

OFFICE OF INSPECTOR GENERAL (OIG)

\$20,420,000
+\$2,570,000 / 14.4%

The Appropriations Act that funds the National Science Foundation contains a separate appropriation for NSF’s Office of Inspector General. Accordingly, this FY 2022 Budget Request identifies the resources needed to support OIG, including amounts for personnel compensation and benefits (PC&B), contract services, training, travel, supplies, materials, and equipment.

The FY 2022 Budget Request for OIG is \$20.42 million, an increase of \$2.57 million over the FY 2021 Enacted of \$17.85 million.

| OIG Funding | | | | | |
|------------------------------|----------------|----------------|----------------|------------------|--------------|
| (Dollars in Millions) | | | | | |
| | FY 2020 | FY 2021 | FY 2022 | Change over | |
| | Actual | Enacted | Request | FY 2021 Estimate | Percent |
| | | | | Amount | |
| Total | \$16.30 | \$17.85 | \$20.42 | \$2.57 | 14.4% |
| Full-Time Equivalent (FTEs) | 68 | 71 | 79 | 8 | 11.3% |

OIG Responsibilities and Structure

OIG provides independent oversight of NSF’s programs and operations. The office promotes effectiveness, efficiency, and economy in administering the Foundation’s programs and prevents and detects fraud, waste, and abuse within NSF or by individuals who receive NSF funding. By statute, NSF OIG is organizationally independent from the agency, with the Inspector General (IG) reporting directly to the National Science Board and Congress. Given the geographic breadth of the projects NSF funds, OIG needs to be equipped to conduct audits and investigations across the continental U.S., Alaska, Hawaii, Puerto Rico, and Antarctica. To fulfill its important mission, OIG employs a diverse staff of scientists, attorneys, certified public accountants, criminal investigators, management analysts, data analysts, and information technology specialists. OIG’s FY 2020 appropriation was just 0.20 percent of NSF’s nearly \$8.3 billion appropriation and 0.05 percent of NSF’s approximately \$32.0 billion portfolio of active awards, yet OIG provides a much greater return on investment and serves as an invaluable safeguard against fraud, waste, abuse, and whistleblower reprisal.

OIG’s work is divided into two functional areas: The Office of Audits and the Office of Investigations, which are supported by the Office of Management, Office of Counsel, and the IG’s Immediate Office. Highlights of the OIG’s operational impact and strategic focus by functional area follow.

Appropriations Language

For necessary expenses of the Office of Inspector General as authorized by the Inspector General Act of 1978, \$~~17,850,000~~**20,420,000**, of which \$400,000 shall remain available until September 30, ~~2022~~**2023**.

**Office of Inspector General
FY 2022 Summary Statement**
(Dollars in Millions)

| | Enacted/ Request | Unobligated Balance Available Start of Year | Unobligated Balance Available End of Year | Adjustments to Prior Year Accounts | Obligations Actual/ Estimates |
|----------------------------------|---------------------|---|---|--|-------------------------------------|
| FY 2020 Appropriation | \$16.50 | \$0.40 | -\$0.40 | -\$0.20 | \$16.30 |
| FY 2021 Estimated | 17.85 | 0.40 | | | 18.25 |
| FY 2022 Request | 20.42 | | | | 20.42 |
| \$ Change from FY 2021 Estimated | | | | | \$2.17 |
| % Change from FY 2021 Estimated | | | | | 11.9% |

Totals exclude reimbursable amounts.

Explanation of Carryover

Within the OIG two-year account, \$400,000 was carried over into FY 2021.

Office of the Inspector General

- Amount: \$400,000
- Purpose: Funds are expected to be used to procure financial and performance audit services. The selection of awards and institutions to be audited will require careful preparation and is subject to changing circumstances and new information that may require additional time to process.
- Obligation: Anticipated FY 2021 Quarter 3

Audit Impact and Strategic Focus

OIG’s Office of Audits (OA) conducts audits of NSF’s contracts, cooperative agreements, and grants to universities and other research institutions, as well as internal audits of NSF’s programs. These audits help ensure that financial, administrative, and programmatic activities are conducted economically, effectively, and in compliance with applicable regulations.

