

CHAPTER 3

APPENDICES (OTHER INFORMATION)





Summary of FY 2018 Financial Statement Audit and Management Assurances

Table 3.1 – Summary of Financial Statement Audit

Audit Summary					
Audit Opinion	<i>Unmodified</i>				
Restatement	<i>No</i>				
Material Weakness	Beginning Balance	New	Resolved	Consolidated	Ending Balance
<i>Total Material Weaknesses</i>	<i>0</i>	-	-	-	<i>0</i>

Table 3.2 – Summary of Management Assurances

Effectiveness of Internal Control over Financial Reporting (FMFIA § 2)					
Statement of Assurance	<i>Unmodified</i>				
	Beginning Balance	New	Resolved	Consolidated	Ending Balance
<i>Total Material Weaknesses</i>	<i>0</i>	-	-	-	<i>0</i>
Effectiveness of Internal Control over Operations (FMFIA § 2)					
Statement of Assurance	<i>Unmodified</i>				
	Beginning Balance	New	Resolved	Consolidated	Ending Balance
<i>Total Material Weaknesses</i>	<i>0</i>	-	-	-	<i>0</i>
Compliance with Financial Management System Requirements (FMFIA § 4)					
Statement of Assurance	<i>Systems conform to financial management system requirements</i>				
	Beginning Balance	New	Resolved	Consolidated	Ending Balance
<i>Total non-compliances</i>	<i>0</i>	-	-	-	<i>0</i>
Compliance with Section 803(a) of the Federal Financial Management Improvement Act (FFMIA)					
	Agency		Auditor		
1. Federal Financial Management System Requirements	<i>No lack of compliance noted</i>				
2. Applicable Federal Accounting Standards	<i>No lack of compliance noted</i>				
3. U.S. Standard General Ledger at Transaction Level	<i>No lack of compliance noted</i>				

Management Challenges for the National Science Foundation in Fiscal Year 2019

NATIONAL SCIENCE FOUNDATION
OFFICE OF INSPECTOR GENERAL

October 12, 2018



AT A GLANCE

Management Challenges for the National Science Foundation in Fiscal Year 2019

October 12, 2018

WHY WE DID THIS REPORT

The *Reports Consolidation Act of 2000* (Public Law 106-531) requires us to annually update our assessment of NSF's "... most serious management and performance challenges facing the agency ... and the agency's progress in addressing those challenges."

WHAT WE FOUND

NSF leads the world as an innovative agency dedicated to advancing science. Its awards have led to many discoveries that have contributed to the country's and the world's economic growth. Beyond its scientific mission, as a Federal agency, NSF must be a responsible steward of taxpayer dollars and distribute scarce research funds properly. This year we are introducing a new design for the Management Challenges report, in which we clearly lay out each challenge, actions taken by the agency, and work left to do.

Based on NSF's significant progress, we have removed two challenge areas identified in our FY 2018 Management Challenges report: Managing the Government's Records and Cybersecurity and Information Technology Management. This year, we have identified six areas representing challenges NSF must continue to address to better accomplish its mission:

- Managing Major Multi-User Research Facilities
- Meeting *Digital Accountability and Transparency Act of 2014* (DATA Act) Reporting Requirements
- Eliminating Improper Payments
- Managing the *Intergovernmental Personnel Act* Program
- Managing the U.S. Antarctic Program
- Encouraging the Ethical Conduct of Research

We are encouraged by NSF's progress in its efforts to address critical management and performance challenges. Effective responses to these challenges will continue to position NSF to ensure the integrity of NSF-funded projects, to spend research funds in the most effective and efficient manner, and to maintain the highest level of accountability over taxpayer dollars.

AGENCY RESPONSE TO MANAGEMENT CHALLENGES FOR FY 2018

Following the issuance of this report, NSF will include its Management Challenges Progress Report and its response to *Management Challenges for the National Science Foundation in FY 2018* as part of its Agency Financial Report.

FOR FURTHER INFORMATION, CONTACT US AT 703.292.7100 OR OIG@NSF.GOV.



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

MEMORANDUM

DATE: October 12, 2018

TO: Dr. Diane Souvaine
Chair
National Science Board

Dr. France Córdova
Director
National Science Foundation

FROM: Allison C. Lerner *Allison C. Lerner*
Inspector General
National Science Foundation

SUBJECT: Management Challenges for the National Science Foundation in Fiscal Year 2019

Attached for your information is our report, *Management Challenges for the National Science Foundation in Fiscal Year 2019*. The *Reports Consolidation Act of 2000* (Public Law 106-531) requires us to annually update our assessment of NSF's "... most serious management and performance challenges facing the agency ... and the agency's progress in addressing those challenges." A summary of the report will be included in the National Science Foundation Agency Financial Report.

If you have questions, please contact me at 703.292.7100.

Attachment

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Introduction

The *Reports Consolidation Act of 2000*¹ requires us to annually update our assessment of NSF's "... most serious management and performance challenges facing the agency ... and the agency's progress in addressing those challenges." In this report, we summarize what we consider the most critical management and performance challenges to NSF, and we assess the Foundation's progress in addressing those challenges.

NSF leads the world as an innovative agency dedicated to advancing science. Its awards have led to many discoveries that have contributed to the country's and the world's economic growth. Beyond its scientific mission, as a Federal agency, NSF must be a responsible steward of taxpayer dollars and distribute scarce research funds properly.

This year we are introducing a new design for the Management Challenges report, in which we clearly lay out each challenge, actions taken by the agency, and work left to do. We hope that this new format will help our readers more quickly grasp the challenges facing the Foundation and provide a better picture of its efforts to address them.

Significant Progress in Addressing FY 2018 Challenges

This year we have removed two challenge areas identified in our FY 2018 Management Challenges report: Managing the Government's Records and Cybersecurity and Information Technology Management.

NSF has taken significant action to mitigate challenges faced in managing the Government's records. For example, NSF:

- revised records management training to cover all elements required by the U.S. National Archives and Records Administration;
- issued NSF Bulletin 18-05, *Records Management Program*, and NSF Bulletin 18-04, *Managing Records in Electronic Messages*, to identify staff responsibilities at all levels of the agency;
- updated NSF Bulletin 18-07, *Mobile Communications Devices*, to include guidance related to electronic records on NSF-issued smartphones; and
- added instructions to the agency's standard operating procedures for social media on how to capture and retain records in social media posts on NSF accounts.

These actions, along with other agency activities, have enhanced NSF's confidence that its official records are retained and protected. Additionally, according to NSF, it is on track to comply with a 2012 U.S. National Archives and Records Administration and Office of Management and Budget directive requiring agencies to manage all permanent electronic Federal records in an electronic format to the fullest extent possible by December 31, 2019.² The agency must remain vigilant in its management of records to comply with the directive.

NSF has also made significant progress in the area of Cybersecurity and Information Technology Management. Although cybersecurity will always remain an area with inherent risk, NSF's actions have addressed some of the highest risk areas. For example, NSF:

¹ Pub. L. No. 106-531

² *Managing Government Records Directive*, Memorandum M-12-18, August 24, 2012

Introduction

- established technical controls to monitor the NSF network for unauthorized access to reduce the risk of unauthorized transactions, changes to data, audit logs and configurations;
- conducted configuration scans and regular reviews of audit logs and reported results to management; and
- proactively assessed the security state of systems through NSF's IT security continuous monitoring program.

Additionally, the agency successfully mitigated all prior year *Federal Information Security Modernization Act of 2014*³ (FISMA) findings. Based on this progress, we have removed the challenge from this year's list; however, by its nature, the cybersecurity area presents a myriad of potential and unknown risk that can never be fully anticipated and will, therefore, continue to test NSF's ability to respond and mitigate threats. In light of the ever-evolving nature of cybersecurity risks, it is quite possible that over time this area might once again prove to be a management challenge to the agency.

Challenges for FY 2019

This year, we have identified six areas representing challenges NSF must continue to address to better accomplish its mission. We have compiled this list based on our audit and investigative work; general knowledge of the agency's operations; and evaluative reports of others, including the U.S. Government Accountability Office (GAO) and NSF's various advisory committees, contractors, and staff. We identify management challenges as those that meet at least one of the following criteria:

- The issue involves an operation that is critical to an NSF core mission.⁴
- There is a risk of fraud, waste, or abuse of NSF or other Government assets.
- The issue involves strategic alliances with other agencies, the Office of Management and Budget, the Administration, Congress, or the public.
- The issue is related to key initiatives of the President.
- The issue involves a legal or regulatory requirement not being met.

The following list represents six areas of the most critical management and performance challenges for the Foundation:

- Managing Major Multi-User Research Facilities
- Meeting *Digital Accountability and Transparency Act of 2014* (DATA Act) Reporting Requirements
- Eliminating Improper Payments
- Managing the *Intergovernmental Personnel Act* (IPA) Program
- Managing the U.S. Antarctic Program
- Encouraging the Ethical Conduct of Research

We have also identified an emerging challenge area of Responding to the National Security Threat of Foreign Talent Plans. Recent Congressional hearings have focused on the theft of U.S. federally funded research and development by foreign states that use "Talent Plans" to benefit the foreign state's economic development,

³ Pub. L. No. 113-283

⁴ The *National Science Foundation Act of 1950* (Pub. L. No. 81-507) sets forth the mission: "to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense; and for other purposes."

Introduction

industry, and national security by obtaining information and technology from abroad. Such Talent Plans have the potential to exploit the openness of American universities and research enterprises and present a significant threat to the integrity of U.S. research initiatives. We have just begun investigating this challenge area and have not yet fully determined the risk to NSF.

We begin this year's list with challenges faced in managing major multi-user research facilities — an inherently risky portfolio due to the complex nature of these facilities, the associated high construction and operating costs, and the need to emphasize both sound business practices and innovative science in the awarding of cooperative agreements for such facilities. Additionally, as facilities age and reach their end of life cycle, NSF must be prepared for divestment of these facilities. NSF has improved its oversight over its major facilities over the past few years, and we are encouraged by NSF's action in implementing new controls in this area.

We continue to list the United States Antarctic Program (USAP) as a challenge. According to NSF, the transition of the Antarctic Support Contract responsibilities to Leidos has occurred without disruptions in operations or unwarranted increases in cost, and management controls and operating procedures for monitoring invoice processing and systems performance are in place. However, USAP is in the planning stage of a highly complex and risky program, the Antarctic Infrastructure Modernization for Science (AIMS) Project — a \$355 million endeavor that will stretch agency resources and present additional challenges for NSF to overcome.

Finally, while not designated as a challenge area, we continue to focus resources on other areas of high risk within grants administration, including the Small Business Innovation Research and Small Business Technology Transfer programs, which provide equity-free funding and entrepreneur support at the earliest stages of research.

We are encouraged by NSF's progress in its efforts to address critical management and performance challenges. Effective responses to these challenges will continue to position NSF to ensure the integrity of NSF-funded projects, to spend research funds in the most effective and efficient manner, and to maintain the highest level of accountability over taxpayer dollars.

CHALLENGE 1**Managing Major Multi-User Research Facilities****Why is this a serious management challenge?**

This challenge involves an operation that is critical to an NSF core mission. In addition, there is a risk of fraud, waste, or abuse of Government assets.

As part of its mission, NSF funds the construction, management, and operation of major multi-user research facilities (major facility), which are state-of-the-art infrastructure for research and education and include telescopes, ships, distributed networks, and observatories. NSF's major facility portfolio is inherently risky due to the complex nature of these facilities and the associated high construction and operating costs. In FY 2017, NSF spent \$222 million constructing major facilities and \$984 million operating them.

Our past reports highlighted concerns with oversight including unsupported proposal budgets, limited controls over management fees and contingency funds, and the absence of certified or validated earned value management systems. Recent audits identified additional oversight concerns, including the need for strengthened controls to ensure major facilities clearly identify subrecipients, complete subrecipient risk assessments, and properly charge project expenditures to construction or operations. Further, a June 2018 U.S. Government Accountability Office (GAO) audit found five of seven major facilities funded under NSF's no cost overrun policy experienced costs or schedule increases since starting construction.

Over the past few years, NSF has worked diligently to address our recommendations. NSF has strengthened controls over its major facility portfolio and continues to complete additional steps to strengthen its oversight.

Completed Actions

- ☑ Revised Large Facilities Manual to codify *American Innovation and Competitiveness Act* (AICA) and other strengthened requirements.
- ☑ Named Chief Officer for Research Facilities for life cycle oversight for major facilities.
- ☑ Formed Major Facilities Working Group and Facilities Governance Board to improve oversight.
- ☑ Implemented Earned Value Management System Verification, Acceptance, and Surveillance Procedures.
- ☑ Developed and implemented procedures for holding and allocating contingency funds.
- ☑ Closed 90 percent of our recommendations related to major facilities dating back to 2012.

Ongoing Actions

- Develop and implement new policies and procedures related to management reserve, monitoring subrecipients, and proper allocation of funding to construction and operations awards.
- Develop and implement new guidance to more fully use external review panels in addressing cost and schedule.
- Revise and implement internal policies and procedures related to NSF cost analysis and independent cost estimate reviews based on AICA requirements and GAO guidance.
- Ensure oversight of full life cycle of facilities from design to divestment.
- Continue oversight of eight major facilities in construction or receiving upgrades.

Looking Ahead

As of October 2018, we are completing an audit of NSF's controls to ensure major facilities properly charge expenditures to construction or operations awards. We also plan to conduct an audit to determine if NSF has a process in place for divestment of major facilities, and we are monitoring the establishment of the National Center for Optical Infrared Astronomy.

CHALLENGE 2**Meeting DATA Act Reporting Requirements****Why is this a serious management challenge?**

This challenge involves strategic alliances with other agencies, the Office of Management and Budget, the Administration, Congress, or the public.

The *Digital Accountability and Transparency Act of 2014*⁵ (DATA Act) requires Federal agencies to report quarterly spending data to the public through USASpending.gov, beginning with FY 2017 second quarter data. Federal agencies must report information in accordance with Government-wide financial data standards developed and issued by the Office of Management and Budget (OMB) and the Department of the Treasury.

In April 2017, NSF successfully met the DATA Act's requirement for Federal agencies to begin submitting data to Treasury. However, our November 2017 audit of NSF's FY 2017 second quarter spending data, conducted under a contract with Kearney & Company, found that the data did not meet the OMB quality requirements. Several data elements were inaccurate, incomplete, or untimely. Some of the errors were due to NSF's reporting, while others were due to Government-wide reporting issues. As a result of our audit, NSF staff conducted a root cause analysis of its challenges, noting that many of the OIG-identified errors were Government-wide in nature and beyond NSF's control, which we also recognized in our audit report.

We resolved all recommendations from our report and are encouraged by NSF's actions to improve its DATA Act reporting.

⁵ Pub. L. No. 113-101

Completed Actions

- ☑ Developed and implemented corrective actions to address the audit report recommendations.
- ☑ Conducted a root cause analysis of data reporting errors.
- ☑ Submitted corrections for any data errors identified in the audit.
- ☑ Reviewed submission process with the internal controls team and identified opportunities for improvement.
- ☑ Worked closely with the DATA Act Audit Collaboration Working Group and CIGIE to improve DATA Act implementation.

Ongoing Actions

- Participate in Government-wide working groups to develop a DATA Act Playbook to support Federal agencies' compliance and audit readiness.
- Develop an NSF DATA Act data quality plan that considers incremental risks to data quality in Federal spending data and identifies controls to manage such risks.
- Monitor changes to NSF systems to determine impact on DATA Act reporting.

Looking Ahead

An independent public accountant, under contract with us, will issue an audit report in November 2019 on the quality of NSF's FY 2019 first quarter spending data reported to USASpending.gov.

