

# Office of Audits Annual Work Plan Fiscal Year 2018

NATIONAL SCIENCE FOUNDATION  
OFFICE OF INSPECTOR GENERAL

October 30, 2017





## About the Office of Inspector General

The *Inspector General Act*, as amended in 1988, authorizes an Office of Inspector General for the National Science Foundation. The OIG is independent of NSF and reports directly to Congress and the National Science Board (NSB). By statute, OIG conducts and supervises independent audits and investigations relating to agency programs and operations and recommends policies that promote effectiveness and efficiency and prevent and detect fraud, waste, and abuse.

Consistent with its statutory mandate and operational mission, OIG performs an oversight role and does not engage in program operations. Our work is divided into two functional areas: investigations, which address allegations of serious wrongdoing, such as violations of criminal or civil law or fabrication of data and plagiarism in NSF-funded research; and audits, which assess the functionality of systems, determine compliance with financial standards and grant requirements, and identify ways to improve systems and operations.

The Office of Audits (OA) is responsible for auditing grants, contracts, and cooperative agreements funded by the Foundation's programs. We review agency operations and ensure that financial, administrative, and programmatic aspects of agency operations are conducted economically and efficiently. We conduct audits of NSF awardees to determine whether costs claimed are allowable, reasonable, and properly allocated, and whether the awardees complied with Federal and NSF requirements. We are responsible for projects required by law but, as resources permit, also undertake discretionary work.

## Required Projects

Required projects in the Fiscal Year 2018 Audit Work Plan include:

- Audit of NSF's financial statements required by the *Chief Financial Officers Act of 1990*;<sup>1</sup>
- Evaluation of NSF's information security program, required by the *Federal Information Security Modernization Act of 2014*;<sup>2</sup>
- Review of NSF's compliance with Federal standards for reporting financial and payment data on a public website, required by the *Digital Accountability and Transparency Act of 2014*;<sup>3</sup>
- Audit of NSF's processes to oversee awardees' monitoring of their subrecipients, required by the *American Innovation and Competitiveness Act of 2017*;<sup>4</sup> and
- Audit of NSB compliance with the *Government in the Sunshine Act of 1976*,<sup>5</sup> required by the *National Science Foundation Act of 1950*,<sup>6</sup> as amended.

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<sup>1</sup> Pub. L. No. 101-576

<sup>2</sup> Pub. L. No. 113-283

<sup>3</sup> Pub. L. No. 113-101

<sup>4</sup> Pub. L. No. 114-329

<sup>5</sup> Pub. L. No. 94-409

<sup>6</sup> 42 USC 1862n-5(a)(2) and (a)(3)



## Discretionary Projects

As resources permit, we also undertake discretionary projects as part of our mission to promote effectiveness and efficiency in agency programs and operations. Factors we consider when selecting discretionary audits include:

- Achievement of the goals in NSF's Strategic Plan;
- NSF's top management challenges, which we identify annually;
- OIG risk assessments, using data analytics;
- Input from stakeholders, such as Congress, the Office of Management and Budget, the NSB, and NSF;
- Results of prior audits; and
- Referrals from the Office of Investigations and other Federal agencies.

In developing work plans, we focus on select parts of NSF's mission responsibilities, whether external, such as how the agency oversees its awardees, or internal, such as how it manages its workforce. In FY 2018, we envision our portfolio of discretionary work to consist of two parts:

- A. Projects We Will Likely Undertake in FY 2018
- B. Projects We Are Following and Which Might Be Reviewed in Future Years

The plan is flexible, however. We may need to modify it to address high priority issues that come up during the year or to respond to requests from Congress or other stakeholders.

### A. Projects We Will Likely Undertake in FY 2018

Based on risk, we have selected the following six areas of focus in FY 2018:

1. Accountability over major facilities
2. Management of contracts
3. Oversight of foreign awardees
4. Funding model for the University-National Oceanographic Laboratory System's major overhaul and stabilization accounts
5. Incurred cost audits of NSF awardees
6. Review of the quality of Single Audits

These areas focus internally on NSF management, or externally on how awardees spend NSF funds. In some cases, the focus is both internal and external. In addition, the reviews of Single Audits focus on the audits' compliance with Federal guidance.



