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NATIONAL SCIENCE FOUNDATION

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Mr. Chairman and Members of the Subcommittee, I appreciate this opportunity to discuss the Office of Inspector General's (OIG) work to promote the efficiency and effectiveness of the National Science Foundation's (NSF) programs and operations and to safeguard their integrity. My office is committed to providing rigorous, independent oversight of NSF, and I welcome the chance to discuss my office's work.

Background

NSF is the funding source for approximately 20 percent of all federally supported basic research in science and engineering conducted by the nation's colleges and universities. In many areas, such as mathematics and computer science, NSF is the major source of federal backing. The Foundation funds approximately 10,000 new awards each year, thereby fulfilling its mission to promote the progress of science. Proposals for funding are assessed by panels of experts as part of NSF's merit review process. Awards are made primarily as grants, with some large cooperative agreements and contracts, and go to individuals and small groups of investigators, as well as to research centers and facilities where scientists, engineers, and students undertake research projects. The Foundation also funds major research equipment such as telescopes, Antarctic research sites, and high-end computer facilities.

The OIG is an independent entity and reports directly to Congress and the National Science Board. Our mission is to conduct independent audits and investigations of National Science Foundation programs and operations and to recommend policies and corrective actions to promote effectiveness and efficiency and prevent and detect waste, fraud, and abuse. Consistent with our statutory mandate, the OIG has an oversight role and does not determine policy or engage in management activities involving the Foundation or program operations. Thus, my office is not responsible for managing any NSF programs, nor do we attempt to assess the scientific merit of research funded by the Foundation.

The OIG has two main components: the Office of Audit and the Office of Investigations. The Office of Audit is responsible for the annual audits of NSF's financial statements and the annual review of information system security. The office also conducts financial and compliance audits of grants, contracts, and cooperative agreements funded by NSF. Further, we monitor management functions that may pose significant financial or programmatic risks. In determining

priorities, we consider the results of prior audits and consult with the Foundation's senior management, the National Science Board and Congress, and with the Office of Management and Budget and members of the research community supported by the Foundation. In selecting areas for audit, we assess factors such as the risk involved in the activity, the potential for monetary recovery for the government, and the potential for the greatest substantive benefit for NSF.

The Office of Investigations is responsible for investigating possible wrongdoing involving NSF programs and operations, agency personnel, and organizations or individuals who submit proposals to, receive awards from, or conduct business with NSF. We focus our investigative resources on the most serious cases, as measured by such factors as the amount of money involved, the seriousness of the alleged criminal, civil or ethical violations, and the strength of the evidence. When appropriate, the results of these investigations are referred to the Department of Justice for possible criminal prosecution or civil litigation, or to NSF for administrative resolution.

Oversight Issues

Since the agency's primary mission activity is accomplished through funding external awardees, the success of NSF's overall mission and the achievement of its goals are largely dependent on effective grant and contract administration. OIG has an important oversight role, but given the breadth of our mission, we can only review a small number of awards each year. We are currently developing a data analytic capacity and improved forensic financial skills that should enable us to better identify awards with the most risk and thus more effectively leverage our limited staff resources.

I will begin my testimony by discussing the OIG's oversight of NSF's grant and contract management with a focus on the special risks related to contingency funding in NSF's large facility projects.

Grants Management: Our audits of NSF's operations have found that NSF needs to continue to improve its grant management activities, including the oversight of awardees' financial accountability, programmatic performance, and compliance with applicable federal and NSF requirements. NSF has indicated that staffing constraints caused it to reduce the number of site visits to monitor high-risk awardees. In both FY 2010 and FY 2011, six planned site visits were cancelled. NSF had planned to conduct 30 site visits in FY 2010 and 32 in FY 2011.

NSF also stated that its increased workload has impacted its ability to resolve audit recommendations in a timely fashion. For example, the number of audit reports with questioned costs that were not resolved within six months grew from zero in FY 2003 to 26 in FY 2010. Resolving questioned costs swiftly is an important component of grants management so that funds can be returned to the federal government and also so that financial management deficiencies can be addressed before additional funds are placed at risk.