CHALLENGE 3**Eliminating Improper Payments****Why is this a serious management challenge?**

There is a risk of fraud, waste, or abuse of NSF or other Government assets. In addition, this challenge involves an operation that is related to key initiatives of the President.

The President's Management Agenda has a priority goal of Getting Payments Right to reduce the amount of cash lost through incorrect payments. The *Improper Payments Elimination and Recovery Act of 2010*⁶ (IPERA) requires agencies to periodically review and identify programs and activities that may be susceptible to significant improper payments. OMB implementing guidance requires Federal agencies to institute a systematic method of reviewing all programs and activities and identify programs susceptible to significant improper payments. OMB requires agencies to assess risk against nine factors that are likely to contribute to improper payments. NSF identified one program — Grants and Cooperative Agreements — and three activities — Contracts, Payment to Employees (including salaries), and Charge Cards — for which a risk assessment needed to be conducted.

Our last review of NSF's risk assessment for FY 2015 determined that NSF complied with IPERA but that its risk assessment process needed significant improvements to ensure that the agency thoroughly assesses and documents its risk of improper payments. We identified limitations in NSF's analysis of six of the nine risk factors. NSF submitted a corrective action plan, and we resolved all recommendations related to the FY 2015 audit. Our FY 2019 audit will determine if the new risk assessment is sufficient to close the recommendations.

We also determined that NSF met the IPERA Agency Financial Report requirement for FY 2016 and FY 2017. Because NSF's FY 2015 IPERA risk assessments found the agency was not susceptible to significant improper payments, NSF was not required to perform a risk assessment until FY 2018. We are encouraged by NSF's steps to eliminate improper payments; however, this area will remain a challenge until our next audit of improper payments is completed in FY 2019.

⁶ Pub. L. No. 111-204

Completed Actions

- ☑ Developed and published guidance for improper payment risk reviews, incorporating recommendations from the audit of the FY 2015 risk assessment.
- ☑ Completed an improper payments risk assessment for FY 2018 that built on the improper payments risk reviews completed during FYs 2016 and 2017.
- ☑ Conducted advanced and baseline grant monitoring activities, including grant payment testing.

Ongoing Actions

- Continue advanced and baseline grant monitoring activities, including grant payment testing.
- Continue internal controls program activities to provide assurance that NSF controls for its payment processes are operating effectively.
- Continue to improve improper payments risk assessment and reporting compliance activities.

Looking Ahead

An independent public accountant, under contract with us, will begin an audit in FY 2019, and issue its report in May 2019, on NSF's compliance with IPERA, including its review of the quality of NSF's FY 2018 risk assessment to identify improper payments.

CHALLENGE 4**Managing the Intergovernmental Personnel Act Program****Why is this a serious management challenge?**

This challenge involves an operation that is critical to an NSF core mission.

NSF gives scientists, engineers, and educators the opportunity to temporarily serve as NSF program directors, advisors, and senior leaders. Most of these non-permanent appointments are individuals hired under the *Intergovernmental Personnel Act*⁷ (IPA), who are not Federal employees but are paid through grants and remain employees of their home institutions. Individuals hired under the IPA — hereafter referred to as IPAs — bring in fresh perspectives from across all fields of science and engineering to support NSF’s mission. However, IPAs can have a heightened risk of conflicts of interest while working at NSF because most come from institutions receiving NSF grants. Also, because individuals only serve in a temporary capacity for up to 4 years, there is frequent turnover in staff at NSF, especially in senior leadership positions filled by IPAs. In addition, IPAs are not subject to Federal pay and benefits limits, and can spend up to 50 days each year on Independent Research/Development (IR/D).

NSF has continued to strengthen its management of the program. We resolved and closed all four recommendations from our 2017 audit report on IPA conflicts of interest. We are encouraged that the IPA Steering Committee — established in 2016 in response to our 2013 audit report — has developed and tracked metrics related to the use of IPAs, facilitating better oversight and a cost-sharing pilot. Specifically, the committee analyzed program costs, identified potential areas for cost savings, and pursued implementation of these approaches. For example, NSF adopted the committee’s recommendation for a pilot requiring 10 percent cost-sharing by every IPA’s home institution of the IPA’s academic-year salary and benefits.

⁷ Pub. L. No. 91-648

Completed Actions

- ☑ Clarified NSF Proposal & Award Policies & Procedures Guide requiring a substitute negotiator on proposals submitted by former NSF staff, including IPAs, for 1 year after their departure.
- ☑ Issued memoranda to NSF staff and supervisors reminding them of the importance of high ethical standards and their ethics responsibilities.
- ☑ Developed and communicated a merge process for principal investigators with multiple IDs.
- ☑ Extended cost-share pilot into FY 2018 to continue to evaluate effectiveness.
- ☑ Analyzed IPA years of service.
- ☑ Delivered report on benefits of IR/D program.

Ongoing Actions

- Complete the first IPA Program Annual Report.
- Provide data on time spent on IR/D by both permanent and rotating staff.
- Report on year two of the cost-share pilot.
- Report to Congress justifications for rotator pay exceeding the maximum SES pay.
- Implement an electronic separation clearance process to track completion of exit interviews, including separating staff acknowledgement of post-employment restrictions.
- Complete the development of an agency-wide workforce strategy for balancing use of IPA and other rotators with permanent staff.

Looking Ahead

We continue to monitor the IPA Steering Committee’s progress in considering IPA Program policies, overseeing budgeting approaches, and developing and tracking IPA Program-related metrics. In FY 2019, we plan to audit NSF’s IR/D program, including reviewing implementation of our 2012 audit report recommendations.

CHALLENGE 5**Managing the U.S. Antarctic Program****Why is this a serious management challenge?**

This challenge involves an operation that is critical to an NSF core mission. In addition, there is a risk of fraud, waste, or abuse of NSF or other Government assets.

NSF, through the United States Antarctic Program (USAP), manages U.S. scientific research in Antarctica. NSF awarded the Antarctic Support Contract (ASC) for USAP logistical support to Lockheed Martin in December 2011. As a result of a merger in August 2016, Leidos Innovations Corporation (Leidos) now holds the ASC. It is NSF's largest contract, currently valued at \$2.1 billion over 13 years. In such a remote and isolated environment, USAP management faces heightened challenges in areas such as 1) fiscal oversight of the ASC and its subcontractors, 2) management of inventory, 3) health and safety of researchers and contractors, and 4) modernization of facilities in the Antarctic Infrastructure Modernization for Science (AIMS) project.

NSF has prior experience managing USAP's construction projects and contractor changes, and, according to NSF, the transition to Leidos occurred without disruptions in operations or unnecessary cost increases. According to NSF, it has used management controls and operating procedures for monitoring invoice processing and systems performance. However, NSF's frequent turnover of the contracting officer for ASC may pose challenges to consistent fiscal oversight of this complex project.

USAP is also entering a highly complex and risky program with AIMS — a \$355 million endeavor that will stretch agency resources and may present additional challenges for NSF to overcome. The inherent risk of ASC's size, the Antarctic environment, and the upcoming AIMS project require continued vigilance.

Completed Actions

- ☑ Obtained incurred costs audits both of the contractor for ASC and the ASC's largest subcontractor for FYs 2012 and 2013.
- ☑ Assessed ASC performance annually to identify cargo failures and contractor response.
- ☑ Obtained a law enforcement site visit.
- ☑ Reviewed the legality of requiring breathalyzer testing for USAP participants.
- ☑ Conducted root cause analyses in response to FY 2017 challenges, followed by process improvements.
- ☑ Updated long-range capital plan to include lifecycle and real property investments.

Ongoing Actions

- Obtain incurred costs audits of the ASC, including an agreed-upon audit of Leidos' incurred costs for ASC from August 2016-December 2016.
- Select a pharmacy management software system.
- Conduct AIMS Final Design Review.
- Engage scientific community in efforts to minimize potential disruption of AIMS planning and construction on Antarctic science.
- Evaluate an automated process to review invoices and identify inaccuracies.

Looking Ahead

NSF has begun obtaining incurred costs audits and plans to continue to do so for every year of the contract. We are planning a site visit to Antarctica in FY 2019.

CHALLENGE 6**Encouraging the Ethical Conduct of Research****Why is this a serious management challenge?**

This challenge involves an operation that is critical to an NSF core mission. In addition, there is a risk of fraud, waste, or abuse of NSF or other Government assets.

Congress passed the *America COMPETES Act*⁸ in 2007 to increase innovation through research and development and to improve U.S. competitiveness in the world economy. As part of the law, institutions applying for NSF funding must describe a plan to provide appropriate training and oversight in the responsible and ethical conduct of research to participating students and researchers. NSF recognizes that the responsible conduct of research (RCR) — the practice of scientific investigation with integrity — is critical for maintaining excellence, as well as the public's trust, in science and engineering. NSF also recognizes that education in RCR is essential to prepare future scientists and engineers.

RCR is more than avoiding research misconduct (fabrication, falsification, and plagiarism). RCR also includes protecting the integrity of data; complying with relevant requirements; communicating openly with researchers, institutions, and funding agencies; mentoring; ensuring responsible authorship; managing conflict of interests; and establishing research environments free of harassment.

NSF has been receptive and responsive to our research misconduct reports and has taken appropriate actions against individuals who committed research misconduct. Further, NSF has taken positive steps to encourage RCR training at funded institutions in response to our 2017 report on institutional implementation of RCR training. In addition, NSF's September 2018 policy requiring grantees to notify NSF of those found to have committed sexual harassment is commendable.

NSF is in a unique position to foster the implementation of effective RCR training — including its content and how it is delivered — for all researchers, especially new members of the research community.

⁸ *America Creating Opportunities to Meaningfully Promote Excellence in Technology, Education, and Science Act*, Pub. L. No. 110-69

Completed Actions

- ☑ Revised Cultivating Cultures for Ethical STEM program solicitation to include information about the most effective RCR training.
- ☑ Provided information about RCR requirement at NSF Grants Conferences and other outreach events.
- ☑ Emphasized integrity in NSF's strategic plan.
- ☑ Briefed NSF senior management on importance of involving principal investigators and co-principal investigators in the RCR requirement.
- ☑ Issued memorandum on commitment to stop harassment in research/learning environments.

Ongoing Actions

- Draft additional guidance for the 2020 Proposal & Award Policies & Procedures Guide on research misconduct and available NSF-funded resources for RCR training.
- Conduct outreach to faculty to encourage them to participate in RCR training.
- Encourage STEM faculty to incorporate RCR in their mentoring, teaching, and curriculum development.
- Incorporate new term and condition requiring notification of harassment and assault.

Looking Ahead

We continue to monitor NSF's efforts in this area and encourage NSF to provide substantive guidance to the research community on mentoring and RCR training to accomplish the goals of the *America COMPETES Act*.

Appendix A

Relevant Reports

Please visit <http://www.nsf.gov/oig> for our reports and publications.

Introduction

- NSF OIG, Management Challenges for the National Science Foundation in Fiscal Year 2018, October 12, 2017
- NSF OIG Report No. 17-3-003, NSF's Relocation to Its New Headquarters Location — Records Management, Sept. 28, 2017
- NSF OIG Report No. 17-2-009, NSF Could Strengthen Key Controls Over Electronic Records Management, July 6, 2017

Managing Major Multi-User Research Facilities

- NSF OIG Report No. 17-3-004, NSF Needs Stronger Controls Over Battelle Memorial Institute Award for the National Ecological Observatory Network, May 12, 2017

Meeting DATA Act Reporting Requirements

- NSF OIG Report No. 18-2-001, Implementation of the Digital Accountability and Transparency Act of 2014, November 17, 2017

Eliminating Improper Payments

- NSF OIG, IPERA Compliance, April 30, 2018
- NSF OIG Report No. 17-3-005, Inspection of the National Science Foundation's Compliance with the Improper Payments Elimination and Recovery Act of 2010 for FY 2016, May 16, 2017
- NSF OIG Report No. 16-3-005, NSF's Compliance with the Improper Payments Elimination and Recovery Act for FY 2015, May 12, 2016

Managing the Intergovernmental Personnel Act Program

- NSF OIG Report No. 17-2-008, NSF Controls to Mitigate IPA Conflicts of Interest, June 8, 2017
- NSF OIG Report No. 13-2-008, Audit of Cost Associated with NSF's Use of Intergovernmental Personnel Act Assignees, March 20, 2013

Managing the U.S. Antarctic Program

- NSF OIG Report No. 15-2-009, Audit of Health and Safety in the U.S. Antarctic Program, July 2, 2015

Encouraging the Ethical Conduct of Research

- NSF OIG Tracking No. PR12030006, OIG Review of Institutions' Implementation of NSF's Responsible Conduct of Research Requirements, July 25, 2017
- NSF Office of the Director Important Notice No. 140, *Training in Responsible Conduct of Research – A Reminder of the NSF Requirement*, August 17, 2017

Additional Information

About NSF OIG

We promote effectiveness, efficiency, and economy in administering the Foundation's programs; detect and prevent fraud, waste, and abuse within NSF or by individuals who receive NSF funding; and identify and help to resolve cases of research misconduct. NSF OIG was established in 1989, in compliance with the Inspector General Act of 1978, as amended. Because the Inspector General reports directly to the National Science Board and Congress, the Office is organizationally independent from the National Science Foundation.

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- Anonymous Hotline: 1.800.428.2189
- Mail: 2415 Eisenhower Avenue, Alexandria, VA 22314 ATTN: OIG HOTLINE



National Science Foundation
Office of the Director

MEMORANDUM

DATE: **OCT 23 2018**

TO: Ms. Allison C. Lerner
Inspector General, National Science Foundation

FROM: Dr. France Córdova 
Director, National Science Foundation

SUBJECT: Acknowledgement of the Inspector General's FY 2019 Management Challenges Memorandum and Transmittal of NSF's Progress Report on the FY 2018 Management Challenges

As Director of the National Science Foundation (NSF), I recognize the importance of acknowledging, understanding, and mitigating risk to the execution of our mission and stewardship of taxpayer dollars. Consistent with this focus, as well as statute, this memorandum provides you with NSF's Progress Report for the Office of Inspector General's (OIG) Management Challenges for FY 2018 and acknowledges my receipt of the OIG's Management Challenges for FY 2019. As you consider our Progress Report and the new challenges, here are three considerations:

First, this year our Progress Report applies the Enterprise Risk Management framework at NSF to documenting our assessments of the inherent and residual risks for each of the OIG's Challenges for FY 2018, including actions to mitigate risks. Correspondingly, we appreciate the OIG's clear and concise identification of the Management Challenges for FY 2019 in its new reporting format. The improvements in both reports enable constructive dialogue between NSF and the OIG about risk and advance fulsome consideration by NSF of the OIG's new challenges.

Second, we are pleased that the OIG recognizes our progress by removing two Management Challenges cited for FY 2018; specifically, Management of the Government's Records and Cybersecurity and Information Technology Management.

Third, I have already engaged the Chief Operating Officer, Assistant Directors, and the Chief Financial Officer to identify owners and paths forward for FY 2019, for each of the six management challenges.

- **Managing Multi-User Facilities:** We appreciate that the OIG has acknowledged that 90% of the open recommendations directed to multi-user facilities are now closed. We look forward to completing corrective actions for the remaining open recommendations as part of our continuous improvement of the oversight and management of major facilities.
- **Meeting Digital Accountability and Transparency Act of 2014 (DATA Act) Reporting Requirements:** In partnership with the Office of Management and Budget, the Department of

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Treasury, and the Chief Financial Officers Council, NSF and the Department of Health and Human Services have led governmentwide efforts to improve DATA Act policy and develop implementation guidance through a “Data Quality Playbook.”