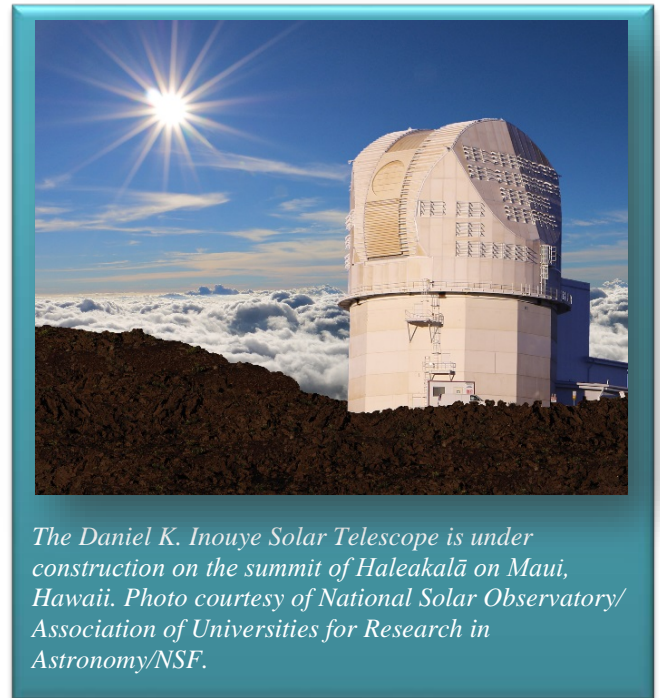
## 1. Accountability over Major Facilities

As of July 2017, NSF had 23 major multi-user research facilities (major facility).<sup>7</sup> To fund the construction, operation, and maintenance of these facilities, NSF requested about \$1.15 billion in its FY 2018 Budget Request. Effective oversight of these projects is one of NSF's greatest management challenges: since 2010, we have issued 59 reports with 149 recommendations pertaining to NSF's major facilities.

In addition, a 2015 National Academy of Public Administration report found that NSF had prioritized scientific research over management of its major facility construction projects and needed "to apply equal emphasis on increased internal management of the business practices critical to enhanced oversight and project success."<sup>8</sup>

Most recently, on January 6, 2017, President Obama signed into law the *American Competitiveness and Innovation Act (AICA)*.<sup>9</sup> One of its requirements is that NSF increase its "oversight and accountability over the full life-cycle of each major multi-user research facility project, including planning, development, procurement, construction, operations, and support, and shut-down of the facility, in order to maximize research investment."<sup>10</sup>

In FY 2018, we plan to issue the results of an ongoing major facilities audit. Its objective is to review NSF's controls to ensure that major facility awardees properly charge project expenditures to construction or operations awards so that these award funds are used as intended. This issue is of long-standing OIG concern: as early as 2000, we found that an awardee planned to use operations funds to cover a construction cost overrun.<sup>11</sup> In addition, as noted previously, the AICA requires us to audit NSF's processes for overseeing how awardees monitor their subrecipients. Therefore, that separate audit is included in the previous section on required audits.



*The Daniel K. Inouye Solar Telescope is under construction on the summit of Haleakalā on Maui, Hawaii. Photo courtesy of National Solar Observatory/ Association of Universities for Research in Astronomy/NSF.*

<sup>7</sup> The term "major multi-user research facility," or "major facility," is synonymous with the term "large facility," used previously in our reports. The new terminology better aligns with the *American Innovation and Competitiveness Act* (Pub. L. No. 114-329), signed into law on January 6, 2017.

<sup>8</sup> *National Science Foundation: Use of Cooperative Agreements to Support Large Scale Investment in Research*, National Academy of Public Administration, December 2015

<sup>9</sup> Pub. L. No. 114-329

<sup>10</sup> Pub. L. No. 114-329 § 110(a)(1)

<sup>11</sup> *Audit of the Financial Management of the Gemini Project*, OIG Report No. 01-2-001, December 15, 2000



*Planned for 2018*

- Assess NSF's controls to prevent misallocation of appropriations for the construction and operations of major facilities.

