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**NATIONAL SCIENCE FOUNDATION**

**Before a Hearing of the**

**House Committee on Science, Space, and Technology**

**Subcommittee on Oversight**

**Subcommittee on Research and Technology**

***Is NSF Properly Managing its Rotating Staff?***

**June 25, 2015**

Mr. Chairman and Members of the Subcommittee, I appreciate this opportunity to discuss the National Science Foundation (NSF) Office of Inspector General's (OIG) work addressing NSF's management of its rotating staff. My office is committed to providing rigorous, independent oversight of NSF, and I welcome the chance to discuss my office's work to promote economy and efficiency in NSF's programs and operations.

As requested, my testimony will address the OIG's oversight of NSF's management of its rotating staff, especially assignments under the Intergovernmental Personnel Act (IPA). I will focus on findings and recommendations made to NSF in three audits completed by my office in the past few years—one on costs associated with NSF's use of rotators, a second on personnel management issues related to NSF's use of rotators, and a third focused on NSF's management and oversight of the Independent Research/Development Program (IR/D), which rotators use to travel to their home institutions, attend conferences, and participate in other activities to help them remain actively involved in their research projects.

Finally, since rotators often serve as program officers who are responsible for making award funding decisions, I will discuss a recent management implication report my office issued, which identified opportunities for NSF to improve its controls to identify and mitigate rotators' conflicts of interest (COIs).

**Background**

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 National Science Foundation (NSF) is an independent federal agency whose mission is “to promote the progress of science; to advance the national health, prosperity, and welfare; and to secure the national defense.” To support this mission, NSF funds approximately 20 percent of all federally-supported basic research conducted at the nation’s colleges and universities, primarily through grants and cooperative agreements. In order to accomplish its mission, NSF seeks to maintain a world-class staff of scientists, engineers, and educators who bring current knowledge, insight, and cutting-edge perspectives to the scientific and engineering research and education funded by NSF.

NSF is divided into seven directorates that support science and engineering research and education. Each directorate is headed by an executive level Assistant Director and Deputy Assistant Director or equivalent. Assistant Directors are required to implement strategic plans, develop a highly qualified staff, and lead and motivate an organization.

Each directorate consists of a number of divisions, which are headed by a Division Director, who is supported, in most instances, by a Deputy Division Director or equivalent. A primary responsibility of Division Directors is to provide leadership and guidance to division scientific, technical, and administrative staff. Division Directors also determine funding requirements, prepare and justify budget estimates, balance program needs, allocate resources, oversee the evaluation of proposals, make recommendations for awards and declinations, and represent NSF to relevant external groups.

#### Intergovernmental Personnel Act Mobility Program

To advance the agency's mission of supporting science and engineering research and education, NSF supplements its permanent staff by bringing scientists, engineers, and educators on rotational assignments from academia, industry, or other eligible organizations to the agency. All of the individuals serving under non-permanent appointments are considered to be federal employees, except for employees serving under the Intergovernmental Personnel Act (IPA), who remain employees of their home institution.

The Intergovernmental Personnel Act of 1970 provides authority for the temporary assignment of skilled personnel to or from federal, state, local or tribal governments, or institutions of higher education and other eligible organizations without the loss of employee rights and benefits. It permits individuals to serve in a temporary capacity for a period of up to four years. IPA assignments are voluntary and require the agreement of the participating employee. NSF obtains most of its temporary scientists, engineers, and educators using the IPA Act. The Foundation believes using IPAs in its directorates and offices strengthens its ties with the research community and provides talent and resources that are critical to meeting NSF's mission.

Since IPAs remain employees of their home institutions, their home institutions continue to administer the IPAs’ pay and benefits. Accordingly, IPAs are not subject to federal pay and benefits limitations. It is important to note that NSF’s source of funding for IPAs is different from the appropriation that funds its employees. NSF reimburses the home institution for an IPA’s salary and benefits using grants funded through its program-related appropriations.

While there are benefits that come from having rotators at NSF, there are also challenges. For example, the Act permits individuals to serve in a temporary capacity for up to four years; as a result of this limited tenure, there is almost constant turnover in staff at NSF, especially in senior leadership positions. Other challenges include higher costs for rotators and rotators' lack of familiarity with federal government processes and the federal government culture.