- **Eliminating Improper Payments:** We recognize that, while NSF has completed all corrective actions for the most recent audits for these areas, the OIG will be conducting new audits in FY 2019 to test our actions.
- **Managing the Intergovernmental Personnel Act (IPA) Program:** The OIG has now closed its sole open recommendation related to IPAs, which was directed to NSF’s implementation of a separation clearance process. We continue to identify areas of improvement for the IPA program.
- **Managing the U.S. Antarctic Program:** We note that the OIG has closed all but one open recommendation for its last audit of the U.S. Antarctic Program. In FY 2019, NSF will complete the Antarctic Infrastructure Modernization for Science Final Design Review.
- **Encouraging the Ethical Conduct of Research:** We appreciate the OIG’s recognition of NSF’s leadership in addressing sexual harassment as well as its identification of areas for improvement. We will continue outreach to the community on the Responsible Conduct of Research through a “Promising Practices Summit” in FY 2019.

We look forward to addressing the OIG’s Management Challenges for FY 2019 and, more broadly, to continuing our constructive engagement with the OIG about risk management for NSF.

Enclosure

cc: Chair, National Science Board
Chair, National Science Board, Committee on Oversight
Chief Financial Officer

National Science Foundation (NSF)

FY 2018 Progress Report on OIG Management Challenges

MANAGEMENT CHALLENGE: Major Multi-User Research Facilities Management

NSF Lead: Teresa Grancorvitz, Chief Financial Officer, NSF and Jim Ulvestad, Chief Officer for Research Facilities

Summary of OIG Identified Challenge	
	Ensure consistent implementation of its expanded controls for major facilities oversight.
NSF's Key Actions to Address the Challenge	
Agency Actions Taken in Prior Fiscal Years	
<ul style="list-style-type: none"> • Strengthened controls over NSF's major facility portfolio through the development of several new policies and procedures in FY 2016 and FY 2017 including: (1) retaining a portion of the recipients' contingency funds; (2) periodically conducting cost incurred audits; (3) completing a cost proposal review for reasonableness of proposed costs; (4) obtaining an independent cost review of the proposed budget; (5) conducting earned value management system verification, validation and acceptance; and (6) reviewing proposed fees and requiring recipients to track fee expenditures. • Developed the Major Facilities A-123 Oversight Process Narrative and revised the <i>Large Facilities Manual (LFM)</i> to incorporate new guidance for recipients related to cost estimating and analysis. 	
Actions Taken in FY 2018	
	<ul style="list-style-type: none"> • Appointed a new Chief Officer for Research Facilities (CORF) in the Office of the Director to ensure agency-wide acceptance of policies and procedures related to oversight of major facilities. • Appointed Accountable Directorate Representatives (ADR) in each Directorate with major facilities and formed the Major Facilities Working Group (consisting of the ADR's) to review and socialize policies and procedures related to the oversight of major facilities. • Formed the Facilities Governance Board to approve major facility oversight policies and procedures at the agency level. • Revised the Integrated Project Team (IPT) Standard Operating Guidance (SOG) to include facilities in the Operations Stage. • Developed the Core Competency SOG to codify the minimum competencies for the core IPT members.

- Conducted an independent third-party review of NSF’s strengthened policies and procedures related to cost surveillance.

NSF Management’s Overview of the Challenge

NSF’s view of the residual risk in light of key actions already taken to address the OIG-identified challenge.

NSF understands the importance of overseeing its recipients’ management of major facility awards. The agency also recognizes the importance of assessing prospective recipients’ capabilities for managing proposed awards. Over the past several years, NSF has been in the process of strengthening its policies and procedures as illustrated above. This includes an annual major facilities portfolio risk assessment to determine the necessary BFA-led reviews and audits to be conducted by the Large Facilities Office (LFO) and the Cooperative Support Branch (CSB). In close cooperation with program, LFO and CSB conduct the reviews described above, which were specifically created to safeguard NSF’s investments in supporting the scientific endeavor. NSF leadership has shown its commitment to oversight in the past several years by strengthening the LFO and in establishing the new CORF position. The new governance structure now in place will help ensure consistent implementation of its expanded controls for major facilities oversight.

NSF has recently undergone a Government Accountability Office (GAO) review related to its No Cost Overrun Policy and oversight practices related to recipient cost and schedule development. In the June 2018 report entitled National Science Foundation: Revised Policies on Developing Costs and Schedules Could Improve Estimates for Large Facilities (GAO-18-370), the GAO recommended that NSF should revise its policies for estimating and reviewing the costs and schedules of large facilities projects to better incorporate the best practices in GAO’s guides. NSF agreed with the GAO recommendations and has a corrective action plan in place to address the findings.

Based on NSF’s risk-based evaluation of this Management Challenge, coupled with activities already completed and those planned for FY 2019, NSF has determined that the residual risk impact is “very low” and the likelihood is “low.” NSF is confident that its current and planned policies and procedures related to major facility cost and schedule oversight adequately consider and balance risk, resources, and stewardship of federal funds.

NSF’s Anticipated Milestones

NSF management developed the anticipated milestones below in consideration of NSF’s strategic objectives, the risks inherent to NSF’s work, and the key actions NSF has already taken to address those risks.

- Anticipate receipt of independent third-party report related to cost surveillance – Q1 FY2019.
- Finalize Selection of Independent Cost Estimate Review SOG already implemented in practice – Q1 FY2019.
- Describe the purpose and customary methods for sensitivity analysis and application of GAO’s 12 steps of a high-quality cost estimating process (LFM Section 4.2) – Q3 FY 2019.
- Finalize and align BFA SOGs related to selection of independent cost estimate reviews, standardized cost analysis, and pre-award budget reviews to specifically address American Innovation and Competitiveness Act requirements and GAO good practices – Q4 FY 2018.

- Develop and implement a new Major Facilities Review SOG to more fully utilize external review panels in addressing elements of cost and schedule – Q2 FY 2019.
- Create a new LFM Section 4.3, *Schedule Development, Estimating, and Analysis* – Q3 FY 2019.
- Update BFA Cooperative Support Branch’s Standardized Cost Analysis Guidance SOG to include assessment of schedule due to the potential impact scheduling has on costs – Q4 FY 2018.

MANAGEMENT CHALLENGE: Business Operations Management – Improper Payments

NSF Lead: Teresa Grancorvitz, Chief Financial Officer, NSF

Summary of OIG Identified Challenge

(a) Ensure proper payments to awardees for the \$7 billion issued annually in grant and cooperative agreement payments without verification; (b) address substantial concerns with the depth, substance, and documentation of the NSF risk assessment; (c) address significant limitations in NSF’s analysis of six of the nine OMB risk factors; and (d) improve assessment of NSF payments to employees.

NSF’s Key Actions to Address the Challenge

Agency Actions Taken in Prior Fiscal Years

- Developed and published SOG for improper payments risk reviews incorporating the nine Improper Payment Elimination and Recovery Act (IPERA) risk factors and additional considerations from the OIG review report.
- Completed improper payments risk reviews for FY 2016 and FY 2017. The risk reviews included input from subject matter experts (SMEs) for grants, contracts, charge cards, and payments to employees. Both reviews concluded that NSF did not have a significant risk of improper payments.
- OIG inspection of the FY 2016 and FY 2017 risk reviews found NSF in compliance with IPERA requirements.

Actions Taken in FY 2018

- Conducted advanced and baseline grant monitoring activities including grant payment testing.
- Operated, evaluated, and reported on an effective internal controls program providing assurance that NSF controls over grant and grant payment processes are properly designed and operating effectively.
- Collaborated with the OIG, BFA, and program offices on risk reduction activities including completion of an initial fraud risk assessment for grants under the Fraud Reduction and Data Analytics Act.
- Completed an improper payments risk assessment for FY 2018 that built on the improper payments risk reviews completed during FY 2016 and FY 2017.

NSF Management’s Overview of the Challenge

NSF’s view of the residual risk in light of key actions already taken to address the OIG-identified challenge.

NSF appreciated the OIG’s current determination of NSF’s compliance with IPERA and closure of all recommendations from the previous OIG reports. The reports clearly validate that NSF has taken the steps necessary to demonstrate compliance and effectiveness in the agency’s implementation of IPERA because NSF has:

- Demonstrated strong commitment and top leadership support to incorporate risk management concepts into business processes and management functions;
- Ensured that NSF has the people and resources to effectively comply with IPERA by assigning a senior staff associate responsible for coordinating and integrating risk management and program integrity activities;
- Developed and completed a corrective action plan in July 2016 that addressed the root causes of the IPERA reporting issue, implemented solutions, and completed all OIG recommendations;
- Established processes to monitor and validate the effectiveness and sustainability of the corrective measures; and
- Incorporated corrective measures into policy and process documentation.

NSF’s Anticipated Milestones

NSF management developed the anticipated milestones below in consideration of NSF’s strategic objectives, the risks inherent to NSF’s work, and the key actions NSF has already taken to address those risks.

- Continue advanced and baseline grant monitoring activities including grant payment testing.
- Continue internal controls program activities to provide assurance that NSF controls for its payment processes are operating effectively.
- Continue collaboration with the OIG on risk reduction activities.
- Continue to improve improper payments risk assessment and reporting compliance activities.

MANAGEMENT CHALLENGE: Business Operations Management – DATA Act

NSF Lead: Teresa Grancorvitz, Chief Financial Officer, NSF

Summary of OIG Identified Challenge

Address challenges set forth in OIG audit report 18-2-001, dated November 17, 2017, reporting on the OIG’s assessment of completeness, timeliness, quality, and accuracy of data submitted by NSF in accordance with the DATA Act.

NSF's Key Actions to Address the Challenge

Actions Taken in FY 2018

Developed and implemented Corrective Action Plan in response to the FY 2017 audit with the following actions:

- Examined processes identified as potential audit risks, identified ways to improve or strengthen the processes, and documented changes in NSF's standard operating procedures.
- Submitted corrections for any data errors identified in the audit.
- Included comments with NSF's submissions to explain legitimate differences between File C (Award and Financial Detail) and Files D1/D2 (Financial Assistance and Procurement Award and Awardee Attributes).
- Reviewed submission process with the internal controls team and identified opportunities for improvement.
- Performed policy review of the application of "legitimate differences" guidance to warnings when linking Files C to D1/D2.
- Worked closely with the DATA Act Audit Collaboration Working Group of the CFO Council (CFOC) and the Council of the Inspectors General on Integrity and Efficiency (CIGIE) to identify issues to be addressed to improve DATA Act implementation and clarify government-wide guidance and audit standards.
- Worked with a subgroup of the Financial Assistance Committee for E-Government (FACE) in collaboration with a DATA Act Internal Control subgroup of the CFOC to provide a solid framework and data quality plan template that agencies can leverage and customize to develop their own data quality plans.
- Initiated implementation of OMB Circular A-123 Appendix A, requiring agencies to maintain a Data Quality Plan that considers the incremental risks to data quality in federal spending data and any controls that would manage such risks. NSF's data quality plan will leverage the existing plans for the Financial (Files A-C) and Procurement (File D1) data as well incorporate the new data quality requirements for the Financial Assistance (File D2) data.
- Reviewed SharePoint processes to ensure all required BFA Division Director validations are complete, properly labelled, and available for Senior Accountable Official (SAO) review.

NSF Management's Overview of the Challenge

NSF's view of the residual risk in light of key actions already taken to address the OIG-identified challenge.

The Digital Accountability and Transparency Act (DATA Act) is a government-wide initiative led by OMB and the U.S. Department of Treasury (Treasury) to standardize and publish the federal government's wide variety of reports and data compilations related to spending: financial management, payments, budget actions, procurement, and assistance. On April 28, 2017, NSF successfully met the DATA Act's requirement for federal agencies to begin submitting data to Treasury. From the outset, NSF prioritized DATA Act implementation, initially naming an SAO from the Office of the Director and later transitioning that role to the NSF Chief Financial Officer where it remains. The agency allocated appropriate resources to both the implementation and operations phases of its DATA Act work, leveraging agency staff from BFA and OIRM as well as contract resources. Early on, NSF recognized the importance of government-wide engagement and earned the Treasury Secretary's Certificate of Appreciation in recognition of NSF's outstanding commitment to collaboration on this government-wide implementation challenge.

The DATA Act required the OIG of each federal agency to review a sample of the financial data submitted by the agency and report on its completeness, timeliness, quality, and accuracy, as well as the implementation and use of consistent data standards by each agency. The NSF OIG issued its report on November 17, 2017. NSF generally agreed with the audit recommendations and has addressed them all, developing corrective actions that have been resolved and closed by the OIG. In connection with this work, NSF staff conducted a root cause analysis of its challenges, noting that many of the OIG-identified errors were government-wide in nature and beyond NSF’s control, which the OIG recognized in its report.

Among the corrective actions NSF has implemented is the agency’s continued leadership and engagement in government-wide DATA Act-related work. On June 6, 2018, OMB issued new guidance, Appendix A of OMB Circular A-123, superseding prior DATA Act guidance and creating a requirement for agencies to develop data quality plans that include management assurance in the quality of its data. NSF analysis confirmed that the prior guidance had dramatically amplified NSF error rates because auditors relied on it to evaluate errors at the transaction level, rather than at the data element level. Agencies will now be audited against the revised approach, and NSF is confident that the agency’s reported error rate will drop significantly as a result.

NSF’s progress on the DATA Act has been enabled by the NSF Deputy CFO’s deep engagement in supporting the activities relating to the Audit Collaboration Working Group of the CFOC and CIGIE, which will develop agency best practices for implementing the new guidance. The CFOC is also collaborating with GAO and CIGIE as they develop their related audit guidance, which will take the new OMB guidance into account. In addition, the NSF Division Director for BFA’s Division of Institution and Award Support and other NSF senior staff are supporting the government-wide financial assistance community’s work to develop a framework for the required data quality plans, which NSF will leverage as it prepares its own required plan.

Based on NSF’s risk-based evaluation of this Management Challenge, along with the causes analyzed and actions that NSF has taken to date, NSF believes that its risk of reporting inaccurate, incomplete, and untimely data has been significantly reduced.

NSF’s Anticipated Milestones

NSF management developed the anticipated milestones below in consideration of NSF’s strategic objectives, the risks inherent to NSF’s work, and the key actions NSF has already taken to address those risks.

- Participate in government-wide working groups to develop a DATA Act Playbook to support federal agencies’ compliance and audit readiness;
- Develop an NSF DATA ACT data quality plan; and
- Monitor changes to NSF systems to determine impact on DATA Act reporting.