As budget constraints continue and accountability expectations increase, NSF has been working to develop alternative ways to oversee awardees. For example, the agency recently conducted virtual site visit pilots as part of its advanced monitoring program. NSF also responded

positively to our recent recommendation to use workforce planning exercises to seek alternative and more streamlined ways to provide oversight within its current staffing limits.

In addition, ensuring that recipient institutions adequately monitor sub-awardees has been a continuing challenge for NSF, which has been cited in the financial statement audits as well as in our audit work. Awardees that pass federal funds through to sub-awardees must monitor these sub-awardees to ensure that their financial systems are adequate to manage the federal money they receive. For example, a recent audit of five awards totaling over $5 million identified inadequate sub-recipient monitoring as a significant deficiency contributing to over $450,000 in questioned costs.

Contract Monitoring: Adequate monitoring of cost reimbursement contracts remains a significant challenge for NSF, and we have directed attention to this issue. In particular, we have focused on the agency's ability to manage cost reimbursement contracts. Monitoring of such contracts, in FY 2009 and FY 2010, was identified as a significant deficiency in the agency's financial statement audits. While the finding fell to a management letter comment in the 2011 audit, challenges remain.

For example, while NSF's response to address the significant deficiency cited in its FYs 2009 and 2010 financial statements audits stated that it would obtain cost incurred submissions from its largest contractors within six months of the end of the fiscal year, it obtained the submissions late for one its three largest contractors and did not obtain any submission from another contractor. Obtaining incurred cost submissions and reviewing the costs, including when warranted, having timely incurred cost audits performed is vital to ensuring that costs paid are proper. Because NSF has a decided to maintain its portfolio of cost reimbursement contracts, this type of oversight takes on renewed importance to protect taxpayer funds.

Contingencies: An area of ongoing concern has been NSF's oversight of the construction of the large facility projects it funds. In recent years, NSF has instituted a policy of ensuring these projects do not exceed their planned budgets by requiring a level of "contingency" costs in the initial budget. Project management, especially for projects of this scale and complexity, requires a higher level of planning and risk management. Proposal budgets create a basis upon which awardees can draw down funds over the course of the award for specific cost items. The budget is a tool for managing the progress of the project. In addition, federal cost principles define how award funds may be budgeted and spent.

On our behalf, the Defense Contract Audit Agency (DCAA) performed audits of the proposed budgets of three of NSF's large facility construction projects – the Ocean Observatories Initiative (OOI), the Advanced Technology Solar Telescope (ATST), and the National Ecological Observatory Network (NEON). In each instance, the audit work revealed significant problems with the proposed budgets because the applicable OMB cost principles do not allow "[c]ontributions to a contingency reserve or any similar provision made for events the occurrence of which *cannot be foretold with certainty* as to time, intensity, or with an assurance of their happening."

More specifically, in September 2010, DCAA found that the proposed $386 million budget in OOI contained a total of $88 million (23%) in unallowable contingency funds. DCAA based this finding on a lack evidence to support that the amounts budgeted were for events that could be

"foretold with certainty as to time, intensity, or an assurance of their happening," as OMB requires. Subsequently, we requested that DCAA conduct follow-up work to look more deeply into how the contingency costs were estimated. Following the initial OOI audit, DCAA auditors worked with OOI in a further effort to identify verifiable data to support the contingencies. This additional work failed to surface evidence to support the contingency amounts, confirming the original finding that the $88 million proposed is unallowable.

Likewise, in March 2010, DCAA auditors found that the $298 million cost proposal for ATST contained $62 million (21%) in unallowable contingencies. Most recently, DCAA has identified $74 million (17%) in unallowable contingency costs budgeted out of the $434 million unauditable cost proposal for the NEON project.

In its work, DCAA has also noted, that there are a lack of controls over the contingency funds. Awardees can draw down these funds at any time, just as they can normal funds. While awardees are supposed to seek NSF approval before drawing down contingency funds in excess of a certain threshold, DCAA found that there are no effective technical barriers to prevent them from being drawn down in advance and used for purposes other than materialization of a contingent event. Accordingly, there is a heightened risk of fraud or misuse of these funds.