#### Costs Associated with NSF's Use of Rotators

In August 2012, IPAs comprised approximately 12 percent of NSF's overall workforce, and occupied approximately 31 percent of all program director positions and 17 percent of the Foundation's executive positions, including Assistant Directors who lead NSF's science directorates. The number of IPAs NSF uses annually has increased from 126 in 2004 to 190 in 2012, with IPAs growing from nine to twelve percent of the NSF workforce over that period.

The additional cost of using IPAs instead of hiring permanent federal employees is significant. We found that NSF paid an annual additional cost of approximately \$6.7 million, or an average of over \$36,000 per IPA, for the 184 IPAs we examined in our audit. Higher costs for IPAs result from NSF's effort to make IPAs "whole" by providing the salary and fringe benefits they were earning at their home institutions, as well as reimbursing them for travel to NSF, temporary living expenses, lost consulting income and state income taxes if the IPA is from a state that does not have an income tax. Following is a summary of the primary categories of higher costs associated with IPAs.

**Salaries:** We found that, for one year, NSF incurred an additional cost of slightly over \$3 million for IPA salaries. We considered additional cost to be the cumulative amount an IPA's salary exceeded the average salary for a permanent federal employee in the same or a comparable position.

In August 2012, NSF had 21 IPAs at the executive level and 163 non-executive IPAs, 154 of which were program directors. NSF paid 54 IPAs salary exceeding the federal executive pay limit of \$179,700, which is the highest salary that could be earned by a federal employee at NSF, including presidential appointees. NSF paid 34 of these IPAs an annual salary of \$200,000 or more, with the highest annual salary of \$301,247 paid to an Assistant Director.

**Fringe Benefits:** IPAs continue to receive fringe benefits (such as retirement and health and life insurance) from their home institution. We calculated that NSF paid nearly \$800,000 in additional fringe benefit costs for the 184 IPAs we identified.

NSF does not know the individual components (health insurance, retirement, child care, etc.) of costs comprising the fringe benefit packages it pays for IPAs. NSF reimburses the home institution for its contribution to the IPA's fringe benefit package based on a percentage or dollar amount provided by the institution. Because of the wide variety of fringe benefits that can be provided by an employer, the cost of fringe benefits for IPAs varies widely. For the 184 IPAs we examined, NSF paid employer contributions for the IPA fringe benefits at rates ranging from 8 to 60 percent of salary, with an average rate of 31 percent of compensation. In comparison, NSF paid its permanent employees an average fringe benefit rate of 26 percent of compensation.

***Lost Consulting:*** IPAs can receive up to \$10,000 annually to replace consulting income they had been earning if they agree to discontinue consulting activities while on assignment at NSF and can provide tax records to support the amount earned. Permanent federal employees do not receive payments for lost consulting income; therefore, all lost consulting paid is an additional cost to NSF. NSF paid 58 of the 184 IPAs (or 32 percent) lost consulting payments at a total annual cost of \$337,823. The average amount NSF paid to IPAs that received lost consulting was \$5,726, with payments ranging from \$500 to one IPA to \$10,000 to 13 IPAs.

***Temporary Living Expenses:*** IPAs can receive a household move or partial reimbursement for lodging, meals and incidental expenses (i.e., per diem) for temporarily relocating to NSF for the duration of their assignment. Ninety-two percent of the 184 IPAs we examined (169 of 184) came from outside of the Washington, DC metropolitan area and all opted to receive temporary living expenses (per diem paid at a maximum of \$22,507 for each year of their assignment) instead of relocation expenses to move their household, costing NSF approximately \$3.8 million annually.

In comparison, over the most recent two year period, NSF hired a total of 77 permanent federal employees, for an average of 39 per year, in positions similar to those held by IPAs (such as in science directorates and the Office of the Director). Of these 77 new hires, 51 percent were paid relocation expenses, which cost NSF an average of \$501,274 per year in the two years we examined.<sup>1</sup>

### ***Long Term Vision for Rotator Programs***

As described above, NSF invests a significant amount of time and money into bringing IPAs into the agency. While our audit was underway, the agency prepared a whitepaper to describe the value and benefits of IPAs to NSF. The document details at a high level how IPAs contribute to NSF's mission and how the flexibilities afforded by the Intergovernmental Personnel Act help NSF attract leading scientists, engineers, educators, and others. But it did not demonstrate, nor did we find evidence during the course of our audit, that anyone at NSF was responsible for measuring and documenting the impact of rotating personnel, including IPAs, on the agency as a whole.