MANAGEMENT CHALLENGE: Business Operations Management – Managing the Government’s Records

NSF Lead: Wonzie Gardner, Acting Office Head, OIRM

Summary of OIG Identified Challenge		
<i>Ensure compliance with the National Archives and Records Administration’s (NARA) August 24, 2012, Managing Government Records Directive (M-12-18) to take specific actions to reform records management policies and practices by appointed dates.</i>	<i>Continue initiatives to reduce the amount of paper, supplies and equipment that NSF uses and stores given less office space available in the new NSF headquarters as well as efficiently and effectively manage the scanning/digitization effort to reduce the amount of paper.</i>	<i>Provide updated records management training to staff in accordance with NARA Bulletin 2017-01 (Agency Records Management Training Requirements).</i>

NSF’s Key Actions to Address the Challenge								
<p>Agency Actions Taken in Prior Fiscal Years</p> <ul style="list-style-type: none"> • Verified and validated the accuracy of the report on records that were 30-years old or more and determined there are no records meeting this criterion in existence within the agency. (October 2015) • Conducted a review of records at the Federal Records Center (FRC) locations where agency records are stored and determined that no unscheduled records remain there. (October 2015) • Began presenting an overview of general records management responsibilities at NSF’s New Employee Orientation sessions. (August 2017) • Revised NSF records management training course to cover all NARA-required elements. (June 2017) • Scanned over 7,000 permanent and temporary records from August 2016 to August 2017 during the process of relocating to the new NSF headquarters as part of an agency-wide “green” initiative to eliminate paper and property. The initiative ultimately reduced 1,200,000 pounds of paper and property, compared to a goal of 500,000 pounds. 								
<p>Actions Taken in FY 2018</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td style="width: 33%; vertical-align: top;"> <ul style="list-style-type: none"> • Issued NSF Bulletin 18-05, Records Management Program, and NSF Bulletin 18-04, Managing Records in Electronic Messages, to identify staff responsibilities at all levels of the agency. </td> <td style="width: 33%; vertical-align: top; text-align: center;">(b)</td> <td style="width: 33%; vertical-align: top;"> <ul style="list-style-type: none"> • Implemented a full-text search capability in the Electronic Records Management System (ERMS). • Created an online training for the ERMS. </td> </tr> <tr> <td></td> <td style="text-align: center;">(c)</td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> • Issued NSF Bulletin 18-06, Required Records Management Training, to implement new requirement for all staff to take annual records </td> </tr> </tbody> </table>			<ul style="list-style-type: none"> • Issued NSF Bulletin 18-05, Records Management Program, and NSF Bulletin 18-04, Managing Records in Electronic Messages, to identify staff responsibilities at all levels of the agency. 	(b)	<ul style="list-style-type: none"> • Implemented a full-text search capability in the Electronic Records Management System (ERMS). • Created an online training for the ERMS. 		(c)	<ul style="list-style-type: none"> • Issued NSF Bulletin 18-06, Required Records Management Training, to implement new requirement for all staff to take annual records
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<ul style="list-style-type: none"> • Issued guidance for executing NSF’s Capstone Officials’ Email Management Program under Bulletin 18-03. • Issued NSF Bulletin 18-12, Managing Email of Supervisory, Support and/or Administrative Personnel as Records • Classified OIG and Office of the General Counsel’s electronic records as official records. • Completed an analysis of records at the FRC. • Implemented blacklist capability on NSF-managed mobile devices to prohibit restricted application downloads. • Issued updated NSF Bulletin 18-07, Mobile Communications Devices, to include guidance related to electronic records on NSF-issued smartphones. • Updated mobile device rules of behavior to comply with NSF Bulletin 18-07. • Added instructions to the agency’s standard operating procedures (SOP) for social media on how to capture and retain records in social media posts on NSF accounts. 		<p>management training. New personnel on boarding after April 30, 2018 are required to complete the course within 60 days of employment and annually each fiscal year thereafter. All other personnel are required to complete this course by September 30, 2018, and annually each fiscal year thereafter.</p>
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NSF Management’s Overview of the Challenge

NSF’s view of the residual risk in light of key actions already taken to address the OIG-identified challenge.

NSF is on track to comply with NARA’s 2012 directive (M-12-18) to take specific actions by appointed dates to reform the policies and practices for the management of government records. The agency has committed appropriate resources to prioritize its compliance and has already met the requirements for Goal 2 in the 2012 directive. NSF’s anticipated milestones focus on completing the requirements for Goal 1 and ensuring it maintains compliance with Goal 2. The Foundation has worked closely with senior management and the OIG to formulate corrective action plans that outlined many of the actions taken in FY 2018 and to be taken in the future. Actions taken to-date have significantly reduced the inherent risk, such as non-compliance and lost records, to a low level.

The NSF digitization project in preparation for the move to Alexandria was a great success. Multiple offices around the building not only reduced their paper footprint to fit into their new space, but now have excess storage capacity they are looking to repurpose. Among other benefits, NSF’s

above-described actions reduced the inherent risk associated with paper records, including space limitations and loss of records; therefore, the agency plans to continue to promote digitization of paper records.

NSF records management training content and policy complies with NARA Bulletin 2017-01. Formalized, required records management training will promote transparency and accountability in the management of federal records. NSF implementation of this training has addressed the inherent risk set forth in the OIG’s management challenge, bringing the residual risk to a low level. Agency progress in this area is demonstrated by the results of the NARA on-site assessment conducted in May 2018 where NARA reviewed NSF’s Records Management Training Program and policies related to records management. Senior staff within the NSF Division of Administrative Services Records Management Section were engaged with NARA and demonstrated the new *Records Management for Everyone and eRecords Management System* online training courses. NARA reviewed five recently issued records management-related NSF Bulletins. At the end of the assessment, NARA praised the training modules and bulletins, and said they would like to highlight NSF’s records management program as a model for the federal government.

NSF’s Anticipated Milestones

NSF management developed the anticipated milestones below in consideration of NSF’s strategic objectives, the risks inherent to NSF’s work, and the key actions NSF has already taken to address those risks.

<p>(a)</p> <ul style="list-style-type: none"> • Update remaining records schedules to classify electronic records as official agency records and get approval from the Archivist of the United States by the end of FY 2019. • Issue a policy on managing email of supervisory, support, and administrative personnel as records by December 2018. • Complete the NARA 2019 Annual Records Management Self-Assessment, the Annual Federal Email Management Report, and the Annual Senior Agency Official for Records Management Report by April 2019. • Implement a tool for automated capture of text messages on NSF-managed mobile devices by November 2018. 	<p>(b)</p> <ul style="list-style-type: none"> • Destroy all records at the FRC that have met their disposition date by the end of FY 2018. • Complete an agency-wide records inventory by November 2018. • Continue to scan records to put in ERMS. 	<p>(c)</p> <ul style="list-style-type: none"> • Monitor compliance with annual records management training requirement for staff utilizing LearnNSF automatic tracking capability. • Initiate quarterly workshops for NSF-wide Division Records Custodians by December 2018.
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MANAGEMENT CHALLENGE: Business Operations Management – Subrecipient Monitoring

NSF Lead: Teresa Grancorvitz, Chief Financial Officer, NSF

Summary of OIG Identified Challenge	
	<i>Transparency and oversight of NSF funds passed through to subrecipients (e.g. ensure awardees review sufficient cost information to demonstrate that subrecipients' costs are allowable, fair, and reasonable).</i>

NSF's Key Actions to Address the Challenge	
Actions Taken in FY 2018	
	<ul style="list-style-type: none"> • Piloted a Targeted Review Assessment (TRA) methodology to assess compliance with prime awardee oversight of subrecipients. • Reviewed NSF's Advanced Monitoring Program subaward module assessment protocols based on TRA findings and <i>Uniform Guidance</i> requirements. • Continued to require prime awardees to take corrective actions for findings related to subaward monitoring. • Continued practice of applying 1 to 5 risk points to awards containing subawards at or exceeding \$100,000 as part of NSF's annual risk assessment process. • Updated the standard NSF budget form to eliminate awardee confusion around subcontracts vs. subawards. The form now only allows for subawards. • Changed award notification language to reflect subaward vs. subcontract. • Updated NSF's fact sheet on subrecipient monitoring to reference requirements in 2 CFR §200.331 for pre- and post-award monitoring.

NSF Management's Overview of the Challenge	
<i>NSF's view of the residual risk in light of key actions already taken to address the OIG-identified challenge.</i>	
<p>Historically, NSF has understood the importance of overseeing its recipients' management of large and multiple subawards. The Foundation also recognizes the importance of assessing prospective awardees' capabilities for managing proposed subawards. NSF currently has in place a risk-based approach to oversee its award recipients' subaward management through advanced monitoring activities, including Advanced Monitoring Site Visits, Desk Reviews, and Business Systems Reviews (BSRs). NSF leadership has shown its commitment to oversight for nearly two decades by the establishment and continued support for the Division of Institution and Award Support (DIAS) and the Large Facilities Office (LFO) within NSF's Office of Budget, Finance, and Award Management. These offices were specifically created to safeguard NSF's investments in science and conduct the reviews described above. NSF also assesses risk related to subaward monitoring during its pre-award reviews, specifically for proposals of \$10M and greater. Advanced pre-award reviews are handled by expert cost analysts within DIAS, and NSF also utilizes expert advice of outside sources as warranted.</p>	

NSF has recently undergone an OIG audit of the agency’s monitoring of recipients managing subawards. The OIG stated that “in most cases, NSF’s processes for monitoring grantees were sufficient to ensure that pass-through entities monitored subrecipients properly.” The audit report recommended that NSF strengthen several policies and procedures to better align with the *Uniform Guidance* (2 CFR § 200) as it relates to subrecipient compliance. NSF agreed with all OIG recommendations, has already acted on several issues, and intends to take additional actions to address all recommendations in the audit report pursuant to a corrective action plan.

Based on NSF’s risk-based evaluation of this process, coupled with the extensive OIG audit of this area, NSF believes that the residual risk to the agency is low and is consistent with NSF’s low risk appetite for misuse of funds and non-compliance with reporting and performance requirements. NSF is confident that its current pre- and post-award processes adequately consider and balance risk, resources, and stewardship.

NSF’s Anticipated Milestones

NSF management developed the anticipated milestones below in consideration of NSF’s strategic objectives, the risks inherent to NSF’s work, and the key actions NSF has already taken to address those risks.

- Revise DIAS’s Subrecipient Review module to require review of awardee compliance with 2 CFR § 200.331 by October 2018.
- Revise the DIAS Over-\$10M SOG to align with 2 CFR § 200 as it relates to the agency’s responsibility to oversee its prime recipients managing subawards by October 2018.
- Revise the BSR Guide to align with 2 CFR § 200 as it relates to the agency’s responsibility to oversee its prime recipients managing subawards by November 2018.
- Revise the Large Facilities Manual to align with 2 CFR § 200 as it relates to the agency’s responsibility to oversee its prime recipients managing subawards by June 2019.
- Revise the “DACs/CSB Standardized Cost Analysis Guidance” to align with 2 CFR § 200 as it relates to the agency’s responsibility to oversee its prime recipients managing subawards by September 2018.

MANAGEMENT CHALLENGE: Management of the IPA Program

NSF Lead: Joanne Tornow, Acting Assistant Director, BIO and Wonzie Gardner, Acting OIRM Office Head

Summary of OIG Identified Challenge			
(a)	<i>Because individuals can serve in a temporary capacity for up to four (4) years, there is frequent turnover in staff at NSF, especially in senior leadership positions.</i>	(b)	<i>The amount of time IPAs spend on Independent Research/Development (IR/D) at their home institution raises concern about the ability of IPAs to fulfill their responsibilities at NSF and to be fully engaged in the agency’s mission.</i>
		(c)	<i>NSF’s reliance on IPA’s comes at an added cost because IPAs are not subject to Federal pay and benefits limits. The American Innovation and Competitiveness Act (AICA) requires a report on NSF’s efforts to control costs associated with IPAs.</i>
		(d)	<i>NSF could strengthen some of its internal controls to improve NSF’s ability to identify and or mitigate IPA conflicts of interest.</i>

NSF’s Key Actions to Address the Challenge	
Agency Actions Taken in Prior Fiscal Years	
(a)	<ul style="list-style-type: none"> Established an ongoing culture of staff development to ensure that there is a “bench” of staff ready for developmental detail assignments in the event that there are vacancies in executive positions, to include the Federal Executive Institute (FEI), American University Executive Leadership Program, Harvard Business School Leadership Training, Individual Development Plans, and NSF Academy training activities. Developed and implemented a new employee onboarding program, the New Executive Transition Program (NeXT) in 2009 (NSF has historically held new employee onboarding sessions that include IPAs). The NeXT program supports the onboarding of employees and IPAs transitioning into executive-level positions. The program provides a comprehensive set of tools and information to help new executives reach full performance as quickly as possible by developing executive knowledge about NSF mission, culture, organization, people, and business processes. The NeXT Program currently includes a three-day Executive Leadership Retreat and a one-day Oversight of Merit Review, which applies to most executive IPAs. NSF also offers executive coaching to help IPAs and all executives understand their new roles and navigate the Federal environment. Instituted mandatory and optional training for Program Officers, who comprise a large proportion of IPAs, on NSF’s Merit Review process which teaches how research proposals are evaluated and how to execute the Program Officer role. There is a Merit Review Basics series (MRB I through MRB IV), and the first two modules have been required since 2011 and the remaining two are optional. NSF is in the process of changing the requirement to include all four one-day modules. There is also an optional two-day capstone workshop called the Program Management Seminar which is typically taken by a majority of Program Officers (including IPAs).

	<ul style="list-style-type: none"> • Created a parallel performance management system in 2014 for IPAs to ensure clarity in setting expectations and providing feedback on performance. • Established a knowledge transfer process in 2015, by which exiting executives can transfer key pieces of knowledge and information to incoming executives. • Implemented a required three-day supervisory training and development course in 2015 called Federal Supervision at NSF designed to assist new federal supervisors (including IPAs) in understanding their roles and all of the requirements pertaining to federal human capital management. • Established a Steering Committee for Policy and Oversight of the IPA Program (IPA Steering Committee) in April 2016 to serve as the primary body for considering policy on NSF’s use of IPAs, and to oversee common approaches to budgeting and implementation of the IPA program. A key responsibility of the Steering Committee is to develop and track metrics related to the use of IPAs.
(b)	<ul style="list-style-type: none"> • Established an IR/D Council in October 2011 to develop and monitor internal controls related to the IR/D program, including tracking the time spent on IR/D activities. Data from these internal controls are disseminated to NSF senior management quarterly, for use in managing the IR/D program within each organization. • Developed an IR/D Guide in 2012 to clearly communicate NSF policies on the use of IR/D, including the possibility that participation in the IR/D program could be curtailed if it compromised the completion of NSF duties. • Designated IR/D experts in each Directorate/Office who receive annual training to ensure that NSF policies are implemented appropriately. • Instituted a requirement that all IR/D plans provide an explanation of how the IR/D activities enhance the requestor’s ability to perform NSF duties. • Published a revised IR/D Guide in January 2017 that includes guidance limiting NSF payment of IPAs’ IR/D travel to their home institutions to 12 trips per year. The guidance encourages IPAs to combine other NSF official business and/or telework with these trips to get the most efficient use of those travel dollars.
(c)	<ul style="list-style-type: none"> • Completed an IPA Steering Committee analysis of costs associated with the IPA program in FY 2016 and determined that the incremental cost of the program (i.e., computing the cost differential if the positions held by IPAs were instead filled with federal employees) was approximately \$5M (or 0.07% of the NSF budget). Proportionally, this cost differential only nominally increases the total IPA program costs. As part of this analysis, the IPA Steering Committee did identify opportunities for potential cost savings, and NSF in turn initiated a pilot requiring 10% cost sharing by IPAs’ home institutions of their academic-year salaries and fringe benefits (per NSF Bulletin 16-11). This pilot applies to all new IPA agreements initiated in FY 2017 and beyond, including those for executive and program level staff. Additionally, NSF eliminated reimbursement for lost consulting. • Designed and began data collection for an evaluation led by the NSF Office of Integrated Activities Evaluation and Assessment Capability to determine the cost implications associated with the 10% cost sharing pilot and the extent to which the policy change impacts NSF’s ability to recruit strong IPAs. • Received notice from the OIG closing the sole open audit recommendation related to IPA costs as a result of these efforts. Recommendation closed in February 2017.
(d)	<ul style="list-style-type: none"> • Continued to apply the same suitability, credentialing, and security vetting process for employees and IPAs alike, and to require IT security and privacy training for all employees and IPAs for physical and logical access to facilities and systems.