2. Management of Contracts

In FY 2016, NSF obligated approximately \$420.6 million for contracts to procure products and services, including \$180.8 million for the Antarctic Logistical Support contract. Monitoring these contracts has been a challenge for NSF: in the FYs 2009 and 2010 Financial Statement audits, contract monitoring was a significant deficiency, and auditors recommended that, based on risk, NSF obtain incurred cost audits of its cost reimbursable contracts. Most recently, the FY 2016 Management Letter suggested that NSF develop and implement a plan to determine which cost reimbursable contracts require incurred cost audits and discuss with OIG a plan to obtain necessary audits.

In addition, in 2013, the U.S. Government Accountability Office (GAO) issued an audit of NSF's contracting practices.<sup>12</sup> GAO recommended that NSF strengthen its guidance on acquisition planning to include a focus on the initial stages and also recommended that NSF obtain timely incurred cost audits of its major contracts.

As part of our required work, the Financial Statement auditors will continue to follow up on NSF's management of contract monitoring, and we will coordinate a new discretionary audit with the required audit to avoid duplication. We expect that the discretionary audit will focus on NSF's compliance with Federal and NSF contracting requirements.

*Planned for FY 2018*

- Audit NSF's compliance with contracting requirements in the *Federal Acquisition Regulation* and the *National Science Foundation Acquisition Manual*.

3. Oversight of Foreign Awardees

Previously we audited three foreign awardees funded by NSF,<sup>13</sup> and the results indicated that the agency needed to improve its oversight of these recipients. Findings in those audits included:

- Lack of documentation verifying the legal status of the awardee;
- Inadequate provisions for ensuring the awardee's financial accountability;
- NSF funding a disproportionate share of the awardee's research projects;
- Lack of awardee oversight of its subrecipients;

<sup>12</sup> *National Science Foundation: Steps Taken to Improve Contracting Practices, but Opportunities Exist to Do More*, GAO-13-292, March 28, 2013

<sup>13</sup> *Audit of International Geosphere-Biosphere Programme*, OIG Report No. 03-2-014, September 30, 2003; *Audit of Inter-American Institute for Global Change Research*, OIG Report No. 04-2-007, September 30, 2004; *Audit of United States-Mexico Foundation for Science*, OIG Report No. 05-2-005, December 8, 2004



- Excessive drawdowns of advance funds; and
- Lack of award provisions to ensure compliance with U.S. appropriations law.

In FY 2018, we identified NSF’s universe of foreign awardees and are in the process of determining areas of high risk. We plan to initiate an audit of NSF’s oversight of foreign awardees this fiscal year.

*Planned for 2018*

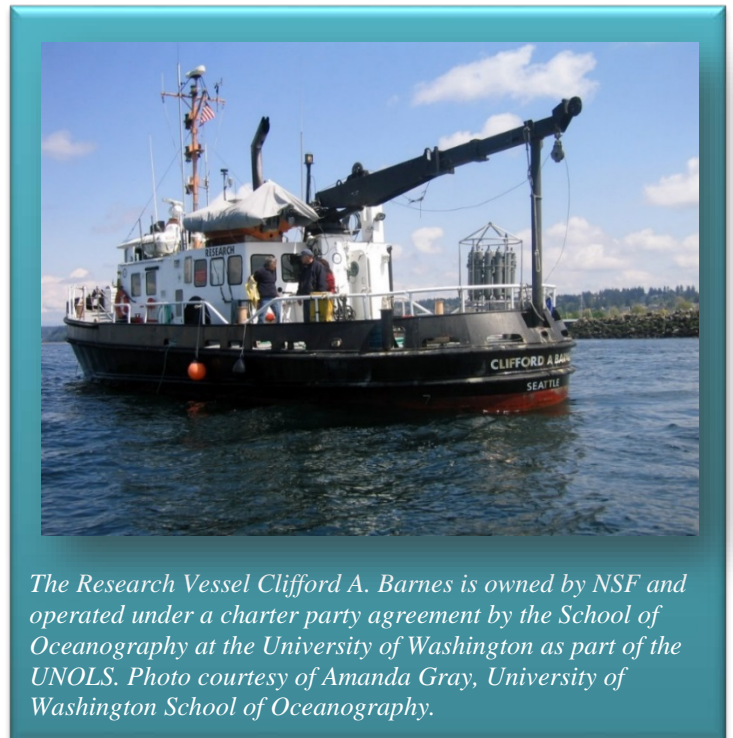
- Initiate an audit on NSF’s processes for monitoring awards to foreign awardees.
4. Funding Model for the University-National Oceanographic Laboratory System’s Major Overhaul and Stabilization Accounts

