

OFFICE OF INSPECTOR GENERAL (OIG)**\$17,850,000**
+\$2,574,000 / 16.8%

The Appropriations Act that funds the National Science Foundation contains a separate appropriation for NSF's Office of Inspector General. Accordingly, this FY 2021 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 2021 Budget Request for OIG is \$17.85 million, an increase of \$2.57 million over the FY 2019 Actual of \$15.28 million.

OIG Funding					
(Dollars in Millions)					
	FY 2019	FY 2020	FY 2021	Change over	
	Actual	Enacted	Request	FY 2019 Actual	Amount Percent
Total	\$15.28	\$16.50	\$17.85	\$2.57	16.8%
Full-Time Equivalents (FTEs)	71	71	71	-	N/A

Appropriations Language

For necessary expenses of the Office of Inspector General as authorized by the Inspector General Act of 1978, ~~\$16,500,000~~, \$17,850,000, of which \$400,000 shall remain available until September 30, ~~2021~~ 2022.

Office of Inspector General					
FY 2021 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 2019 Appropriation	\$15.35	\$0.40	-\$0.40	-\$0.07	\$15.28
FY 2020 Enacted	16.50	0.40			16.90
FY 2021 Request	17.85				17.85
\$ Change from FY 2020 Enacted					\$0.95
% Change from FY 2020 Enacted					5.6%

Explanation of Carryover

Within the Office of Inspector General (OIG) two-year account, \$400,000 was carried over into FY 2020.

Office of the Inspector General

- Amount: \$400,000
- Purpose: Funds are expected to be used to procure financial and forensic 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 2020 Quarter 4

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 2019 appropriation was just 0.19 percent of NSF's \$8.0 billion appropriation and 0.05 percent of NSF's \$33.50 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 office's operational impact and strategic focus by functional area follow.