<ul style="list-style-type: none"> Continued to implement NSF’s long-standing policy with respect to statutory and perceived conflicts of interest (COIs) for staff and reviewers. Staff who manage the merit review process are required to take training on the agency’s ethics rules. These policies and requirements apply to all staff, including IPAs. Formulated a corrective action plan in response to the OIG’s recommendations to strengthen and add to existing controls its June 2017 audit report, <i>NSF Controls to Mitigate IPA Conflicts of Interest</i>. The report concluded that NSF had “implemented internal controls to identify and mitigate IPA conflicts of interest.” Issued a memorandum (OD 17-03) in March 2017 to all staff, including IPAs, reminding them of the importance of high ethical standards. NSF also issued a notice to supervisors in August 2017 (OD 17-17), reminding them of their ethics responsibilities, specifically the responsibility to ensure that all subordinates, including IPAs, comply with the agency’s ethics rules. Reviewed and updated core policies relating to IPAs in the NSF Personnel Manual. Developed a required online ethics training module for all new employees, including IPAs. 							
Actions Taken in FY 2018							
(a)	<ul style="list-style-type: none"> Conducted analysis (January 2018) on IPA years of service and found that, on average, IPA executives serve 3.1 years at NSF (January 2018) and are 3 times more likely to stay for 3-4 years compared to staff-level IPAs. Non-executives serve, on average, 2.3 years at NSF. Per OPM, the average time a career SES spends in a position is 3.4 years and non-career SES is 1.7 years.¹ Engaged with the GAO on an inquiry into the turnover of IPAs. NSF embraces IPA turnover as it helps enable NSF to keep 	(b)	<ul style="list-style-type: none"> Delivered the IR/D Annual Report to NSF Deputy Assistant Directors (DADs) (November 2017) indicating, on average, 72% of IPAs participated in IR/D, down from 76% two years ago. On average, IPA IR/D plans requested 37 days of IR/D, yet only 19 days were used. As of October 2017, active IR/D plans for IPAs totaled \$1.36M in dollars requested with an expected actual spend of approximately \$680,000. Delivered a “Benefits of the NSF IR/D Program” report to the DADs (March 2018), highlighting the value of IR/D in recruitment, research 	(c)	<ul style="list-style-type: none"> Extended the Cost-Share Pilot into FY 2018 to continue to evaluate the effectiveness of the 10% cost-share requirement. An evaluation of the effectiveness of the IPA Cost-Share Pilot that was launched for FY 2017 indicated that there was a cost-share percentage increase from 7.2% in FY 2016 to 7.9% in FY 2017, resulting in an average cost-share increase of almost \$5,000 per IPA assignment. Engaged with the GAO on the salary reimbursements associated with IPAs. NSF does not set the salaries for rotators who are detailed to NSF using the IPA authority, as their 	(d)	<ul style="list-style-type: none"> Clarified NSF Policy (<i>Proposal & Award Policies & Procedures Guide</i>) requiring a substitute negotiator on proposals submitted by former NSF staff, including IPAs, for one year after their departure. Addressed the corrective actions associated with the OIG audit NSF Controls to Mitigate IPA Conflicts of Interest (17-2-008). Three of the four recommendations in the corrective action plan have been closed by the OIG.

¹ <https://www.opm.gov/policy-data-oversight/senior-executive-service/facts-figures/#url=Demographics>

<p>pace with rapidly changing scientific advancements. NSF makes every effort to match those changes with a continuous cycle of deep scientific expertise and strong ties to the scientific community. The short-term nature of the rotator tenure allows NSF to continuously renew and align resources to our core mission requirement to promote the progress of science.</p>	<p>currency, and ethics protection. IPAs participating in IR/D are at the forefront of the research landscape and impact merit review decisions using the latest knowledge, thus having a direct impact on the NSF mission.</p>	<p>salaries are set by their home institutions.</p> <ul style="list-style-type: none"> Submitted to Congress responses to the American Innovation and Competitiveness Act of 2017 (P.L. 114-329) (AICA), Section 111 (Personnel Oversight), regarding the Justifications for Rotator Pay Exceeding the SES Pay Max; and Evaluation of the Cost-sharing Pilot (January 2018). 	
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NSF Management’s Overview of the Challenge

NSF’s view of the residual risk in light of key actions already taken to address the OIG-identified challenge.

NSF provides the opportunity for scientists, engineers, and educators to rotate into the Foundation as temporary Program Directors, advisors, and leaders. Rotators bring fresh perspectives from across the country and across all fields of science and engineering supported by the Foundation, helping influence new directions for research in science, engineering, and education, including emerging interdisciplinary areas. In fact, many of these rotators remain involved in their professional research and development activities while working at NSF through participation in the IR/D program, which is managed by the NSF IR/D Council.

NSF takes a proactive approach in the management of the IPA program to appropriately consider and mitigate inherent risks associated with its execution.

Demonstrated Top Leadership Commitment:

The IPA Steering Committee reports directly to NSF Director France A. Córdoba and Chief Operating Officer (COO) F. Fleming Crim and has been in place since April 2016. The IPA Steering Committee comprises senior-level leadership across the agency, namely a Chair who is part of the agency’s Senior Executive Service (SES), the Chairs of the NSF Executive Resources Board (ERB) and IR/D Council, Head of the Office of Diversity and Inclusion, and four at-large members, including two SES and two executive-level IPAs.

The IPA Steering Committee is charged with ensuring NSF is best utilizing the IPA hiring authority. It advises the Foundation’s senior leadership on matters that directly concern policy on the use of the IPA program, and on common approaches to budgeting and implementation of the

program. It also regularly reports on its oversight and stewardship of the IPA program, including costs associated with the program, to the Director and COO; to OMB; and to Congress, pursuant to the AICA.

Capacity:

The IPA Steering Committee is supported in the execution of its responsibilities by various NSF units with key expertise for risk management, reporting, and accountability, including BFA, the OIRM Division of Human Resource Management, the Office of General Counsel, the Office of Legislative and Public Affairs, and the Office of Integrative Activities.

Corrective Action Plan:

With this support, the IPA Steering Committee is pursuing an enterprise risk management approach to identify and understand the potential risks associated with the IPA program, the inherent impacts and likelihood of these risks, the risk reduction steps being undertaken to address these risks, and the residual risk impacts and likelihood. As part of this approach, and given the management challenges identified by OIG, four risks have been identified: frequent turnover in staff, particularly in senior leadership positions; the time that IPAs spend away from NSF, e.g., as part of their IR/D activities; internal controls associated with IPAs' conflicts of interest; and the costs associated with the IPA program.

NSF has addressed the corrective action plan associated with the most recent OIG audit on NSF Controls to Mitigate IPA Conflicts of Interest (17-2-008). Three of the four recommendations in the corrective action plan have been closed by the OIG. NSF has successfully closed all recommendations from previous OIG audits and reviews of the IPA program.

Monitoring:

Coupled with rigorous data capture, analysis, and sharing across the agency, the IPA Steering Committee is now enabling rigorous decision making to improve directional oversight for the management of the program. For example, the IPA Steering Committee analyzed the costs of the IPA program, identified potential areas for cost savings, and pursued implementation of these approaches. Additionally, it led the design and data collection effort for an evaluation of the associated policy implementation, in conjunction with NSF's Evaluation and Assessment Capability within OIA.

Demonstrated Progress:

Based on the above, NSF has taken several steps to further strengthen the IPA program. The NSF Director issued a memorandum to all NSF staff, including IPAs, in March 2017 reminding them of the importance of high ethical standards (Staff Memorandum OD 17-03); and a separate notice to supervisors, in August 2017, reminding them of their ethics responsibilities, specifically the responsibility to ensure that their subordinates, including IPAs, comply with agency ethics rules (Staff Memorandum OD 17-17). Further, the IPA Steering Committee recommended, and NSF adopted, the initiation of a pilot requiring 10% cost-sharing by every IPA's home institution of the IPA's academic-year salary and fringe benefits (per NSF Bulletin 16-11), which applies to all new IPA agreements initiated in FY 2017, including those for executive- and program-level staff. NSF has also ended support for lost consulting payments and, in January 2017, published a revised IR/D Guide that includes guidance limiting NSF payment of IPAs' IR/D travel to their home institutions to 12 trips per year. This encourages IPAs to combine other NSF official business

and/or telework with these trips to get the most efficient use of those travel dollars. Pending the basis for an evaluation of these changes, particularly the cost-sharing pilot, NSF extended the pilot through FY 2018.

NSF is therefore constantly improving its management of the IPA program and addressing the management challenges identified by the OIG as well as other agency-identified risks and challenges. In this way, NSF is ensuring the program fully supports the mission of the agency and the nation’s interests. Indeed, NSF believes that the steps taken to date and described above have reduced the inherent risk substantially, such that the residual risk is acceptable to the agency.

NSF’s Anticipated Milestones

NSF management developed the anticipated milestones below in consideration of NSF’s strategic objectives, the risks inherent to NSF’s work, and the key actions NSF has already taken to address those risks.

<p>(a)</p> <ul style="list-style-type: none"> • Deliver the first IPA Program Annual Report to the Director of NSF. This report will provide annual data and trend analyses on various aspects related to the use of IPAs at NSF, for use by the Director and NSF senior managers in assessing and overseeing the program. • Develop the CAP in response to the GAO report, “A Workforce Strategy and Evaluation of Results Could Improve Use of Rotating Scientists, Engineers, and Educators” (GAO-18-533). 	<p>(b)</p> <ul style="list-style-type: none"> • Monitor time spent on IR/D by both permanent and rotating staff, and provide data to NSF senior managers to ensure appropriate oversight of IR/D. 	<p>(c)</p> <ul style="list-style-type: none"> • Develop the year two cost-share pilot evaluation report for submission to the IPA Steering Committee and the Office of the Director. • Submit to Congress responses to the American Innovation and Competitiveness Act (P.L. 114-329) (AICA), Section 111 (Personnel Oversight), regarding the Justifications for Rotator Pay Exceeding the SES Pay Max; and Evaluation of the Cost-share Pilot. 	<p>(d)</p> <ul style="list-style-type: none"> • Implement an electronic separation clearance process that tracks completion of the OGC ethics exit interviews where separating staff will acknowledge their responsibility for being familiar with post-employment restrictions.
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MANAGEMENT CHALLENGE: U.S. Antarctic Program (USAP) Management

NSF Lead: William Easterling, Assistant Director, Directorate for Geosciences and Kelly Falkner, Office Director, Polar Programs

Summary of OIG Identified Challenge				
(a)	<p><i>Ensure a successful transition from Lockheed Martin to Leidos as the Antarctic Support Contractor (ASC) together with their respective subcontractors by having strong cost controls to protect the government against unwarranted increases in ASC costs during a period of reorganization and mergers.</i></p>	(b)	<p><i>Continue to coordinate with the ASC to soundly manage the acquisition and shipment of Antarctica-bound inventory stored and maintained at Port Hueneme, California; Punta Arenas, Chile; and Christchurch, New Zealand.</i></p>	
		(c)	<p><i>Ensure modernization of McMurdo Station as it proceeds to construction under the Antarctic Infrastructure Modernization for Science (AIMS) project by obtaining the necessary funding from Congress, capitalizing on lessons learned from NSF’s large facility work as appropriate, and minimizing the impact that the AIMS planning and construction process will have on Antarctic science.</i></p>	
			(d)	<p><i>Continue to address misconduct in the Antarctic as set forth in the 2015 OIG Report, Audit of Health and Safety in the U.S. Antarctic Program.</i></p>

NSF’s Key Actions to Address the Challenge	
Agency Actions Taken in Prior Fiscal Years	
(a)	<ul style="list-style-type: none"> • Held routine executive meetings with Lockheed Martin leadership to understand the strategic rationale for the transition to Leidos and the impact to the ASC. • Began implementing the novation agreement processed by the Defense Contract Management Agency (DCMA) as the cognizant Federal Agency, which concluded that restructuring was in the best interest of the government. • Monitored Leidos’ operations on legacy Lockheed Martin systems. The Accounting System, Estimating System, Material Management and Accounting System, Purchasing System, and Property System were approved by DCMA in a letter dated August 25, 2016.
(b)	<ul style="list-style-type: none"> • Conducted two detailed root cause analyses in response to early fiscal year (FY) 2017 failures, followed by process improvements. NSF directed the ASC to develop reports on the damaged science equipment and mishandled science samples explaining how and why the damage occurred, and to implement corrective actions to avoid such damage in the future. NSF then approved the action plans and monitored contractor activity for effectiveness.

	<ul style="list-style-type: none"> • Modified contract policy so that going forward, senior ASC management will be directly involved in all high value-science sample shipments to ensure minimum risk. Final approval for shipment must come from the senior transportation manager. • Ensured that appropriate mitigation for the risk of loss or damage was implemented by November 2016.
(c)	<ul style="list-style-type: none"> • Continued progress on the 2012 Blue Ribbon Panel (BRP) recommendations, including investment in lifecycle acquisitions and infrastructure upgrades. • Addressed major infrastructure upgrades recommended by the BRP report for McMurdo Station through the following design efforts: <ul style="list-style-type: none"> – Completed designs for the Antarctic Infrastructure Modernization for Science (AIMS) project, including Core Facility and Utilities packages, and presented the designs to the MREFC Preliminary Design Review (PDR) Panel. – Completed designs of the Vehicle Equipment/Operations Center using NSF Research and Related Activities Funding. – Continued design on the Information Technology & Communications (IT&C) Primary Operations Center, Lodging, and Palmer Pier Replacement Projects. – Completed presentation to the National Science Board (NSB), which resulted in the NSB’s recommendation that the NSF Director or her designee include the AIMS project in a future budget request. – Completed ~ \$2M in infrastructure investments in the Black Island Telecommunications Facility to address BRP Recommendation 4.7-5, Black Island Telecommunications Facility risk management. – Issued a Sources Sought Notice on FBO.gov to apprise potential offerors on the AIMS project. • Continued internal coordination with LFO in order to leverage institutional knowledge pertaining to previous large facilities work, including best practices and considerations outlined in NSF’s <i>Large Facilities Manual</i> (NSF 17-066).
(d)	<ul style="list-style-type: none"> • <u>Code of Conduct</u>: Developed a process for reporting and reviewing Code of Conduct violations, which states that each year the Office of Polar Programs will send a request to all USAP employing organizations and NSF’s on-site representatives (for grantees) for a report of all significant instances of on ice misconduct for the previous 12 months. This audit action item (#1) regarding the USAP Code of Conduct was formally closed by the OIG on March 28, 2017. • <u>Law Enforcement</u>: <ul style="list-style-type: none"> – Oversaw NSF’s law enforcement program’s achievement of full compliance with all U.S. Marshals Service requirements for certification and training, and recommendations for law enforcement tools made by the Service. – Initiated planning for a future site visit to Antarctica, resources and schedules permitting. OPP had internal conversations with OGC and reached out to law enforcement organization contacts. • <u>Breathalyzer Testing</u>: <ul style="list-style-type: none"> – Procured breathalyzer units that do not require calibration. These units provide redundancy for the existing breathalyzer inventory. This audit action sub-item (#4.2) regarding breathalyzer calibration was formally closed by the OIG on 12/22/2015.) – Continued to explore the advisability and feasibility of the OIG-recommended requirement for breathalyzer testing for all USAP participants. Consultations with the Department of Justice on policy and legal concerns are being planned.