The University-National Oceanographic Laboratory System (UNOLS) operates a fleet of more than 20 ships for academic oceanographic research. Operating costs are funded by NSF and other users based on a day rate calculated from estimated annual costs and projected annual use days. There are two components to the annual costs:

1. Regular ship operating costs, and
2. Major Overhaul and Stabilization Account (MOSA) expenses, which are projected over a 5-year period.

The regular operating-cost portion of the day rate approximates actual costs. However, the MOSA expenses, which are projected so far in advance, may not. As a result, awardees may draw down funds years in advance of actual expenditure needs, which could result in an accumulated surplus, and is contrary to Federal guidance that payment methods must minimize the time between drawdowns and expenditures. Once such funds are drawn down, NSF has no direct insight into how they are expended, and there is a risk that the recipient could use the surplus for other purposes, leaving it without the necessary funds for repair when needed.

A 2017 OIG audit found that an NSF awardee had a surplus of more than \$300,000 of unspent MOSA funds for one vessel.<sup>14</sup> We now plan to determine the extent of MOSA surpluses more generally.



*The Research Vessel Clifford A. Barnes is owned by NSF and operated under a charter party agreement by the School of Oceanography at the University of Washington as part of the UNOLS. Photo courtesy of Amanda Gray, University of Washington School of Oceanography.*

<sup>14</sup> *Research Vessel Oceanus at Oregon State University*, OIG Report No. 17-1-004, March 22, 2017



*Planned for FY 2018*

- Assess the amount of outstanding MOSA surpluses across the UNOLS.

5. Incurred Cost Audits of NSF Awardees

Awarding funds for research and education in science, technology, engineering, and mathematics (STEM) is NSF's primary business. With an appropriation of \$7.5 billion in FY 2016, NSF evaluated 49,300 proposals through its merit review process and made 11,900 awards. It funded 1,833 institutions and more than 360,000 researchers, postdoctoral fellows, trainees, teachers, and students. The size and breadth of NSF's portfolio increases the risk that NSF may not detect misspent funds. Therefore, in FY 2018, we will continue to audit NSF awardees to detect improper spending or noncompliance with Federal and NSF requirements.

*Planned for FY 2018*

- Audit incurred costs and compliance with applicable requirements at various universities, non-profits, and for-profit entities.

6. Review of the Quality of Single Audits

Awardees who spend more than \$750,000 a year are required to obtain a Single Audit, which is an important tool for Federal agencies in their oversight of awardees. Single Audits for awardees' fiscal years ending in 2016 covered approximately \$6 billion of NSF's funds. We will continue to review the quality of the presentation of the reporting package for Single Audits of NSF awardees for which NSF has audit cognizance or oversight — defined generally as those institutions that receive the majority of their Federal funding from NSF — as well as non-NSF cognizant or oversight awardees when we have concerns regarding the NSF-related information contained in the reports to determine whether the audits comply with Federal requirements and professional audit standards.

*Planned for FY 2018*

- Conduct desk reviews of approximately 120 Single Audit report packages.
- Conduct quality control reviews of the audit work for two Single Audits.