We recognize that identifying funds needed for uncertainties that arise during the conduct of complex projects is an important part of project management; however, we remain concerned by the risks associated with NSF's approach of awarding all contingency funds to awardees, without regard to whether they are consistent with the cost principle and supported by verifiable data. Simply stated, placing unallowable contingency funds into awardees' hands is not prudent financial management. Therefore, we have recommended that NSF require the awardees to remove unallowable contingencies from their proposed budgets and that NSF discontinue its practice of awarding and funding such contingencies. NSF, not the awardees, should hold the portion of the funds budgeted for unforeseen events that cannot be supported by adequate cost data and only release those funds if and when the awardee has demonstrated – through verifiable cost data – that the funds are needed.

We are currently working with NSF to resolve both these contingency-related findings, and in the case of the NEON and ATST proposals, findings that rendered the entire proposals unauditable. Because of the large dollar amounts associated with contingencies in NSF awards, the risk we see posed by the agency's current process of funding these costs, and the complexity of the issue, we have also started additional audit work that focuses broadly on NSF's management and use of contingencies in its awards. Among other things, we are beginning work to examine the use of Recovery Act funds for contingencies in the construction of the Alaska Region Research Vessel in light of these findings.

Stimulus Spending: Like all OIGs of agencies that received ARRA funding, our office has been involved for several years now in the oversight of NSF's stimulus spending. One of the special risks our office will be paying attention to as we continue to conduct audits of ARRA awards relates to the impact of the acceleration of ARRA expenditures. Last fall, OMB issued a Memorandum (M-11-34) to the heads of federal departments and agencies urging them to spend remaining ARRA funds quickly and efficiently. Federal agencies were instructed to recapture funds not spent by September 30, 2013, to the greatest extent permitted by law. After receiving

this memorandum, NSF reviewed its ARRA portfolio and found over 600 awards with expiration dates after September 30, 2013. NSF has indicated that its ARRA awardees should look for opportunities to accelerate their award spending where this can be done "responsibly within the terms and conditions of their awards." In addition, NSF is identifying candidates for which they will seek waivers from OMB so that spending can continue in some cases into 2015, in order for the original projects to be completed.

Accelerated spending of these "stimulus" funds has always been a goal of ARRA. Moving funds quickly into the economy, rather than allowing them to languish within the treasury, is a key component of economic recovery. However, the nature of scientific discovery, unlike manufacturing or infrastructure maintenance, is difficult to accelerate, and the need to increase spending may prove challenging. Our continuing audits will examine ARRA award expenditures, including ones that may have been accelerated, to ensure that they are allowable and used for the purposes of the intended award and that the pressure to spend available funds has not led to improper decision making.

Oversight of NSF Internal Operations

While much of our work focuses on funds NSF provides to third parties in grants, cooperative agreements, and contracts, we also examine how NSF spends money internally for its own operations and activities. In light of the current economic climate, it is essential that these expenses are reviewed to identify opportunities for cost savings, funds to be put to better use, or more efficient purchasing practices.

Our reviews of NSF's expenditures for such things as wireless plans and devices and refreshments for panelists demonstrated the impact of NSF's decentralized approach to these purchases. In each instance, there was no Foundation-wide coordination of the purchase of similar items and practices varied across the individual directorates and divisions. While we cannot identify the precise financial impact, our reviews have recommended actions that should result in more efficient purchasing practices and potential cost savings.

Wireless Plans and Devices: Our review of wireless device and service purchases made by NSF offices identified nearly $530,000 in such purchases in FY 2009 and more than $660,000 in FY 2010. NSF owns more than 700 wireless devices, including smart phones and tablets, for approximately 1,500 staff.

NSF's ad hoc, decentralized process for purchasing wireless assets and services has resulted in a myriad of devices and plans across the Foundation, and frequently even within individual offices. NSF does not have a policy for the procurement and use of wireless devices and services, nor does it have any policy regarding which NSF staff *need* wireless devices or which devices are appropriate for their needs. Further, individual offices within the agency generally purchase devices and plans on an item-by-item basis. Because the purchases were small and not made centrally, NSF had not taken advantage of economies of scale or government-wide purchasing programs in an effort to lessen costs.

In response to our recommendations, NSF has taken several actions including implementing an agency-wide policy on the purchase and use of wireless devices and providing for centralized procurement of wireless devices and plans in order to receive the benefit of economies of scale.