Actions Taken in FY 2018	
(a)	<ul style="list-style-type: none"> • Monitored the transfer of business systems from Lockheed Martin to Leidos. Subsequently, the Leidos DCMA Divisional Administrative Contracting Officer reviewed and approved Leidos business systems. • Continued to monitor invoices, Annual Program Plans, business system reviews (accounting, estimating, purchasing systems), indirect rates and financial reporting for the USAP contractor to ensure strong cost controls continue with the new entity.
(b)	<ul style="list-style-type: none"> • Directed NSF’s annual assessment of ASC performance, which will identify cargo failures and contractor responses. Emphasis will be placed on opportunity costs of mishandled science samples and replacement costs of damaged inventory. Penalties will be considered in the contractor award fee. • Continued to monitor cargo shipments during the August 2017 - February 2018 cycle. • Conducted weekly NSF-led meetings with the prime contractor focused on protecting government property.
(c)	<ul style="list-style-type: none"> • Authorized additional design to advance the AIMS design beyond bridging documents (35%). Initiated and completed necessary initial solicitation efforts for individual AIMS components. • Completed designs for and awarded IT&C Primary Addition for construction. • Initiated acquisition of major components of the Ross Island Satellite communications Earth Station (RIES) to address Black Island Telecom Facility deficiencies. • Prepared for AIMS Final Design Review (FDR), anticipated in Q1 of FY 2019. • Continued to update the long-range capital plan to include lifecycle and real property investments for all Antarctic locations.
(d)	<ul style="list-style-type: none"> • <u>Code of Conduct:</u> <ul style="list-style-type: none"> – Continued to implement NSF process for reporting and reviewing Code of Conduct violations. – Updated Code of Conduct to clarify to the community the consequences (e.g., potential removal) of misconduct in Antarctica. • <u>Law Enforcement:</u> <ul style="list-style-type: none"> – Reviewed the final report dated March 12, 2018 of a group of law enforcement officials who had conducted an on-site evaluation in February 2018. The Law Enforcement Review and Site-Visit assessed equipment and training for special deputies and reviewed other areas, such as legal jurisdiction, USAP law enforcement staffing, facilities, communications with the U.S. Marshals Service, and detention and transportation of suspects. The report contains recommendations and suggestions. This audit action item (#3) regarding USAP Law Enforcement was formally closed by the OIG on June 12, 2018. • <u>Breathalyzer Testing:</u> <ul style="list-style-type: none"> – Finalized a memo detailing the results of NSF exploration of the advisability and feasibility of implementing a requirement for breathalyzer testing for all USAP participants. NSF determined that since USAP supporting organizations have their own breathalyzer testing programs, the benefit of establishing and enforcing an NSF-managed breathalyzer program would not be worth the legal, contractual and financial obligations. NSF decided to accept the risk of not implementing its own breathalyzer program. This audit action sub-item (#4.1) regarding the legality of requiring breathalyzer testing for all USAP participants was formally closed by the OIG on 02/05/2018.)

NSF Management’s Overview of the Challenge

NSF’s view of the residual risk in light of key actions already taken to address the OIG-identified challenge.

NSF—through the Office of Polar Programs (OPP) in the Directorate for Geosciences (GEO)—funds and manages the U.S. Antarctic Program (USAP). The USAP supports United States’ research and national policy goals in the Antarctic. The inherent risks associated with Antarctica’s remote location, extreme environment, and the short period of time during which the continent is accessible has precipitated several actions under the USAP management challenge for NSF. These actions include: a) ensuring a successful transition from Lockheed Martin to Leidos as the Antarctic Support Contractor (ASC) while preventing unwarranted increases in cost; b) ensuring sound management of the acquisition and shipment of Antarctica-bound property and inventory stored and maintained at three ports—Port Hueneme, California, Punta Arenas, Chile, and Christchurch, New Zealand; c) ensuring modernization of McMurdo Station as it proceeds to construction under the Antarctic Infrastructure Modernization for Science (AIMS) project; and d) continuing to address misconduct in the Antarctic, including items noted in the 2015 OIG Report, *Audit of Health and Safety in the U.S. Antarctic Program*.

Through leadership commitments, dedication of staff and resources, corrective action planning, and monitoring implementation of plans, NSF has demonstrated significant progress in reducing the inherent risk to residual risk levels for USAP management that are well within acceptable ranges. The transition of the ASC responsibilities to Leidos has occurred without disruptions in operations or unwarranted increases in cost. Management controls and operating procedures for monitoring invoice processing and systems performance are in place. Efforts are underway to evaluate an automated process to review invoices and identify inaccuracies. NSF performed root cause analyses of issues pertaining to the shipment and storage of property and inventory, and consequently developed and implemented process improvements. Routine NSF-led meetings are held with Leidos to emphasize prime contractor responsibilities to protect government property. Planning and implementation of the modernization of McMurdo Station and other large facilities work in Antarctica are underway with cognizance by the National Science Board (NSB), the Office of Management and Budget (OMB), and Congress. Plans going forward include engaging the scientific community in efforts to minimize disruption that the AIMS planning and construction process might have on Antarctic science. NSF has dedicated staff with primary responsibility of stewardship for the long-range capital plan, to include lifecycle and real property investments for all Antarctic locations. All 2015 OIG misconduct-related action items, as expressed in the *Audit of Health and Safety in the U.S. Antarctic Program*, were closed by the OIG. NSF and USAP efforts have been positive steps and continuing efforts will help ensure USAP is well poised to address misconduct in the future.

NSF’s Anticipated Milestones

NSF management developed the anticipated milestones below in consideration of NSF’s strategic objectives, the risks inherent to NSF’s work, and the key actions NSF has already taken to address those risks.

(a)	<ul style="list-style-type: none"> Continue to apply invoice processing in accordance with the current NSF “Guidance and Instructions for Invoice 	(b)	<ul style="list-style-type: none"> Monitor cargo during the upcoming shipment cycle (August 2018 - February 2019). 	(c)	<ul style="list-style-type: none"> Complete necessary solicitation efforts for AIMS project. 	(d)	<ul style="list-style-type: none"> <u>Code of Conduct:</u> <ul style="list-style-type: none"> Continue to implement its process for reporting and reviewing Code of Conduct violations.
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<p>Review and Processing” SOP.</p> <ul style="list-style-type: none"> • Evaluate an automated process to review invoices and identify inaccuracies. 	<ul style="list-style-type: none"> • Continue to conduct weekly NSF-led meetings with the prime contractor focused on protecting government property. 	<ul style="list-style-type: none"> • Conduct AIMS Final Design Review (FDR) in Q1 of FY 2019. • Engage the scientific community in efforts to minimize disruption that the AIMS planning and construction process might have on Antarctic science. • Advance the long-range capital plan to include lifecycle and real property investments for all Antarctic locations. 	<ul style="list-style-type: none"> – Continue to update the Code of Conduct as circumstances required. • <u>Law Enforcement</u>: <ul style="list-style-type: none"> – Implement appropriate changes in response to the Federal Law Enforcement Site Visit Report.
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MANAGEMENT CHALLENGE: Cybersecurity and IT Management

NSF Lead: Dorothy Aronson, Chief Information Officer, NSF

Summary of OIG Identified Challenge		
<p>(a) <i>System Monitoring: Protect information systems against unauthorized access or modification to decrease the risk of unauthorized transactions and unauthorized changes to data, audit logs, and configurations that remain undetected and affect the integrity of financial transactions.</i></p>	<p>(b) <i>USAP IT Security: Allocate appropriate resources to correct IT weaknesses related to the U.S. Antarctic Program (USAP) and ensure the systems and information are adequately protected.</i></p>	<p>(c) <i>Mobile Devices: Develop effective measures to preserve social media messages, capture text messages on NSF-owned devices, and monitor downloads of smartphone applications to ensure compliance with Federal requirements and guidance for electronic records management.</i></p>

NSF's Key Actions to Address the Challenge			
Agency Actions Taken in Prior Fiscal Years			
(a)	<ul style="list-style-type: none"> Continued monitoring activities to comply with the Federal Information Security Modernization Act (FISMA) and ensured ongoing operational security throughout the system lifecycle. Implemented numerous risk mitigating actions in FY 2017 to address the OIG's management challenges. Established configuration baselines for production systems and implemented the Department of Homeland Security Continuous Diagnostics and Mitigation (CDM) program Phase I with more frequent configuration scans. Documented user administration processes for the Award System and webTA. 	(b)	<ul style="list-style-type: none"> Adjusted the USAP security plan review and updated process to provide earlier updates to validate controls being in place for the year.
		(c)	<ul style="list-style-type: none"> Implemented a mobile device management (MDM) capability to enforce configuration management and ensure the integrity of agency information.
Actions Taken in FY 2018			
(a)	<ul style="list-style-type: none"> Established technical controls to monitor the NSF network for unauthorized access to reduce the risk of unauthorized transactions, changes to data, audit logs and configurations. Conducted configuration scans and regular reviews of audit logs and reported results to management. Proactively assessed the security state of systems through NSF's IT security continuous monitoring program. 	(b)	<ul style="list-style-type: none"> Allocated appropriate resources to the USAP IT security program to address FISMA findings. Completed security plan updates and a business impact analysis to address recovery priorities.
		(c)	<ul style="list-style-type: none"> Updated and issued guidance related to the use of smartphone applications that support encryption and/or automatically delete messages. Implemented controls in May 2018 that prohibit applications identified as violating NSF policy from being downloaded onto NSF-issued mobile devices. Prohibited applications that support encrypted communication unless their use is approved by the OGC and NSF Records Officer per federal guidance. Implemented quarterly monitoring of applications.

NSF Management's Overview of the Challenge

NSF's view of the residual risk in light of key actions already taken to address the OIG-identified challenge.

The availability of information technology (IT) resources and security posture of its IT systems is vital to NSF's ability to carry out its mission. The agency's Chief Information Officer is part of the Office of the Director and oversees the Foundation's proactive IT security management structure that takes a risk-based approach and provides timely and relevant information to stakeholders. The agency has assessed the risks in the three areas set forth in the OIG Management Challenge for Cybersecurity and Information Technology Management and is confident that overall the residual risks remaining are low.

As of July 2018, NSF analyzed the root causes, e.g. people, process and tools, and agency staff implemented solutions to address the three challenges noted above. NSF senior management established and committed to a Plan of Action and Milestones (POA&M) as a performance measure to monitor corrective action progress. The POA&M incorporates the IG Management Challenges for systems monitoring, USAP IT security, and mobile devices. The POA&M is updated quarterly, and a progress report is distributed to senior management for review.

Systems Monitoring. NSF established a system-wide audit log review process by implementing procedures and tools to monitor the system and report results to senior management on a regular basis. While NSF acknowledges the potential impact of unauthorized activity on agency systems, based on these actions and the above described evaluation of this risk, causes and outcomes, NSF is confident that the remaining residual risk is low.

USAP IT Security. The Office of Polar Programs (OPP), U.S. Antarctic Program (USAP) Section for Antarctic Infrastructure and Logistics (GEO/OPP/AIL) prioritized IT security initiatives and committed resources to address FISMA findings. Specifically, GEO/OPP/AIL conducted a Business Impact Analysis (BIA) to identify mission and business processes, prioritize the processes, and determine the impact on the processes if systems are unavailable. The OPP BIA identifies important functional relationships and interdependencies, as well as time sensitivities that impact the USAP mission. OPP implemented the National Institute of Standards and Technology Risk Management Framework to enable GEO/OPP/AIL to prepare, execute, and communicate in keeping with cybersecurity risk management best practices. OPP's risk-based approach to cybersecurity is supported by operational activities, regular program reviews and management reporting that support risk decisions and risk mitigation actions. Through improved oversight and resource allocation to priority tasks, OPP continues to manage the residual risk for USAP information systems.

Monitoring and reporting processes communicate cybersecurity risk to senior management to assess risk and determine appropriate courses of action consistent with organizational risk tolerance. The IT security program is evaluated in accordance with the FISMA. NSF is proactive in reviewing security controls and identifying areas to improve the IT security program and incorporates information gained and lessons learned to strengthen NSF's cybersecurity posture. NSF's adaptive risk management is very responsive to a changing cybersecurity environment with low residual risk.

Mobile Devices. In addition to ensuring the availability and strong security posture of agency IT systems, NSF recognizes the importance of protecting the integrity of information on, and appropriate use of, NSF-issued mobile devices. Part of this responsibility is ensuring that

information on agency mobile devices, including smartphones and tablets, is captured and retained per Federal recordkeeping requirements. NSF’s mobile device management capability enforces configuration requirements on mobile devices that access NSF email, contacts, and calendars, and provides mechanisms to ensure compromised devices are disconnected from agency systems so information is not lost. Additionally, NSF has implemented new procedures and controls which allow specific applications to be blacklisted, preventing their use on NSF-issued mobile devices. NSF has blacklisted two mobile applications that support encryption and/or the ability to automatically delete messages after they are read or sent, which could be used to circumvent agency recordkeeping systems. NSF is monitoring installed applications on agency-issued mobile devices each quarter to identify if there are new applications that should be restricted from use. Furthermore, NSF continues to research alternatives for the automatic capture and retention of text messages on NSF-issued mobile devices and plans to have this capability in place by November 2018.

In addition to the technical controls previously described, NSF continues to educate mobile device users on their responsibilities for ensuring the capture and retention of information mobile devices per Federal records management guidance. In May 2018, the Foundation published a revised NSF Bulletin related to the assignment and use of agency mobile devices, including more detailed information on protecting and preserving agency information. The May 2018 NSF Bulletin revision updated the rules of behavior outlining responsibilities for individuals with NSF-issued mobile devices. With recent and planned actions related to NSF’s mobile device services program, comprising technology controls and policy guidance, there is low residual risk of loss for electronic records requiring capture and retention. NSF continues to evaluate its mobile device services program offerings to focus on the intersection between users and technologies, with the goal of protecting agency information against loss or disclosure.

NSF’s Anticipated Milestones

NSF management developed the anticipated milestones below in consideration of NSF’s strategic objectives, the risks inherent to NSF’s work, and the key actions NSF has already taken to address those risks.

(a)	<ul style="list-style-type: none"> • Employ capabilities to further strengthen the cybersecurity program and implement application event monitoring tools and audit log reviews to detect potential unauthorized changes to financially significant data or configuration changes that affect NSF’s security process. 	(b)		<ul style="list-style-type: none"> • Maintain OPP operational IT security awareness, review program priorities, and allocate resources to ensure IT security program infrastructure and staffing requirements are adequate. • Ensure OPP’s NextGen project addresses IT infrastructure upgrades. • Continue to research alternatives for the automatic capture and retention of text messages on NSF-issued mobile devices and plans to implement this capability by November 2018. • Continue to evaluate additional enhancements to NSF mobile device services program, including new capabilities to preserve information and ensure the retention of agency electronic messaging and information per federal guidance.
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MANAGEMENT CHALLENGE: Encouraging the Ethical Conduct of Research

NSF Lead: Fleming Crim, Chief Operating Officer, NSF

Summary of OIG Identified Challenge					
(a)	<i>It is essential that NSF continue to recognize the importance of its Responsible Conduct of Research (RCR) requirement. It is important to emphasize research integrity as a core value.</i>	(b)	<i>NSF awardees could benefit from NSF providing written guidelines or templates for universities to follow. NSF has an opportunity to encourage incorporation of best practices into RCR programs.</i>	(c)	<i>NSF should encourage institutions to extend their RCR programs to faculty.</i>

NSF’s Key Actions to Address the Challenge					
Agency Actions Taken in Prior Fiscal Years					
Issued Important Notice No. 140, Training in Responsible Conduct of Research – A Reminder of the NSF Requirement from the NSF Director on August 17, 2017.					
Actions Taken in FY 2018					
(a)	<ul style="list-style-type: none"> Evaluated themes and common threads of research misconduct cases and used the analysis to draft additional guidance for the FY 2019 Proposal and Award Policies and Procedures Guide (PAPPG) on the definition and consequences of research misconduct and on NSF-funded resources available for RCR training. Revised Cultivating Cultures for Ethical STEM (CCE STEM) program solicitation to incorporate specific references to RCR training and online resources to assist with RCR training. Sponsored an SBE special lecture at NSF, “Fighting against Doubt and Promoting Public Trust in Research Practices”, presented by Kristen Intemann. 	(b)	<ul style="list-style-type: none"> Incorporated a reference to Chapters 9 (“Identifying and Promoting Best Practices for Research Integrity”) and 10 (“Education for the Responsible Conduct of Research”) of <i>Fostering Integrity in Research</i> (National Academies of Sciences, Engineering, and Medicine, 2017) (NASEM Report) into the draft PAPPG scheduled for publication in October 2018. Encouraged awardees to incorporate promising RCR practices by initiating outreach regarding proposed PAPPG changes. Revised the CCE STEM program solicitation to incorporate the 	(c)	<ul style="list-style-type: none"> Produced a set of slides on RCR and research misconduct for use in NSF staff outreach to the research community, suggesting that STEM faculty incorporate RCR into their mentoring, teaching, and curriculum development. Held NSF senior management briefings about the importance of involving PIs and Co-PIs in the RCR requirement. Drafted guidance language for the FY 2020 PAPPG: “NSF encourages training of faculty

<p>Emphasized integrity as a core value in the NSF strategic plan, <i>Building the Future: Investing in Discovery and Innovation</i>, by specifically stating that “We hold each other and our awardees to the highest standards of ethical behavior. We strive to ensure the trustworthiness of the results of NSF-funded research by promoting the responsible conduct of research.” (available at: https://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf18045)</p> <ul style="list-style-type: none"> • Included RCR requirement in NSF outreach at the NSF Grants Conference and other outreach events. 	<p><i>Fostering Integrity in Research</i> conclusion that “training for responsible conduct of research is most effective when it is part of a comprehensive approach to enhance an organization’s research enterprise.”</p> <ul style="list-style-type: none"> • Synthesized a set of findings regarding best ethical research practices based on reports from three of the ethics workshops NSF funded over the past three years. • Held meeting with CCE STEM PIs to review synthesized workshop findings and receive input on dissemination plans. 	<p>in the responsible and ethical conduct of research.”</p>
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NSF Management’s Overview of the Challenge

NSF’s view of the residual risk in light of key actions already taken to address the OIG-identified challenge.

