients transformed their respective fields, and, collectively, paved the way for new applications related to quantum computing and the development of novel drugs and therapies.

Correspondingly, NSF's vision to lead the world for science and engineering research and innovation rests upon the foundation of excelling as a federal agency. Our learning culture, which emphasizes continuous improvements in programs and operations, is strengthened by the OIG's oversight activities. The OIG's work helps NSF identify and address potential new risks, improve our control environment, and enhance investments in core programs so that they may realize their full potential.

The OIG's engagements in two areas for which NSF has made significant funding investments, the Established Program to Stimulate Competitive Research (EPSCoR) and the major multi-user research facilities (major facilities) program, illustrate how the OIG's work supports NSF's oversight to result in synergistic improvements. As highlighted in this Semiannual Report, the OIG's rigorous and multi-faceted EPSCoR and major facilities audits have yielded findings and recommendations to address both program-specific concerns as well as potential risks across NSF's award portfolio, thereby promoting "force-multiplier" effects.

More specifically, the OIG's audits of the EPSCoR program, which reached into both NSF and awardee internal controls, resulted in specific observations around post-award activities and institutional capacity, in particular, when monitoring subrecipients and implementation of new accounting systems within institutions. NSF applied these observations to enhance outreach to the EPSCoR awardee community, incorporating knowledge of institutional challenges into our practice and clarifying award terms and conditions. We credit the OIG for the scope of its work, spanning three years and seven reports across ten institutions and for its opportune timing. As NSF's funding for the EPSCoR program is expected to grow, improvements in oversight advance the important goal of building sustainable research support and services at under-resourced institutions.

We further appreciate that the OIG's synthesis of findings from its substantial body of EPSCoR work aligned with observations by NSF for the broader awardee community. For example, informed by the OIG's findings and leveraging the opportunity for greater participation in a virtual (vs. in-person) environment, NSF recently conducted a webinar on subawards and subrecipient monitoring for awards across NSF programs, drawing about 1200 participants. Similarly, NSF developed a webpage with tools and resources for recipients of all NSF awards to assist in meeting compliance requirements.

Turning to the OIG's body of audit work related to NSF's major facilities program, this Semiannual Report documented findings by the OIG and corresponding responsive actions by NSF that covered the facilities' full lifecycle, from construction to operations to divestment. Improvements to the major facilities program impact infrastructure across the broad spectrum of NSF-funded research, including instrumentation networks, observatories, accelerators, telescopes, and research vessels. As such, we appreciate that, while identifying the major facilities program as a Management Challenge for FY22, the OIG recognized that, through "[implementation of] enhanced controls and strengthened agency governance[.]" our "program has continued to evolve and improve each year, cementing its place as a model program." To that end, during this reporting period, NSF completed all responsive actions to the OIG's audits directed to construction and operations of major facilities.

More recently, through ongoing dialogue with the OIG during its audit of NSF's divestment of major facilities, NSF leveraged existing process to take proactive steps toward resolution of the OIG's recommendations. These actions, now well underway, include (a) better defining the last major facility life cycle stage and how NSF will carry out these transitions; and (b) developing an Agency-level view of all major facilities. Consistent with our commitment to continuous improvement of Agency programs and operations, we believe that timely completion of responsive actions is integral to NSF's major facilities program continuing to be a model program benefitting diverse areas of research.

The positive effects of the OIG's work and its enhancement of our shared goals of sound stewardship are also illustrated quantitatively by NSF's sustention of over \$3.2M or nearly 92% of all costs questioned in the 11 OIG audits of awardees resolved during this reporting period. Additional data related to disallowed costs, by audit and in aggregate, arising from OIG as well as Single Audit (formerly OMB Circular A-133 audit) reports is included in the Management Report on Final Actions Taken on Audits (also known as the Final Action Tables), appended to this Response, as required under the Inspector General Act.

More importantly, we recognize that the contributions by the OIG depend upon the dedication, professionalism, and unique skills of its people, so we share in the OIG's loss of Darrell Drake. Darrell's nearly three decades of service in the OIG's Office of Audits directly impacted improvements across the Agency and the advancement of the NSF mission, and he will be missed by NSF.

In sum, while the OIG is separate from NSF, we are not apart in our values and goals, including our respect and appreciation for the people who serve and the results of their work. NSF's emphasis on continuous improvement of programs and operations is buttressed by the OIG's thoughtful and thorough audit work, which paves the way for robust actions by NSF extending beyond any one type of award or area of research. We recognize the OIG for making NSF more effective in supporting the U.S. scientific enterprise and building trust with the American taxpayer. We look forward to maintaining our constructive relationship during this dynamic period, as we move forward with implementation of CHIPS and beyond.