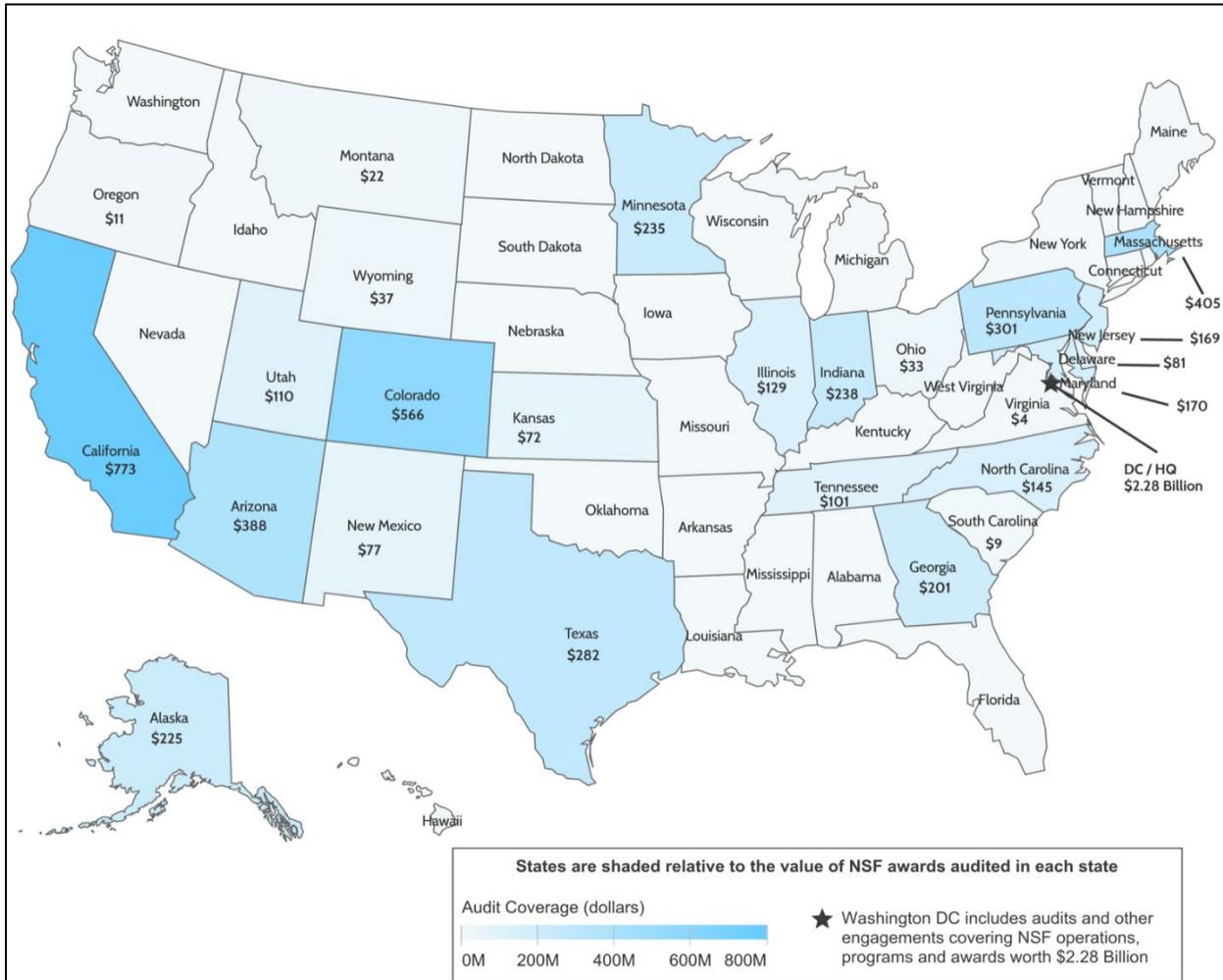
Audit Impact and Strategic Focus

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.

In FYs 2017 through 2019, OIG audited approximately \$7.07 billion in NSF funding in 26 states and Washington, D.C.—resulting in 72 audit and other engagement reports containing a total of \$10.0 million in questioned costs and 484 recommendations to recover misspent funds and improve awardee and NSF operations. Figure 1 shows the value of the awards audited in each state.

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. Also, in response to recent audits, NSF strengthened controls over mobile devices, records management, and its large-scale, multi-user research facilities. These improvements increased the effectiveness and efficiency of NSF programs and made NSF a better steward of federal funds.

Figure 1. Audit Coverage October 1, 2016-September 30, 2019



Areas of Risk for Potential Audit Coverage in FY 2021

Many of the audits OIG performs are required by statutes (the annual financial statement and FISMA audits, audits required by the DATA Act and the Improper Payments Elimination and Reduction Act (IPERA), and a triennial review of the National Science Board’s compliance with Sunshine Act requirements). OIG utilizes a risk-based approach to identify additional issues that would benefit from audits performed by in-house auditors. While additional areas may emerge by FY 2021, OA has currently identified four such high-risk areas:

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 construction is complete, 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. With rising costs of operations, NSF needs to ensure it plans for the full lifecycle of the facility including its divestment. The objective of this audit is to determine if NSF identifies, plans for, and manages essential divestment opportunities for major facility projects.

Antarctic Infrastructure Modernization for Science

AIMS is one of NSF's most challenging major facility initiatives. According to NSF, the AIMS project will ensure that McMurdo Station remains a viable platform for supporting Antarctic science for the next 35 to 50 years. OA is increasing its monitoring and oversight efforts of the design, construction, and ongoing capital investment and support of AIMS. These efforts will help ensure NSF is properly managing the project and monitoring Leidos' compliance with contract terms.

Mid-scale Research Infrastructure

Mid-scale project means research instrumentation, equipment, and upgrades to major research facilities or other research infrastructure investments funded between \$6.0 million and \$100.0 million (i.e. exceeds the maximum amount that can be funded by the Major Research Instrumentation program but less than a major multi-user research facility project.) Mid-scale project oversight requirements are tailored to each project's unique characteristics such as the technical scope, the type and mix of work performed and an assessment of the associated technical and programmatic risks. This oversight model could cross multiple divisions and programs within NSF.

Regional Class Research Vessel

The RCRV project will help modernize the U.S. Academic Research Fleet through the construction of three new research vessels. The not-to-exceed total project costs is \$353.97 million over nine years. This project is high risk, which NSF acknowledges. Some of the risks include potential delays or additional costs due to factors such as misunderstanding of requirements and contracting issues. NSF has a time-phased descoping plan to minimize impacts in case contingency funds are not sufficient to cover additional costs.

The audit objectives for this area would be fully developed once we begin background and survey work. Our previous work with large projects has indicated a key risk area occurs during the transition from construction to operations. During this phase, the co-mingling of funds intended for operations with funds intended to complete construction (or vice versa) present the highest risk. Additional areas of risk with any large construction project is the inappropriate use of contingency funds, or risk associated with the technical failures of the product. Our audits are designed in a way that allows us to evaluate all risks and choose the best approach after the survey phase.

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 can also identify evidence of behavior that could violate criminal or civil laws (which would be referred to OIG's Office of Investigations) or of inconsistent treatment of similar charges across the academic community (which can be shared with NSF staff, so they can 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 Budget Request level, OA will be able to fund 4-5

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. Since FY 2009, OIG investigations—civil, criminal, and administrative—have led to financial recoveries and savings to the federal government of more than \$87.0 million, including almost \$64.0 million in funds returned to NSF. 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 high-risk status of the program or institution. As illustrated in Figure 2, for FYs 2017 through 2019, OI's investigative oversight of NSF's \$33.50 billion award portfolio included 492 investigations spanning 49 states, as well as Washington DC, Puerto Rico, and Antarctica.