NSF leadership emphasizes that NSF does not tolerate research misconduct, which means fabrication, falsification, or plagiarism in proposing or performing research funded by NSF, in reviewing research proposals submitted to NSF, or in reporting research results funded by NSF. The OIG investigates allegations of research misconduct and makes recommendations to NSF for disposition. NSF’s Chief Operating Officer decides on disposition of the referrals for research misconduct based on input from staff in the Office of General Counsel, the Office of Integrative Activities, and the Office of the Director. In 2017, the NSF Director issued an Important Notice reminding NSF awardees of the NSF requirement for training in responsible conduct of research, and NSF’s strategic plan for FY2018-2022 emphasizes integrity as a core value. As reported by the OIG in its Spring 2017 Semiannual Report, the number of research misconduct referrals to NSF from FY 2005 through FY 2017 has remained relatively low and has not trended upward. NSF also performed a more detailed root cause analysis of referrals to the agency by the OIG in FY 2016 and FY 2017. In this 2-year period, NSF made 23 findings of research misconduct based on 24 referrals (excluding referrals arising from the Small Business Innovation Research/Small Business Technology Transfer programs). Nine of the findings arose from plagiarism by faculty in proposals to NSF that were not funded. Considering that the total number of referrals by the OIG is relatively low and NSF reviewed over 98,000 proposals and funded over 23,000 proposals in the same period, it is difficult to identify trends. However, NSF notes that a significant subset of findings involve plagiarism by faculty in unfunded proposals. NSF is addressing these issues through additional guidance and outreach. NSF will continue to track and analyze the OIG’s investigation referrals to assess responsive actions and identify new trends. NSF recognizes the potential high impact of research misconduct and has taken actions to reduce the likelihood of such activities.

NSF’s Anticipated Milestones					
<i>NSF management developed the anticipated milestones below in consideration of NSF’s strategic objectives, the risks inherent to NSF’s work, and the key actions NSF has already taken to address those risks.</i>					
(a)	<ul style="list-style-type: none"> • Publish the 2019 PAPPG with the additional language on the definition and consequences of research misconduct and on the NSF-funded resources available for RCR training. 	(b)	<ul style="list-style-type: none"> • Continue to fund the Online Ethics Center and research on best practices. • Incorporate workshop findings into the Online Ethics Center. • Hold a “promising practices summit” conference with examples of effective RCR approaches. • Publish revised PAPPG incorporating a reference to Chapters 9 (“Identifying and Promoting Best Practices for Research Integrity”) and 10 (“Education for the Responsible Conduct of Research”) of the NASEM report. • Continue to encourage awardees to incorporate promising RCR practices by initiating outreach regarding new PAPPG changes. 	(c)	<ul style="list-style-type: none"> • Use the new outreach materials for encouraging faculty to participate in RCR training and demonstrate best practices. • Encourage STEM faculty to incorporate RCR in their mentoring, teaching, and curriculum development.

FY 2018 Payment Integrity Reporting

The Improper Payments Information Act of 2002 (IPIA; Pub. L. 107-300), as amended by the Improper Payments Elimination and Recovery Act of 2010 (IPERA; Pub. L. 111-204), and the Improper Payments Elimination and Recovery Improvement Act of 2012 (IPERIA; Pub. L. 112-248), require agencies to annually report information on improper payments to the President and Congress through their annual Performance Accountability Reports (PARs) or AFRs. More detailed information on improper payments and all of the information previously reported in the AFR that is not included in the FY 2018 AFR can be found at <https://paymentaccuracy.gov/>.

I. Payment Reporting

Not applicable.

II. Recapture of Improper Payments Reporting

a. NSF is continuing its payment integrity risk mitigation activities by investing significant resources in its grant monitoring program. As a key component of the agency's grant monitoring program, NSF completes advanced monitoring activities that include desk reviews, site visits, and Business Systems Reviews of NSF's large facilities construction and operation. These activities provide assurance to the agency that grant recipient institutions managing higher-risk awards possess adequate policies, processes, and systems to properly manage federal awards. For other payments, NSF has implemented robust control activities to mitigate the risk of improper payments.

b. Payment Recapture Audits Narrative

NSF did not conduct payment recapture audits during FY 2018. On September 30, 2015, OMB agreed with NSF's analysis that it would not be cost effective for the agency to conduct a recapture audit program.

c. Programs Excluded from the Payment Recapture Audit Program

OMB Circular A-123, Appendix C, Part III.C.6 provides guidance on "What should an agency do if it determines that a payment recapture audit program would not be cost effective?" In FY 2015, NSF determined that it would not be cost effective to conduct recapture audits of its single grants program and other activities (contracts, charge cards, and payments to employees). On September 28, 2015, NSF notified OMB and the NSF Inspector General of this decision and included supporting analysis. OMB agreed with NSF's determination.

NSF has leveraged the results of the work performed under IPERA, audits, grant monitoring programs, and internal control reviews. All consistently demonstrated that there is not a significant risk of unallowable costs/improper payments within NSF's single grant program and other activities. For FY 2018, NSF reviewed current year results from the similar data sources as used in the 2015 analysis in order to insure there were no significant changes.

The IPERA risk assessment for FY 2018 was completed during the third and fourth quarter of FY 2018 and used qualitative factors to assess NSF's singular grant program and other activities. The risk assessment found there was not a significant risk of improper payments. This was consistent with the agency's history of low risk findings.

In the March 2018, NSF OIG Semi-Annual Report to Congress, the OIG's independent public accounting contractor identified projects that had total questioned costs of \$409,104; and the OIG investigative recoveries totaled \$1.53 million. These amounts are consistent with prior year's recoveries and indicate that there are no significant changes or emerging issues within the grantee

community that would signal increased risk for payment integrity. As part of the grants monitoring program, NSF tested grant payments for unallowable costs. The testing found that the estimated unallowable costs for grants paid through the Award Cash Management Service (ACM\$) were considerably below the improper payment criteria of 1.5 percent of program outlays and \$10 million of all program activity payments.

NSF’s annual review of internal controls included the following business processes: procure-to-pay, pay and benefits, charge cards, grants management, large facility oversight and information technology. The review examined the design, operating efficiency and effectiveness of key controls throughout the review areas. NSF issued an unmodified statement of assurance for its internal controls.

d. *Overpayments Recaptured Outside of Payment Recapture Audits*

NSF collected remittances outside of payment recapture audits related to the following: payment reviews or audits, OIG reviews, Single Audit reports, and self-reported overpayments. These are reflected in Table 3.3 below.

Table 3.3 – Improper Payment Recaptures without Audit Programs

(Dollars in Millions)

Overpayments Recaptured outside of Payment Recapture Audits			
Program or Activity	Amount Identified	Amount Recaptured	Percent Recaptured
Grants	\$13.433	\$13.470	100.3%
Contracts	\$0.360	\$0.314	87.2%
Travel	\$0.038	\$0.023	60.5%
Purchase Cards	\$0.000	\$0.000	N/A
Payroll and Other	\$0.114	\$0.093	81.6%
TOTAL	\$13.945	\$13.900	99.7%

e. *How Overpayments Recaptured through Payment Recapture Audits Were Used*

Not applicable.

f. *Agging Schedule of the Amount of Overpayments Identified Through the Payment Recapture Audit Program That are Outstanding*

Not applicable.

g. *Overpayments Identified Through Payment Recapture Audit Program Determined to Not be Collectable*

Not applicable.

III. Agency Improvement of Payment Accuracy with the Do Not Pay Initiative

NSF actively participates in OMB’s Do Not Pay (DNP) initiative to reduce improper payments through the implementation of pre-award and post-payment activities. During the pre-award review process for all grants and cooperative agreements, the agency has incorporated DNP safeguards that complement NSF’s existing policies and procedures for award management. NSF also has automated the reviews and centralized the pre-award verification. This has created efficiency gains by reducing the workload for manual verification.

NSF uses the Department of Treasury (Treasury) to disburse all funds. NSF payments are compliant with the Treasury’s Payment Application Modernization format and are screened against the following data sources: Social Security Death Master File (DMF) [public information] and the GSA System for Award Management (SAM) Exclusion Records [restricted information]. Any subsequent matches are viewable in Treasury’s DNP online portal for adjudication purposes. No additional data sources are available in the Treasury payment integration process at this time. In FY 2018, 51,222 payments totaling \$7 billion were screened through the Treasury DNP process (Table 3.4). NSF did not have positive matches for DMF or SAM.

Implementation of the Treasury’s Payment Application Modernization screening process has reduced the number of false positives from over 550 in the combined fiscal years 2014 – 2017 to zero in FY 2018. This has produced resource savings for the agency from not having to manually research each false positive using the DNP online portal.

Table 3.4 – Results of the Do Not Pay Initiative in Preventing Improper Payments

(Dollars in Millions)

	Number of payments reviewed for possible improper payments	Dollars of payments reviewed for possible improper payments	Number of payments stopped	Dollars of payments stopped	Number of potential improper payments reviewed and determined accurate	Dollars of potential improper payments reviewed and determined accurate
Reviews with the Do Not Pay databases	51,222	\$7,000.39	0	\$0	0	\$0
Reviews with databases not listed in IPERIA as Do Not Pay databases	N/A	N/A	N/A	N/A	N/A	N/A

IV. Barriers

Not applicable.

V. Accountability

Not applicable.

VI. Agency Information Systems and Other Infrastructure

Not applicable.

VII. Sampling and Estimation

Not applicable.

VIII. Risk Assessment

NSF conducted an improper payments risk assessment during the third and fourth quarters of FY 2018. NSF conducted risk reviews during FY 2016 and FY 2017, the first two years of the 3-year risk assessment cycle. The results of the risk reviews were rolled forward to inform and supplement the risk assessment in the third year. The risk reviews document the risk assessment and identify trends or issues that may have to be further explored during the risk assessment. The documentation is used to inform and support the conclusions for the risk reviews and risk assessment. The primary difference between the risk reviews and risk assessment is the breadth of input from Subject Matter Experts throughout the agency and increased coordination of activities with the Internal Controls and Quality Assurance program.

The risk reviews and assessments take into account the OMB risk factors likely to contribute to improper payments. NSF enhances the OMB risk factors with additional considerations that are intended to further refine the risk factors relative to NSF payment activities.

The risk reviews and risk assessment covered disbursements for the grants and cooperative agreements programs and administrative support functions for Contracts, Credit Cards and Payments to Employees through June 30, 2018. Disbursements for the fiscal year were reviewed after September 30, 2018 in order to validate that there were no significant changes during the period July 1 to September 30. The data source for the disbursement information was the general ledger of NSF's core financial management system, iTRAK. The disbursement data were reconciled to the gross outlays amount from the Statement of Budgetary Resources at June 30 and September 30 to provide assurance of coverage for the grants and cooperative agreements programs and administrative support functions.

Fraud Reduction Report

The Fraud Reduction and Data Analytics Act (FRDAA) of 2015, P.L. 114-186, requires agencies to improve federal agency financial and administrative controls and procedures to assess and mitigate fraud risks, and to improve federal agencies' development and use of data analytics for the purpose of identifying, preventing, and responding to fraud, including improper payments.

NSF used the GAO Green Book and leading practices from the Fraud Risk Management Framework methodology as the basis for continuing to develop its fraud risk profile and the broader fraud risk management strategy. GAO's Fraud Risk Management Framework outlines how to develop a fraud risk profile and the necessity of prioritizing risks determined to be the highest priority in order to better achieve agency objectives. NSF took into consideration the potential for fraud when prioritizing the FRDAA implementation activities. This included considering the types of fraud that could occur, fraud risk factors, and the agency response to identified fraud.

In FY 2018, NSF continued its implementation of the FRDAA requirements by conducting a fraud risk assessment of NSF's grants program. The assessment was conducted using four steps:

- Collected and analyzed information on: (1) grant policies, (2) past grant fraud cases, and (3) OIG activities to identify potential types of fraud and to better understand the operating environment;
- Interviewed stakeholders to identify types of grant fraud throughout the phases of the grant lifecycle;
- Completed an exploratory data review to identify key data elements that aligned with potential fraud schemes; and
- Developed a fraud map to outline potential fraud schemes and identify proposed analytics for possible future utilization to enhance fraud mitigation activities through pre-award reviews.

The FY 2018 fraud risk activities underscore NSF's commitment to reducing the risk of fraud. Further, they demonstrate the viability of analytic activities to improve monitoring activities and insure the effective operation of control activities. As NSF's fraud risk assessment program continues to mature, the risk assessment methodology implemented for the charge card and grants projects will be used as a model for application in other NSF business areas such as payments to employees and contracts. For FY 2019, NSF plans to conduct a fraud risk assessment within NSF's contracts area. NSF will continue to identify fraud risks and identify data and information that can be leveraged to improve controls and monitoring activities.

It is important to note that the data analytics capability developed during the FY 2017 fraud risk assessment of the credit card program was utilized by NSF to examine travel and purchase card data for the FY 2018 internal control review. The use of these analytics enabled NSF to identify trends in the data and to focus the internal control testing items on controls and fraud risks.

Undisbursed Balances in Expired Grant Accounts

In FY 2018, NSF funded research and education in science and engineering through grants and cooperative agreements to over 1,800 colleges, universities, and other institutions. NSF grants are funded in one of two ways: (1) the grant may be funded fully at the time of award, called a standard grant, or (2) the grant may be funded incrementally (one year at a time), called a continuing grant. In both cases, all costs on the grant must be incurred by the grantee during the term of the grant period. At NSF, grantees typically have 120 days after the grant expires to complete final drawdowns and expenditures.

The information provided here pertains to the agency’s two grant making appropriation accounts: Research and Related Activities and Education and Human Resources. The data reported are based on the following definitions:

- An **expired grant** is a grant award that has reached the grant end date and is eligible for closeout. For NSF, this means grants with an expired period of performance.
- **Undisbursed balances** on expired grants are amounts that remain available for expenditure before it is closed out.