NSF Light Refreshment Purchases: Our review of charges on NSF purchase cards for refreshments for merit review panelists and others attending meetings at NSF identified nearly $500,000 in food-related payments in both 2008 and 2009. NSF pays for these refreshments out of program funds, in addition to the flat-rate or per diem compensation it provides to attendees to cover all of their expenses including meals. The flat rate compensation is $480 for each meeting day and $280 for each travel day to cover an honorarium, hotel, local travel, and all meals. The per diem rate includes $71 for meals and incidentals, in addition to lodging and travel expenses.

We found there was no Foundation-level oversight or coordination of refreshment purchases and no uniform guidance to ensure consistent decision making within and across NSF divisions. As a result, refreshment purchase practices varied widely across NSF. We recommended that NSF assess whether it is a prudent use of federal funds to spend nearly a half-million dollars a year to provide extensive mid-morning and mid-afternoon refreshments for meeting attendees. If NSF chooses to continue providing food, we recommended that the agency centralize its provision of refreshments to improve control over the process and ensure it is carried out reasonably, consistently, and responsibly.

In response to our recommendations, NSF has informed us that it plans to use a multiple vendor blanket purchase agreement for light refreshments which will enable the agency to leverage economies of scale and standardize menu options in order to lower costs.

Independent Research/Development Travel: A review by the Office of Investigations identified concerns about the use of Independent Research Development (IR/D) travel by temporary NSF program staff appointed under the Intergovernmental Personnel Act, Visiting Scientists, Engineers, and Educators and permanent staff. The issues raised included significant internal control concerns with respect to training, financial control, and oversight involving the IR/D program. In response to our review, NSF created a task force to strengthen oversight and accountability in the program and has begun implementing some of the task force recommendations. We built upon our initial work in this area by conducting an audit to obtain a more in-depth look at the IR/D program.

Our audit found that NSF did not have sufficient management controls to monitor the IR/D program, which involved travel costs during 2010 of $1.8 million for 314 participants. For example, NSF management could not determine the program's total annual cost nor did it have the ability to prevent individual travelers from exceeding the 50-day limit for IR/D activities. Further, NSF had not identified IR/D program goals or quantified the program's outcomes. As a result, NSF did not have the performance measures necessary to evaluate the value of the program to the agency's mission.

In response to our recommendations, NSF has strengthened controls over the IR/D program in several ways, including requiring program participants to file an annual written report of their IR/D activities. NSF's corrective action plan to address our recommendations is due May 16.

Other NSF Workforce Management Issues: We have also examined other concerns about workforce management at NSF. For example, a recent audit recommended that NSF use staffing assessments to create more effective ways to conduct oversight of awardees with existing staff. As mentioned earlier, NSF has indicated that it has reduced the number of site visits to monitor high-risk awardees as a result of insufficient staffing.

In addition, we conducted an audit on the personnel management challenges associated with NSF's use of temporary employees under the Intergovernmental Personnel Act (IPA). While we agree that IPAs and other temporary personnel bring fresh ideas to the Foundation, there are both financial and workforce management issues associated with NSF's reliance on IPAs. With regard to workforce issues, IPAs work side-by-side with career employees, but they remain employees of their home institution and are treated differently in several respects. For example, IPAs are not required to track and record their hours worked as federal employees are required to do and until recently IPAs' performance was not rated. Such disparities may undermine workforce morale. IPAs can also cost NSF more than career employees. Examples of additional costs associated with IPAs include: salaries that can exceed the maximum federal pay limits; the cost of the IPA's home institution's fringe benefit package, which NSF pays; and amounts NSF pays IPAs for lost consulting income (can be up to $10,000). We are planning to follow up on our 2004 audit of costs associated with the use of IPAs.

Finally, our 2011 audit of NSF's oversight of financial conflicts of interest found that NSF is not required to monitor or oversee institutions' implementation of their conflicts program nor are institutions required to notify NSF when they allow research to continue without conditions or restrictions on an identified conflict.

Investigative Matters

The Office of Investigations conducts civil/criminal, administrative, and research misconduct investigations. For the past three years, our investigative recoveries for fines, restitutions, and other actions have totaled $21.6 million. We investigate violations of federal civil and criminal statutes by applicants for and recipients of NSF funds, as well as NSF employees and contractors. When we find substantial evidence of wrongdoing, we refer cases to the Department of Justice for civil or criminal action and recommend administrative action by NSF in appropriate circumstances.