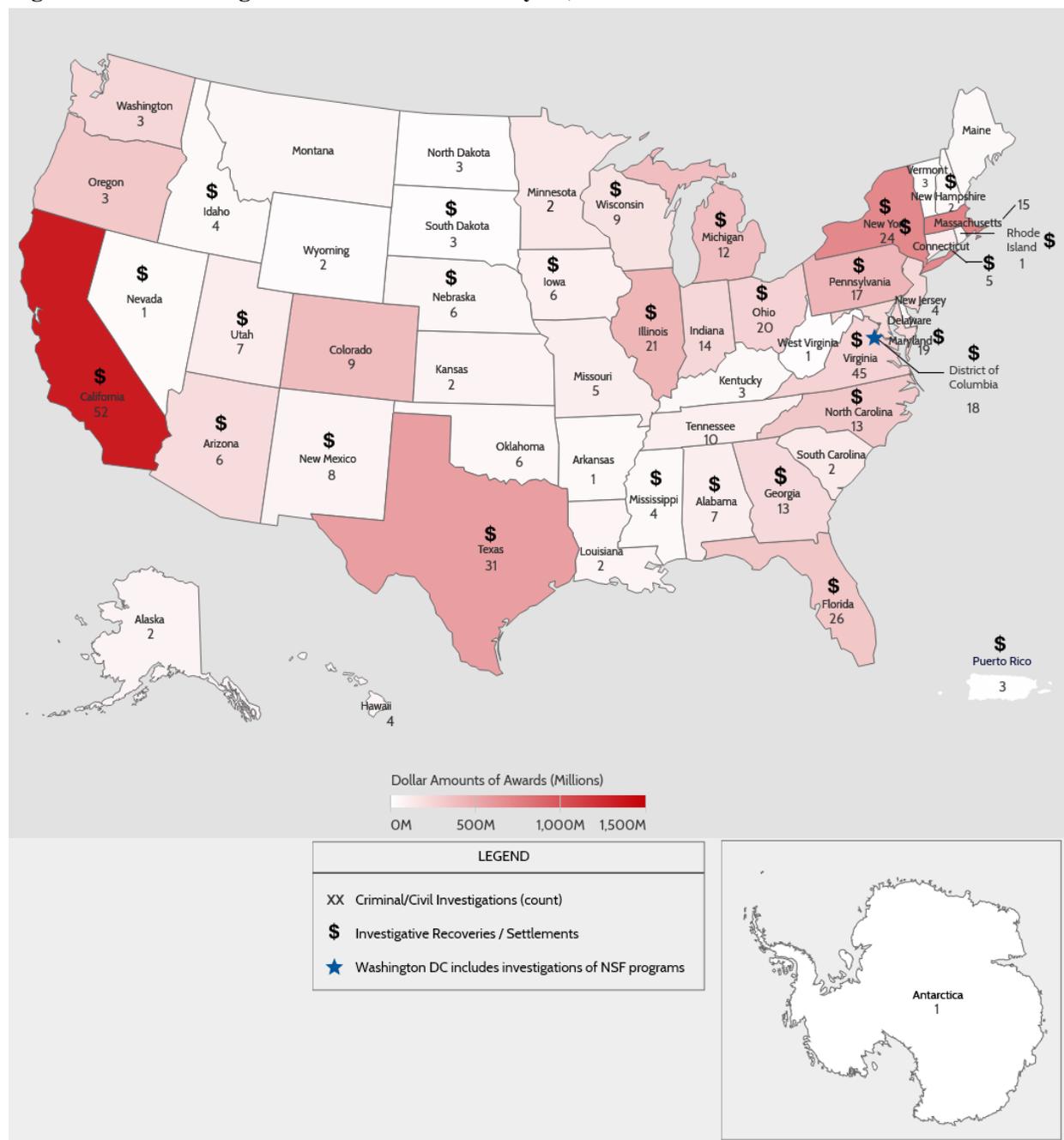
Talent Plan Investigations

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 FY 2019, now amounting to a more than 20 percent increase in OI's workload. OI has confronted this national security threat in a number of ways. For instance, in FY 2019, OI hired an analyst with appropriate language qualifications on a term appointment to perform immediate, onsite translation of Chinese documents. While China is not the only foreign government exploiting the openness of American universities, many of our investigations concern Chinese talent plans. 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 increased investigation efficiency by an order of magnitude. In FY 2020, this position will be made permanent to allow OIG to cost effectively translate the large volume of documents in Mandarin Chinese generated by talent plan related investigations. In addition to the investigations it is working in this area, OI:

- Founded and now serves as co-leader of a Council of the Inspectors General on Integrity and Efficiency (CIGIE) Working Group designed to inform and assist investigative colleagues with the identification of the threat, predication of cases, and best practices in conducting such 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 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.