Karen Marrongelle
*National Science Foundation
Chief Operating Officer*

**Management Report on Final Actions Taken
on Audits with Disallowed Costs for the Six-Month Period Ended September 30, 2022**

	Number of Reports	Dollar Value
A. Audit reports with management decisions on which final action has not been taken at the beginning of the period	4	\$ 52,824
B. Audit reports on which management decisions were made during the period	10	\$ 3,145,811
C. Total audit reports pending final action during this period (Total A+B)	14	\$ 3,198,635
D. Audit reports on which final action was taken during this period		
(1) Recoveries		
a) Collection and Offset	7	\$ 277,758
b) Amount uncollectible	0	
(2) Write-offs	0	
E. Audit reports needing final action at the end of the reporting period (C-D)	7	\$ 2,920,877
F. Total (D+E)	14	\$ 3,198,635

**Management Report on Final Actions Taken on Audits with Recommendations for Better
Use of Funds Agreed to by Management for the Six-Month Period Ended September 30, 2022**

	Number of Reports	Dollar Value
A. Audit reports with management decisions on which final action had not been taken at the beginning of the period	0	\$0
B. Audit reports on which management decisions were made during the period	0	\$0
C. Audit reports on which final action was taken during this period (Total A+B)	0	\$0
D. Recommendations on which final action was taken during this period	0	
(1) The dollar value of recommendations that were actually completed		\$0
(2) The dollar value of recommendations that management subsequently concluded should not or could not be implemented or completed		\$0
E. Audit reports for which no final action has been taken by the end of the reporting period (C-D)	0	\$0

**Management Report on Final Actions Taken on Audits
with Disallowed Costs for the Six-Month Period Ended September 30, 2022**

			Sustained Costs
A. Audit reports with management decisions on which final action has not been taken at the beginning of the period:			
1	19-1-008	University of Utah	\$15,417
2	20-1-006	Temple University	\$5,969
3	21-1-010	SUNY at Stony Brook	\$31,341
4	21-4-057	UNAVCO, Inc. ¹	\$97
		Subtotal A	\$52,824
		4	
B. Audit reports on which management decisions were made during the period:			
1	19-1-011	University of Delaware ²	\$214,027
2	19-1-016	Ohio State University ³	\$386,368
3	20-1-008	Duke University	\$663,284
4	21-1-001	University of Kansas Center for Research Inc	\$1,550,054
5	21-1-003	University of Wyoming	\$256,351
6	21-1-009	University of New Mexico	\$3,681
7	21-1-013	University of Wisconsin-Madison	\$29,798
8	21-1-015	The University of Central Florida Board of Trustees ⁴	\$448
9	21-1-018	Regents of the University of Michigan - Ann Arbor	\$11,499
10	22-1-004	Regents of the University of Idaho	\$30,301
		Subtotal B	\$3,145,811
		10	
C. Total audit reports pending final action during this period:			(Total A+B: 14) \$3,198,635
D. Audit reports on which final action was taken during this period:			
1	19-1-008	University of Utah	\$15,417
2	19-1-011	University of Delaware ²	\$214,027
3	20-1-006	Temple University	\$5,969
4	21-1-015	The University of Central Florida Board of Trustees ⁴	\$448
5	21-1-018	Regents of the University of Michigan - Ann Arbor	\$11,499
6	21-4-057	UNAVCO, Inc. ¹	\$97
7	22-1-004	Regents of the University of Idaho	\$30,301
		Subtotal D	\$277,758
		7	
E. Audit reports needing final action at the end of the period:			
1	19-1-016	Ohio State University ³	\$386,368
2	20-1-008	Duke University	\$663,284
3	21-1-001	University of Kansas Center for Research Inc	\$1,550,054
4	21-1-003	University of Wyoming	\$256,351
5	21-1-009	University of New Mexico	\$3,681
6	21-1-010	SUNY at Stony Brook	\$31,341

			Sustained Costs
7	21-1-013	University of Wisconsin-Madison	\$29,798
		Subtotal E	\$2,920,877
		7	
F. Reconciliation of audit reports: (Total D+E: 14)			\$3,198,635

¹ The audit report questioned \$54 and UNAVCO, Inc. identified an additional disallowed amount of \$43 for a total of \$97 disallowed.

² The NSF sustained amount is \$258,467; however, NSF's consideration of circumstances and alternative documentation resulted in a management decision to disallow and require repayment of \$214,027.

³ 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.

⁴ The audit report questioned \$294 and Central Florida identified an additional disallowed amount of \$154 for a total of \$448 disallowed.