Once a grant has expired, NSF takes actions to close out the grant both administratively and financially. The financial closeout action takes place 120 days after the award expiration date when the undisbursed balances are de-obligated from the award. Administrative closeout is initiated after financial closeout is completed.

The methodology used to develop undisbursed balances on expired grant awards is consistent with the U.S. Government Accountability Office (GAO) conclusions documented in their April 2012 report, GAO-12-360, *Grants Management: Action Needed to Improve the Timeliness of Grant Closeouts by Federal Agencies*, along with discussion and clarifying information from GAO. The data reported here reflects the amount of undisbursed balances in grant accounts that have reached their end date and are eligible for closeout.

1. **In the preceding three fiscal years, provide the total number of expired grant accounts with undisbursed balances (on the first day for each fiscal year) for the department, agency, or instrumentality and the total amount that has not been obligated to specific grant or project remaining in the accounts.**

The number of expired grants with undisbursed balances for the preceding three fiscal years is provided in Table 3.5. The numbers and balances reflect a point in time before expired awards are closed out during normal processes described above. For FY 2018, there were 5,225 expired grants with undisbursed balances of \$107,860,158.

Table 3.5 – Status of Undisbursed Balances in Expired Grants

	FY 2018 (as of 9/30/18)	FY 2017 (as of 9/30/17)	FY 2016 (as of 9/30/16)
Number of expired grants	5,225	4,982	5,132
Undisbursed balances prior to closeout	\$107,860,158	\$95,235,628	\$113,215,313

2. Details on future action the department, agency, or instrumentality will take to resolve undisbursed balances in expired grant accounts.

NSF continually monitors its grant awards throughout their lifecycle following a comprehensive post-award monitoring process. NSF grants are closed based on their period of performance end date. 120 days after the grant period has expired, all unliquidated (or undisbursed) award balances are de-obligated. Having small undisbursed balances at the end of the grant period is a routine occurrence, as not all grantees fully spend the funds obligated during the course of their research.

3. The method that the department, agency or instrumentality uses to track undisbursed balances in expired grant accounts.

NSF completes financial closeout of expired grant awards on a daily basis using a set of automated and manual activities. Eligibility for closeout for all NSF awards begins 120 days after the award expiration date. The NSF closeout process automatically de-obligates any unliquidated award balance, produces an award closeout transaction to flag the award as financially closed, and sends the financial closeout date to NSF's award management system. This initiates final administrative closeout procedures in the award management system.

The expected award closeout date is made available to awardees and staff through the Award Cash Management Service (ACM\$). ACM\$ requires the submission of award level payment amounts and expenditures each time funds are requested by awardees and allows NSF to complete post-award monitoring at the individual award level throughout the lifecycle of the award.

4. Process for identification of undisbursed balances in expired grant accounts that may be returned to the Treasury of the United States.

When a grant is closed out, the unliquidated balances are de-obligated. The de-obligated grant balances are treated one of three ways:

- If the source appropriation is still active, the balances are recovered by NSF and remain available for valid new obligations until the source appropriation's expiration date.
- If the source appropriation has expired but funds have not yet been canceled, the grant balances are recovered by NSF and remain available for upward adjustments on other existing obligations within the source appropriation.
- If the source appropriation has been canceled, the grant balances are returned to the Treasury.

Prior to September 30 of each year, all undisbursed grant balances in canceling appropriations are de-obligated and subsequently returned to Treasury.

Grants Oversight & New Efficiency (GONE) Act Report

The GONE Act was enacted in 2016 ([P. L. 114-117](#)) with the goal of holding federal awarding agencies accountable for the timely closeout of expired financial assistance awards. OMB's *Circular A-136, Financial Reporting Requirements*, requires GONE Act reporting on awards and balances for which closeout has not yet occurred but for which the period of performance has elapsed by more than two years. The total number of financial assistance awards, including grant, cooperative agreement, and fellowship awards that expired on or before September 30, 2015 but have not been closed out, was initially reported in NSF's FY 2017 AFR. Table 3.6, below, has been updated to reflect progress made in closing these awards during FY 2018.

Table 3.6 – Age and Balances for Expired Awards not Closed

(Dollars in Millions)

CATEGORY	2 – 3 Years	>3-5 years	>5 years
Number of Grants/ Cooperative Agreements With Zero Dollar Balances	64	237	50
Number of Grants/ Cooperative Agreements With Undisbursed Balances	0	0	0
Total Amount of Undisbursed Balances	\$0	\$0	\$0

Information shown above is as of 9/30/2018.

During FY 2018, NSF closed 132 awards, leaving 351 awards that had a period of performance ending on or before September 30, 2015 for which closeout had not occurred. These 351 expired awards shown in Table 3.6 were financially closed (i.e., there were no undisbursed balances), at 120 days after the award expiration date pursuant to NSF policy, but remain open for administrative reasons. Federal requirements incorporated into NSF policy state that a financial assistance award cannot be administratively (i.e., completely) closed until all the required project reports have been submitted, approved, and posted.

All except one of the remaining 351 awards reported above are open because the awardees have not yet provided the requisite final project reports.

NSF's continuous efforts to administratively close grants and cooperative agreements in a timely manner focus on obtaining these reports through system-driven and enforced business rules, including sending out due and overdue notices to the awardees; developing tools for awardee institutions and NSF program staff to identify outstanding reports; and blocking all financial and non-financial actions on any potential or active award by Principal Investigators (PIs) or co-PIs on projects with delinquent reports.

Reduce the Footprint

NSF completed its headquarters relocation from Arlington to Alexandria, Virginia in early FY 2018. The new headquarters has state-of-the-art flexible workspaces, functionally-based office and workspace standards, virtual technologies, cloud computing, and alternative workplace arrangements that will allow the agency to increase staff but not its real estate footprint over the next 15 years. Of note, the new lease rates in Alexandria are lower than the lease rates in Arlington.

The square footage reported in Table 3.7, aligns with the data reported in the *Federal Real Property Profile* and *GSA's Occupancy Agreement (OA) Database* for FY 2017. This reporting shows an increase in the usable square footage (USF) from 597,354 USF to 886,903 USF. This is higher than the FY 2015 baseline primarily due to the timing of NSF's relocation. At the close of the reporting period, NSF partially occupied the Arlington buildings and fully occupied the new Alexandria building. NSF expects the USF will decrease by almost 280,000 USF in FY 2018. This reduction reflects the FY 2018 release of the Arlington buildings to GSA. NSF anticipates maintaining the total USF amount for the OAs with GSA from FY 2018 to FY 2033.

Table 3.7 - Reduce the Footprint Policy Baseline Comparison

Description	FY 2015 Baseline	FY 2017	Change (from FY 2015 Baseline to FY 2017)
NSF Occupancy Agreements (USF)	597,354	886,903	289,549

Awards to Affiliated Institutions

The following chart lists institutions affiliated with members of the National Science Board (NSB) in FY 2018.

Affiliated Institution ¹	Awards Obligated in FY 2018 (Dollars in thousands)
Arizona State University	\$55,216
California Institute of Technology	89,258
Cornell University	12,055
Georgetown University	6,225
Georgia Institute of Technology	76,410
Illinois Institute of Technology	9,758
Massachusetts Institute of Technology	8,742
Michigan State University	76,873
Purdue University	67,746
Stanford University	67,189
Tufts University	11,502
University of California – Berkeley	18,438
University of Colorado	107,405
University of Florida	37,605
University of Michigan	102,140
University of Oregon	2,587
University of Tennessee	28,386
Washington University	20,213
TOTAL	\$ 797,748

¹This table is provided solely in the interest of openness and transparency. This table lists the dollar value of the awards made to institutions affiliated with NSB members during their time on the NSB in fiscal year ended September 30, 2018. NSB establishes the policies of NSF within the framework of applicable national policies set forth by the President and Congress. Federal conflict of interest rules prohibit NSB members from participating in matters where they have a conflict of interest or there is an impartiality concern without prior authorization from the designated agency Ethics Official. Individual NSF grant awards are made pursuant to a peer-review based process and most are not reviewed by the NSB. With regard to matters that are brought to the Board, NSB members are not involved in the review or approval of grant awards to their affiliated institutions. The table displaying Awards to Affiliated Institutions applicable to the previous fiscal year is available in the Appendices at <https://www.nsf.gov/pubs/2018/nsf18020/pdf/nsf18020.pdf>. Because of the regular turnover among NSB membership, the information in these tables is not directly comparable across years.

Awards to Assistant Director IPAs' Home Institutions by NSF Directorates

The following tables identify the awards made by directorates to the home institutions of Assistant Directors serving under the Intergovernmental Personnel Act (AD IPAs) during their time at NSF for the fiscal years ended September 30, 2018 and 2017. AD IPAs led six of the seven directorates during both fiscal years ended on September 30, 2018 and September 30, 2017. NSF executive staff formulate directorate or office scientific goals, objectives, and priorities. Federal conflict of interest rules prohibit executives, including IPA detailees who serve in AD positions, from participating in matters where they have a conflict of interest or an impartiality concern. NSF grant awards are made pursuant to a merit-review based process and are not routinely reviewed by IPAs serving in executive positions. If matters are brought to such IPAs, they do not participate in the review or approval of awards to their home institutions. The following tables are provided in the interest of openness and transparency.

Table 3.8 – FY 2018 Awards to AD IPAs' Home Institutions
(Dollars in Thousands)

Directorate	Total Dollars and Awards Made by Directorate in FY 2018 ¹	Home Institution of IPA Assistant Director	Total Dollars and Awards to Home Institution by Directorate in FY 2018	Total Dollars and Awards to Home Institution by NSF in FY 2018
Computer & Information Science & Engineering	\$944,819 (3,427 awards)	University of Massachusetts Amherst	\$7,667 (28 awards)	\$30,331 (106 awards)
Engineering	\$958,598 (3,624 awards)	University of Michigan	\$16,328 (64 awards)	\$102,140 (302 awards)
Geosciences	\$1,494,531 (2,601 awards)	The Pennsylvania State University	\$10,929 (37 awards)	\$75,783 (253 awards)
Mathematics & Physical Sciences	\$1,580,787 (4,816 awards)	George Washington University	\$2,599 (15 awards)	\$20,086 (75 awards)
Social, Behavioral, & Economic Sciences ²	\$227,241 (1,252 awards)	Northwestern University	\$2,194 (19 awards)	\$43,221 (139 awards)
		University of Michigan	\$6,779 (5 awards)	\$17,535 (27 awards)
Biological Sciences	\$762,918 (2,180 awards)	George Mason University	\$0 (0 awards)	\$100 (2 awards)
Total	\$5,968,894 (17,900 awards)		\$46,496 (168 awards)	\$271,661³ (877 awards)

¹ Some NSF awards are split funded, meaning an award is funded by two or more directorates. For a split-funded award in this column: the award is counted for each directorate; the award funding is only the split-funded amount.

² This directorate was led by two AD IPAs during the fiscal year. To reflect this, home institution award data is shown for the portion of the year each IPA served as AD.

³ Two IPAs from the University of Michigan served as ADs during FY 2018. Award dollars and count have been reduced by \$17,535,000 and 27 awards, respectively, in this total box to avoid double counting.

Table 3.9 – FY 2017 Awards to AD IPAs' Home Institutions

(Dollars in Thousands)

Directorate	Total Dollars and Awards Made by Directorate in FY 2017 ¹	Home Institution of IPA Assistant Director	Total Dollars and Awards to Home Institution by Directorate in FY 2017	Total Dollars and Awards to Home Institution by NSF in FY 2017
Computer & Information Science & Engineering	\$921,475 (3,216 awards)	University of Massachusetts Amherst	\$11,905 (51 awards)	\$54,313 (192 awards)
Engineering	\$910,819 (3,543 awards)	University of Michigan	\$9,568 (38 awards)	\$72,063 (184 awards)
Geosciences ²	\$1,403,842 (2,785 awards)	University of Colorado-Boulder	\$17,512 (76 awards)	\$67,390 (201 awards)
		The Pennsylvania State University	\$3,910 (22 awards)	\$46,018 (162 awards)
Mathematics & Physical Sciences	\$1,445,057 (4,709 awards)	University of Wisconsin Madison	\$168 (2 awards)	\$3,142 (17 awards)
Social, Behavioral, & Economic Sciences	\$245,594 (1,364 awards)	Northwestern University	\$3,150 (16 awards)	\$39,408 (133 awards)
Biological Sciences	\$755,646 (2,299 awards)	George Mason University	\$64 (2 awards)	\$16,054 (62 awards)
Total	\$5,682,433 (17,916 awards)		\$46,277 (207 awards)	\$298,388 (951 awards)

Patents and Inventions Resulting from NSF Support

The following information about inventions is being reported in compliance with Section 3(f) of the National Science Foundation Act of 1950, as amended [42 U.S.C. 1862(f)]. There were 1,552 NSF invention disclosures reported to NSF either directly or through the National Institutes of Health's iEdison database during FY 2018. Rights to these inventions were allocated in accordance with Chapter 18 of Title 35 of the United States Code, commonly called the "Bayh-Dole Act."

Acronyms

ACMS	Award Cash Management Service	HRM	Division of Human Resource Management
ADA	Anti-Deficiency Act	IG	Inspector General
AFR	Agency Financial Report	IPA	Intergovernmental Personnel Act
AICA	American Innovation and Competitiveness Act of 2017	IPERA	Improper Payments Elimination and Recovery Act of 2010
AIMS	Antarctic Infrastructure Modernization for Science	IPERIA	Improper Payments Elimination and Recovery Improvement Act of 2012
AOAM	Agency Operations and Award Management	IT	Information Technology
APR	Annual Performance Report	K-12	Kindergarten to Grade 12
ASC	Antarctic Support Contract	LFM	Large Facilities Manual
BFA	Office of Budget, Finance and Award Management	LFO	Large Facilities Office
BOAC	Business & Operations Advisory Committee	MREFC	Major Research Equipment and Facilities Construction
CCE STEM	Cultivating Cultures for Ethical STEM	NARA	National Archives and Records Administration
CFO	Chief Financial Officer	NSB	National Science Board
DAS	Division of Administrative Services	NSF	National Science Foundation
DATA Act	Digital Accountability & Transparency Act	O/D	Office of the Director
DIS	Division of Information Systems	OIG	Office of Inspector General
DNP	Do Not Pay (Initiative)	OIRM	Office of Information and Resource Management
DOL	Department of Labor	OMB	Office of Management and Budget
EHR	Education and Human Resources	OPM	Office of Personnel Management
ERM	Enterprise Risk Management	PL	Public Law
FASAB	Federal Accounting Standards Advisory Board	PP&E	General Property, Plant, and Equipment
FBWT	Fund Balance with Treasury	R&D	Research and Development
FECA	Federal Employees' Compensation Act	R&RA	Research and Related Activities
FFMIA	Federal Financial Management Improvement Act of 1996	RCR	Responsible Conduct of Research
FFRDC	Federally Funded Research and Development Center	RSSI	Required Supplementary Stewardship Information
FISMA	Federal Information Security Management Act of 2002	SBR	Statement of Budgetary Resources
FMFIA	Federal Managers' Financial Integrity Act of 1982	SFFAS	Statement of Federal Financial Accounting Standards
FTE	Full-Time Equivalent	SOG	Standard Operating Guidance
FY	Fiscal Year	SSAE	Statement on Standards for Attestation Engagements
GAAP	Generally Accepted Accounting Principles	STEM	Science, Technology, Engineering, and Mathematics
GAO	Government Accountability Office	USAP	United States Antarctic Program
GEO	Directorate for Geosciences	USSGL	U.S. Standard General Ledger
GONE	Grants Oversight and New Efficiency (Act)		
GPRA	Government Performance and Results Modernization Act of 2010		
GSA	General Services Administration		
H-1B	H-1B Nonimmigrant Petitioner Account		