OI's investigative work on these cases has resulted in award suspensions and terminations, recovering NSF funds for better use, as well as referrals to the U.S. Attorney's Office.

Figure 2. OIG Investigations October 2016 – July 30, 2019



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 annual SBIR/STTR award expenditures now approaching \$200.0 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, providing 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 IT services 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. Specific responsibilities in OM include:

- Budget and administration—responsible for all budgetary, financial, and administrative business conducted by the office and works with NSF to provide human resources and procurement support.
- Training—training is scheduled/tracked to ensure staff take all mission-critical and required training.
- Investigative intake operation—all complaints are handled by an Intake Coordinator, who processes nearly 300 allegations annually. The external OIG Hotline website has been revamped to quickly identify substantive allegations, which the Intake Coordinator presents to Investigations management.
- Forensic accounting and data analytics—an inhouse forensic accountant skilled in data analytics helps manage the large amounts of information that investigators receive through subpoenas and other means. The forensic accountant reduces the need for investigative contract services by over 50 percent, saving \$100,000 per year. The application of data analytics to vital functions such as procurement oversight yields further management efficiencies and cost savings.
- IT services—includes website maintenance and posting of reports, digital forensics, and data security as well as ongoing support of OIG-specific 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 certain 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, primarily congressional relations, and public/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 has served as the vice chair of CIGIE since 2014, which includes:

1. Chairing CIGIE’s IG Candidate Panel to help the White House identify strong candidates for vacant Presidentially Appointed Senate-confirmed IG positions;
 2. Representing the IG community in a Five-Eyes effort focused on counter-fraud begun by the British government; and
 3. Leading CIGIE’s Grant Reform Working Group, which provides valuable feedback and insights to OMB staff as they consider grant-related changes.
- 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 2019 Actual	FY 2020 Enacted	FY 2021 Request	Change over FY 2019 Actual	
				Amount	Percent
Personnel Compensation & Benefits ¹	\$13,114	\$13,935	\$14,810	\$1,696	12.9%
Travel & Transportation of Persons	211	210	275	64	30.3%
Advisory & Assistance Services ²	1,480	1,801	2,185	705	47.6%
Rent	104	110	120	16	15.4%
Information Technology	104	100	100	-4	-3.8%
Communications, Supplies, Equipment and Other Services	263	344	360	97	36.9%
<i>Training</i>	123	140	140	17	13.8%
<i>Other</i>	100	150	161	61	61.0%
<i>CIGIE Assessment</i>	40	54	59	19	47.5%
Total	\$15,276	\$16,500	\$17,850	\$2,574	16.8%
Full-Time Equivalents	71	71	71	-	N/A

¹ FY 2021 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.

With an FY 2021 appropriation of \$17.85 million, OIG will be able to maintain existing staff at 71 FTEs and continue operations as described above, including continuing its current efforts to address challenges posed by foreign talent plans. Over the past 5 years, the average cost per FTE increased by approximately 20 percent due to cost of living and benefit increases. OIG will also increase its performance awards to non-SES employees by 1 percent in FY 2021.

Funding at the requested level would also provide sufficient travel funds for OIG audit and investigative staff. We anticipate that those costs will increase by about 20 percent over current levels by FY 2021 due to several factors, including travel to the Antarctic for oversight work associated with the McMurdo modernization, as well as the expanding landscape of OIG investigations, as previously described.

OIG anticipates increased costs for the contract used to conduct the financial statement, FISMA and DATA Act audits, which is being recompeted in FY 2020. Funding at the requested level will be sufficient to cover that cost and to procure several discretionary audits of NSF recipients. Finally, funding at the requested

level will enable OIG to replace IT equipment that is near the end of its useful life and invest in data analytics and computer forensics software to augment audits and investigations.

For these reasons, the Budget requests an increase of \$2.57 million in FY 2021.

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 2021 Budget Request is \$17.85 million.
- The portion for training is \$140,000.
- The portion for operation of the CIGIE is \$59,000.¹

The portion of the Budget Request for staff training is expected to suffice for all training needs in FY 2021. Because CIGIE's annual assessment is based on a percentage of each OIG's appropriation, the portion indicated for this purpose at the Budget Request level will suffice.

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