From FY 2017 through FY 2020, OIG audited approximately \$8.50 billion in NSF funding in 27 states and Washington, D.C.—resulting in 92 audit and other engagement reports containing a total of \$12.0 million in questioned costs and 739 recommendations to recover misspent funds and improve awardee and NSF operations.

In FY 2019, OA identified more than \$4.90 million in questioned costs and made 252 recommendations to strengthen program and grant operations. As a result of OIG audits, NSF recouped misspent funds and required awardees to improve their management of NSF awards and subawards to prevent future misuse of taxpayer money. NSF also took other corrective actions in FY 2020 in response to recent audits, for example, NSF:

- Installed pharmacy tracking systems at all three United States Antarctic Program clinics.
- Prohibited apps that encrypt and automatically delete messages and implemented controls to identify and remove blacklisted apps from staff’s mobile devices.
- Required major facilities award recipients to submit allocation plans explaining how they will allocate expenses during overlapping construction and operations stages.
- Established a process for assessing and documenting the cost and scientific impact of uncompleted major facility construction tasks and NSF’s approval for moving such tasks to operations.

- Ensured that inflation factors are included in future major facility operations proposals and are reviewed and evaluated; and
- Ensured that staff have the authority and resources to implement the *Foundations for Evidence-based Policymaking Act of 2018*.

These improvements increased the effectiveness and efficiency of NSF programs and made NSF a better steward of federal funds.

Areas of Risk for Potential Audit Coverage in FY 2022

Much of OIG's audit work is mandatory, including the annual financial statement audits, as well as audits required by the *Federal Information Security Management Act*, the *Digital Accountability and Transparency Act* and the *Improper Payments Elimination and Reduction Act*. For discretionary audits, OA uses a risk-based approach to identify the highest priority issues that would benefit from OIG review. Although additional areas may emerge by FY 2022, the top three current high-risk areas include:

COVID-19 Impacts on NSF Major Research Equipment and Construction (MREFC) Projects

COVID-19 has increased the risk to MREFC projects, including the Daniel K. Inouye Solar Telescope, Vera C. Rubin Observatory (formerly the Large Synoptic Survey Telescope), Antarctic Infrastructure Modernization for Science (AIMS), Regional Class Research Vessels, and the High-Luminosity Large Hadron Collider. As of July 2020, NSF reported COVID-19 impacts to all of these projects. For example, NSF estimated a one-year construction delay for the Vera C. Rubin Observatory at a cost increase of \$40.0 to \$50.0 million. Additionally, on-site work for the AIMS project was halted in March 2020, and no on-ice work is planned for the 2020-2021 season. NSF plans to re-baseline the entire AIMS project during FY 2021. In FY 2022, OIG will continue to monitor the progress on all high-risk MREFCs, and initiate audits as needed.

Divestment of Major Facilities

NSF funds the construction, management, and operation of major research facilities, which are shared-use infrastructure accessible to a broad community of researchers and educators. NSF's major facilities typically have construction costs greater than \$70.0 million, with total construction costs ranging from one hundred to several hundred million dollars over a multi-year period. Once the award recipient completes construction, NSF facilities may operate for 20 to 40 years with annual operations and maintenance budgets ranging between 6 and 10 percent of the original construction cost. The *American Innovation and Competitiveness Act* (Pub. L. No. 114-329), requires NSF to address divestment as part of the lifecycle plans for its major facilities. At a time of rising costs, divestment is an essential part of NSF's responsibilities for managing its major facilities. We will assess the adequacy of NSF's processes for identifying, planning for, and managing divestment of its major facilities.

Mid-scale Research Infrastructure

In its FY 2021 Budget Request, NSF requested more than \$97.0 million for mid-scale projects. These projects, which cost between \$6.0 and \$70.0 million, include research instrumentation, equipment, and upgrades to major research facilities or other research infrastructure investments. NSF's September 2019 *Major Facilities Guide* provides guidance for these projects. We may review management requirements in mid-scale solicitations, controls for mid-scale projects, and training and experience of NSF staff responsible for making and overseeing mid-scale awards.

Audits of Recipients of NSF Grant Funds

Discretionary audits of NSF recipients are an essential part of OA's efforts to protect NSF funds. All statutorily mandated audits and most in-house performance audits focus on NSF's internal operations. Because the bulk of NSF's funding is provided to the academic community via grants and cooperative agreements, robust oversight of that funding is imperative. Audits of NSF recipients determine whether

awardees comply with the financial and administrative terms and conditions of the awards. They address the highest risk areas at institutions, identifying systemic issues, recapturing misused funds, and making recommendations ensuring proper stewardship of federal funds going forward.