## B. Projects We Are Following and Which Might Be Reviewed in Future Years

We are following the progress of several projects that will not undergo audit in FY 2018 but might become audit candidates in the future. Listed below are five projects in this category:

1. Contract for the logistical support for the United States Antarctic Program
2. Antarctic Infrastructure Modernization for Science
3. Regional Class Research Vessel(s)
4. Association of Universities for Research in Astronomy/National Center for Optical-Infrared Astronomy
5. NSF's implementation of requirements in the *American Innovation and Competitiveness Act of 2017*

### 1. Contract for the Logistical Support for the United States Antarctic Program

In December 2011, NSF awarded a 13-year contract, valued at nearly \$2 billion, to Lockheed Martin Company to provide logistical support for USAP. The Defense Contract Audit Agency recently audited Lockheed Martin's incurred costs for USAP, and the costs of its largest subcontractor, PAE Government Services, Inc., for FYs 2012 and 2013.

In addition, in 2016, Lockheed Martin's Information Systems & Global Solutions business segment merged with Leidos Holdings, Inc. (Leidos), which currently holds the USAP contract.

#### *Planned for FY 2018*

- Assess the results of the Defense Contract Audit Agency audits to determine whether future OIG audits are warranted.
- Assess the risks to NSF of the 2016 change in contract holder.

### 2. Antarctic Infrastructure Modernization for Science

NSF has developed the Antarctic Infrastructure Modernization for Science (AIMS) project for modernizing its USAP facilities, primarily those at McMurdo Station. In its FY 2018 Budget Request, NSF requested \$1.8 million to bring the project to the final design-review stage and to prepare for the construction phase. Leidos, the prime USAP contractor, plans to subcontract this work. The construction of the four components of the project is estimated to cost between \$150 and \$225 million.







*Planned for FY 2018*

- Monitor the progress of AIMS.

3. Regional Class Research Vessel(s)

The Regional Class Research Vessel (RCRV) project is part of a plan to modernize the U.S. Academic Research Fleet. In 2013, NSF selected Oregon State University to construct the ships, and in 2016, the NSB authorized including funds in future budgets for two vessels. The total estimated cost to construct them is \$255.5 million. In its FY 2018 Budget Request, NSF requested \$105 million, which represented the second year of a multi-year funding plan to build two ships. The future of the project and the number of vessels to be constructed is contingent on congressional funding.

*Planned for FY 2018*

- Monitor RCRV construction to determine risk and whether a future audit is warranted.

4. Association of Universities for Research in Astronomy/National Center for Optical-Infrared Astronomy



*An aerial image of the Cerro Tololo Interamerican Observatory in Chile. It is operated by AURA, under a cooperative agreement NSF as part of the National Optical Astronomy Observatories (NOAO). Photo courtesy of NOAO/AURA/NSF.*

In February 2017, we initiated an audit of the Association of Universities for Research in Astronomy's (AURA) indirect cost rate structure. However, during that audit we learned that there is an initiative underway to bring three NSF-funded entities managed by AURA into a new administrative framework — the National Center for Optical-Infrared Astronomy (NCOA). Since the findings of the ongoing audit would no longer be relevant when the initiative is completed, we decided in August 2017 to stop work on the AURA audit and instead issue a brief report on observations up to that point. Nevertheless, we plan to monitor AURA and the NCOA during the expected transition.

*Planned for FY 2018*

- Monitor AURA and its NCOA initiative.



5. NSF's Implementation of Requirements in the American Innovation and Competitiveness Act of 2017

As previously discussed, on January 6, 2017, President Obama signed the AICA into law. More than 35 sections apply to NSF, and some require NSF to report its actions to Congress. For example, NSF is required to report its strategy for mid-scale projects and its oversight of its major facilities to Congress. It is also required to report the costs associated with employing temporary personnel (rotators), its efforts to control those costs, and its response to OIG recommendations that NSF reduce these costs.

We have been tracking NSF's actions to implement its AICA requirements and will consider whether to audit the agency's compliance with the Act in the future. However, we do not currently plan to audit this area in FY 2018.

*Planned for FY 2018*

- Continue monitoring NSF compliance with the AICA.

## Contact Us

For further information, contact us at (703) 292-7100 or [oig@nsf.gov](mailto:oig@nsf.gov).



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