We also investigate allegations of research misconduct. Research misconduct damages the scientific enterprise, is a misuse of public funds, and undermines the trust of citizens in government-funded research. It is imperative to the integrity of research funded with taxpayer dollars that NSF-funded researchers carry out their projects with the highest ethical standards. For these reasons, pursuing allegations of research misconduct by NSF-funded researchers continues to be a focus of our investigative work.

In addition, in response to provisions in the America COMPETES Act of 2007, NSF has instituted efforts to improve ethics training at universities. NSF requires universities to have a plan to provide appropriate training and oversight in the responsible and ethical conduct of research to undergraduate students, graduate students, and postdoctoral researchers participating

in the proposed research project. Additionally, institutions must designate one or more persons to oversee compliance with the Responsible Conduct of Research training requirement. This training includes topics such as plagiarism and proper citation practices, data fabrication and falsification, and conflicts of interest. Although the universities do not have to provide a copy of the NSF required ethics training plan with their proposals, their plans are subject to review. We recently initiated a review of such plans with a goal of providing feedback to NSF on their strengths and weaknesses.

We are currently focusing significant investigative attention on fraud in the Small Business Innovation Research (SBIR) program. Since 2009, we have opened 70 investigations involving SBIR awards, and we currently have 40 active SBIR investigations, 15 of which are being coordinated with the Department of Justice for possible civil/criminal action. The cases involve companies receiving duplicate funding from more than one SBIR agency (11 agencies participate in the SBIR program), conversion of award funds to personal use, and/or false statements and claims related to SBIR program eligibility. Since 2009, our SBIR cases have resulted in over $1.2 million in restitution, funds returned to NSF, and funds put to better use. Based on our investigative findings, we have also made recommendations to help NSF reduce the risk of fraud by requesting additional information from awardees. NSF has implemented all of our recommendations.

Our office also leads an SBIR Working Group working under the Council of Inspectors General on Integrity and Efficiency (CIGIE), which is focused on combating fraud, waste, and abuse in this program. An important component of this effort is a working group of Special Agents from thirteen federal agencies, led by our office and the Department of Energy OIG, in which agents share information on ongoing cases, lessons learned, and best practices related to SBIR investigations.

Finally, pursuant to the National Defense Authorization Act for FY 2012 , which reauthorized the SBIR program, our office, on behalf of the CIGIE working group, has been working with SBA to develop program-wide SBIR anti-fraud certifications modeled on those long in use at NSF. These certifications help deter fraud in SBIR/STTR programs and improve the government's ability to prosecute such fraud when it does occur.

In other government-wide efforts, with the Federal Housing Finance Agency IG, I am leading a Suspension and Debarment Working Group which is focused on increasing knowledge and use of suspension and debarment to protect government funds against fraud, waste, abuse and noncompliance with contract provisions or applicable law.

Relationship between the Foundation and the OIG

Our office has been working to build a constructive relationship with the Foundation, and I am pleased with the progress we have made in that direction. In August 2009, three months after I became the Inspector General, then-director Dr. Arden Bement issued a memorandum to all NSF employees emphasizing his expectation that all NSF employees and offices would cooperate fully with the OIG. In one of his first actions as director, Dr. Suresh re-issued that memo in November 2010.

We have also worked with the Foundation to create a more productive audit resolution process. The process of resolving audit recommendations and following up to ensure that institutions implement corrective action is an important tool to address current issues and to prevent future problems at NSF-funded institutions. Therefore, a robust audit resolution and follow-up process is essential to ensure that institutions receiving funds from NSF take the appropriate corrective action to properly manage that funding. An NSF/OIG audit resolution working group meets regularly to make the audit resolution process more effective.

We also track management's responses to our management implication reports (like those on the purchase of wireless devices and plans and light refreshments) to ensure that it takes appropriate action to address the problems we identify. We have found that sustained attention from our office can result in an outcome that benefits all.

Conclusion

Our work reflects my office's sustained commitment to helping NSF be an effective steward of taxpayer dollars and benefits from the support of NSF management across the Foundation. We look forward to our continued partnership with NSF and the Congress to this end.

This concludes my statement. I would be happy to answer any questions.