Historically the OIG has procured audits of NSF recipients (which in FYs 2017-2019 covered between \$22.0 million and \$440.0 million in NSF funding) to provide this much-needed audit coverage over the recipient community. Beyond the findings specific to the institutions being audited, these audits may identify evidence of behavior that could violate criminal or civil laws, which OA would refer to the Office of Investigations. Additionally, these audits may identify inconsistent treatment of similar charges across the academic community, which OA would share with NSF staff so they could clarify the issue. The impact of this work is not limited to the entities that are audited: NSF recipients carefully monitor the results of these audits to identify situations where they need to strengthen their own policies and procedures. OA typically uses independent public accounting firms to conduct these audits. At the FY 2022 Budget Request level, OA will be able to fund 6 to 7 of these audits. OA will also conduct two desk review audits at small to medium sized institutions and continue to monitor the quality of Single Audits.

Investigative Impact and Strategic Focus

OIG's Office of Investigations (OI) conducts investigations of criminal, civil, and administrative wrongdoing related to NSF programs and operations, including all entities and individuals that receive NSF funds, as well as whistleblower reprisal investigations. OI also evaluates and investigates allegations of research misconduct such as data fabrication, data falsification, and plagiarism related to NSF-funded research. OI's vigilance ensures that those who seek or receive NSF funds to conduct research are held accountable and serves as a meaningful deterrent to grant fraud and research misconduct.

OI opens investigations based upon consideration of OIG's strategic goals, NSF Management Challenges, the seriousness and magnitude of the offense, the significance of programmatic vulnerability, and the high-risk status of the program or institution. From FY 2017 through FY 2020, OI's investigative oversight of NSF's approximately \$32.0 billion award portfolio included 575 investigations spanning 48 states and the District of Columbia, as well as Puerto Rico, Canada, and Antarctica. OIG investigations—civil, criminal, and administrative—led to financial recoveries and savings to the federal government of nearly \$31.7 million during this period. Investigators also helped protect NSF research funds through 43 debarments of individuals and entities, 14 voluntary exclusions of individuals, 15 award suspensions, and 16 award terminations. More than 40 individuals were required to take remedial training, provide certifications and assurances in communications with NSF, and prohibited from serving as an NSF reviewer, advisor, or consultant. Investigative staff also worked with NSF to remedy numerous administrative practices and procedures that insufficiently protected the integrity of NSF funding processes.

Talent Plan Investigations

Recent congressional hearings have focused on the theft of U.S. federally funded research and development by foreign states who use talent plans to exploit the openness of American universities and the federal research enterprises. In FY 2018, OI initiated its first criminal investigations focused on potential misuse of NSF funding by members of foreign "talent plans." The volume and complexity of such investigations has increased throughout FYs 2019 and 2020, and now accounts for nearly half of OI's workload. Although China is not the only foreign government exploiting the openness of American universities, many of our investigations concern Chinese talent plans. OI has confronted this national security threat in several ways. For instance, in FY 2019, OI hired an analyst to perform immediate, onsite translation of Chinese documents. Within one month the analyst saved OIG more than her annual salary in translation costs. Further, her knowledge of the cases and ability to quickly bring matters to the attention of the investigators saved months of investigative time and greatly increased investigation efficiency. OI's investigative work on these cases has resulted in award suspensions and terminations, the recovery of NSF funds, and many

referrals to the U.S. Attorney's Office for prosecution.

In addition to conducting foreign talent plan investigations, OI:

- Founded and now serves as co-leader of a Council of the Inspectors General on Integrity and Efficiency (CIGIE) Working Group, which informs and assists investigative colleagues with threat identification, case predication, and best practices in conducting talent plan investigations.
- Collaborates with the FBI and other investigative partners to conduct outreach to internal and external stakeholders (e.g., grantees, institutions) to explain the risks posed by talent plan membership; and
- Conducts outreach and provides education to NSF, which has resulted in the issuance of new or amended agency advisories and policies to address the threat, including prohibition of talent plan members serving as employees or Intergovernmental Personal Act (IPA) rotators, requiring IPA rotators to be U.S. citizens, and increasing disclosure requirements for researchers seeking NSF funding.
- Supports the operation of a Sensitive Compartmented Information Facility (SCIF) at NSF, which enhances the efficiency and effectiveness of foreign talent plan investigations by facilitating essential communication and coordination with investigative partners across the government.

SBIR/STTR Investigations

Since 2010, OI has conducted more than 150 investigations related to the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs, which remain among the most at-risk programs funded by NSF. With NSF's total active SBIR/STTR awards now approximately \$560.0 million, protecting SBIR/STTR funds from fraud and abuse has become even more important. OI has successfully partnered with NSF program managers to improve SBIR/STTR processes and procedures to reduce the opportunity for fraud to occur. OI also conducts SBIR/STTR-related outreach at NSF awardee workshops, which provides guidance to the small business community on how to properly handle federal funds and the consequences of not following the rules. OI's efforts have produced significant programmatic improvements and enhanced understanding throughout the research community. In addition, OI has led an OIG community working group focused on fraud in these programs to share best practices and lessons learned.

Support Offices' Actions and Impacts

Office of Management

OIG's centralized Office of Management (OM) provides support services for the entire office. This includes essential functions such as budget and finance, procurement, human resources, and training, as well as strategic planning and general administrative support. OM develops streamlined processes and uses cutting-edge tools to increase the efficiency and effectiveness of its operations. In addition, OM:

- Manages investigative intake. All Hotline complaints are handled by an intake coordinator, who annually processes more than 300 complaints and presents them to OI management.
- Provides forensic accounting and data analytics support. An in-house forensic accountant skilled in data analytics helps manage the large amounts of information that investigators receive through subpoenas and other means. The application of data analytics to vital functions such as procurement oversight and budget execution yields further management efficiencies and cost savings.
- Provides IT services, including website and SharePoint site enhancements, digital forensics, and data security, as well as ongoing support of OIG-specific hardware and software applications and databases. Digital forensics has become much more critical in investigations, as most of the evidence being captured is electronic.

Office of Counsel

The Office of Counsel (OC) consists of the Counsel to the IG and two assistant counsels, one of which is

part-time. It provides comprehensive legal advice and critical analysis to the IG and all OIG divisions, including legal review of externally issued OIG work products and correspondence. OC handles myriad subject areas, including audit-related support, ethics, appropriations law, acquisitions, information disclosure, privacy, personnel, and IG Act authorities. OC also supports the larger IG community through active participation in CIGIE projects and committees. On average, OC handles more than 150 actions per year, including routine reviews of reports, contracting matters, and other externally focused documents; Freedom of Information requests; and legal opinions on various matters. OC attorneys also participate in key meetings and decisions, conduct training, and publish legal updates. This level of routine involvement enables the office to identify and address potential legal issues and risk areas before they mature.

Immediate Office

The Inspector General’s immediate office includes the Chief of Staff and Executive Assistant. The Chief of Staff handles all matters relating to external affairs, including congressional relations and media contacts.

Government-wide Impact

Though small relative to many other OIGs, NSF OIG continues to make significant contributions to the Inspector General community and the government at large. For example:

- NSF’s Inspector General served as the vice chair of CIGIE since 2014, and since January 2021 serves as the chair.
- NSF OIG has conducted outreach to the federal IG community, provided training to other investigative agencies, and taken the lead to establish and run four IG community working groups to:
 1. Prevent fraud within the SBIR/STTR programs.
 2. Increase the use of government-wide suspension and debarment as tools to deter and reduce instances of fraud, waste, and abuse.
 3. Foster the next generation of senior investigative leaders within the IG community; and
 4. Address emerging threats to U.S. national security through efforts by foreign governments to illegally obtain intellectual property and other research.

Financial Discussion

Office of Inspector General
Personnel Compensation and Benefits and General Operating Expenses
 (Dollars in Thousands)

| | FY 2020 Actual | FY 2021 Enacted | FY 2022 Request | Change over | |
|---|-------------------|--------------------|--------------------|----------------------------|--------------|
| | | | | FY 2021 Estimate Amount | Percent |
| Personnel Compensation & Benefits ¹ | \$13,319 | \$14,810 | \$16,844 | \$2,034 | 13.7% |
| Travel & Transportation of Persons | 85 | 225 | 230 | 5 | 2.2% |
| Advisory & Assistance Services ² | 2,304 | 2,185 | 2,411 | 226 | 10.3% |
| Rent | 105 | 120 | 126 | 6 | 5.0% |
| Information Technology | 182 | 150 | 200 | 50 | 33.3% |
| Communications, Supplies, Equipment, and Other Services | 310 | 360 | 609 | 249 | 69.2% |
| <i>Training</i> | <i>195</i> | <i>140</i> | <i>232</i> | <i>92</i> | <i>65.7%</i> |
| <i>Other</i> ³ | <i>71</i> | <i>161</i> | <i>304</i> | <i>143</i> | <i>88.8%</i> |
| <i>CIGIE Assessment</i> | <i>44</i> | <i>59</i> | <i>73</i> | <i>14</i> | <i>23.7%</i> |
| Total | \$16,305 | \$17,850 | \$20,420 | \$2,570 | 14.4% |
| Full-Time Equivalents | 68 | 71 | 79 | 8 | 11.3% |

¹ FY 2022 includes expected within grade increases, COLA and increased performance awards.

² Includes the costs of the annual financial statements audit and the outsourcing of contracting services.

³ For FY 2022, includes the cost for Sensitive Compartmented Information Facility (SCIF).

An increase of 14.4 percent from the FY 2021 Enacted level will help OIG achieve vital audit and investigative priorities. Funding at this level would support a total of eight additional FTEs.

Five FTEs to respond to challenges posed by members of foreign talent plans who receive NSF funding:

- Two criminal investigators and one investigative attorney to address the sharp increase in investigations related to foreign talent plans. Such cases make up almost 50 percent of the investigative portfolio in FY 2020, despite the fact that we implemented more stringent case-opening criteria. The number of requests for assistance from the FBI and other investigative agencies has also increased from 3 in FY 2017 to 51 in FY 2020—an increase driven entirely by foreign talent plan cases. As the Department of Justice’s China Initiative continues, we expect this number to increase. The additional staff will help us meet this growing demand and reduce per-agent caseloads to a level more consistent with the community norm.
- Two auditors to conduct pro-active audits focusing on controls which can prevent talent plan members from engaging in fraudulent or other criminal activity. This strategy will require continual auditing to identify and respond to the evolving approaches used by our adversaries.

In addition, OIG is seeking three FTEs to expand coverage in several areas:

- One certified information systems auditor to enhance OIG’s ability to respond to the complexities of ever-evolving IT systems and the risks posed by increasing reliance on those systems to provide accurate and timely information to decision makers. This need will increase in FY 2022 and beyond as NSF implements the major Antarctic Infrastructure Modernization for Science (AIMS) project, which includes significant changes to the USAP IT network.
- One investigative scientist to investigate allegations of research misconduct and whistleblower retaliation claims, and to conduct proactive reviews to identify more serious issues for investigation. We expect that the number of Whistleblower retaliation cases, which must meet extremely tight statutorily mandated timeframes, will sharply increase in FY 2022 due to pandemic-related cutbacks at NSF recipients.
- One IT specialist to address the increasing number and complexity of IT applications being used by OIG staff, particularly those related to digital forensics. Most evidence being seized from search warrants is digital and requires specialized skills and a greater commitment of IT resources. Digital forensics allows us to collect and transform data into useful information, to analyze that data in a way that is admissible in court, and to consume more data, more efficiently.

Inspector General Reform Act Statement

Section 6(g)(1) of the IG Act, 5 U.S.C. app. 3, was amended by the Inspector General Reform Act of 2008 (Pub. L. 110-409) to require a summary statement concerning OIG’s annual budget request.

In accordance with this, we submit the following summary:

- NSF OIG’s FY 2022 Budget Request is \$20.42 million.
- The portion for training is \$232,000.
- The portion for operation of the CIGIE is \$73,000.¹

The portion of the FY 2022 Budget Request for staff training is expected to suffice for all training needs in FY 2022. Because CIGIE’s annual assessment is based on a percentage of each OIG’s appropriation, the portion indicated for this purpose in the Budget Request will suffice.

¹ This is an estimate of CIGIE’s annual membership assessment, which is tied to each member OIG’s annual appropriation.