As a result, the agency misses opportunities to assess the rotator programs' overall contribution to NSF's mission and goals. Given the number of IPAs at NSF at any given moment, their prevalence in the highest ranks of the agency and the added costs that result from their use, it would be helpful if NSF designated a champion responsible for overseeing and managing the rotator programs as a whole.

### ***Opportunities to Reduce Costs for Rotators***

We identified several possible ways that costs associated with rotators could be reduced, such as increasing the use of telework from rotators' home institutions, increasing cost sharing by home

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<sup>1</sup> We used an average of the last 2 FYs of relocation expenses because the amounts varied significantly: relocation costs in FY 2011 were \$702,217, while such costs in FY 2012 (through September 14, 2012) totaled \$300,332.

institutions, limiting salary to the maximum federal pay rate for the position, and reviewing the highest fringe benefit rates paid to rotators.

We recommended that NSF evaluate ways the cost of using IPAs can be reduced. Such actions could include studying expanded use of telework, achieving greater cost sharing, limiting annualization of IPA salaries to the federal pay rate for the position, and reviewing fringe benefit rates that exceed an amount determined by NSF.

In response to our recommendation, NSF hired a contractor in February 2014 to conduct focus groups (comprised of rotators and rotators' managers) as part of an assessment of its use of the Intergovernmental Personnel Act. In June 2014, NSF provided the results of this effort, which concluded that the focus groups reinforced "the numerous benefits of NSF's IPA program and shed light on some key challenges." However, this effort did not suggest any cost saving strategies.

In August 2014, NSF developed a draft list of additional actions it could take to minimize the costs of IPAs. Among other things, NSF indicated that it would develop and make available to staff guidelines on IR/D travel and telework (FY 15), finalize a one-page document for outreach to institutions about the benefits of the IPA program, and improve eJacket documentation of cost share requests and institutional responses (beginning in FY 15). In June of 2015 we found that 1) NSF had produced no formal guidelines on IR/D travel and telework, though it indicated that many divisions have begun to implement the idea of mixing IR/D and telework in single trips; 2) the document on the benefits of the IPA program has not been crafted; and 3) at present IPA awards are not initiated in eJacket. Much work remains to be done for NSF to accomplish the items on its list.

#### Personnel Management Issues Associated with Rotators

In response to a Senate request, we conducted an audit to determine whether NSF's rotating director model ensured effective personnel management performance and oversight at the executive level. At the time of our audit, NSF had 1,489 total staff—1099 permanent staff and 174 IPAs. Rotators filled over a quarter of NSF's executive-level science positions. As a result, there was a great deal of turnover in NSF's executive ranks.

We found that NSF's reliance on rotators presented workplace management challenges in part because NSF did not require IPAs to have annual performance evaluations even though they functioned in the same capacity as NSF's federal executives, whose performance is evaluated each year. As a result, NSF risked not holding IPAs accountable, as it does federal employees, for accomplishing NSF's mission and goals. The audit also noted that rotators generally do not have prior working knowledge of the federal government culture or management practices because they rotate into NSF from universities and other institutions, which gives them a steep learning curve when they arrive at NSF.

We recommended that NSF create a performance management process for IPAs that included performance standards and annual performance assessments, among other things. Beginning in 2011, NSF made a call for performance plans for IPAs at and below the executive level, which it indicated brought all IPAs under a performance management system. As of June 2015, NSF reported that it had 24 executive level plans in its HR system. NSF also indicated that it had

received ten executive level IPA appraisals and 107 program level IPA appraisals in the 2013-2014 cycle. NSF has also created a course on Introduction to Federal Supervision at NSF, which it reports many IPA supervisors are taking.

We also recommended that NSF implement a process for integrating new executives that included a focus on management processes for IPAs. NSF utilizes its Executive Leadership Retreat, which addresses a number of federal government processes and procedures, to provide such training.

### Independent Research/Development Travel Program

NSF's Independent Research/Development (IR/D) Program permits both employees and non-permanent staff to maintain their professional competencies and remain actively involved with their professional research while working at NSF. IR/D activities should relate to accomplishing NSF's goals and are considered to be official duties. At the time of our audit, of 250 working days in a year, NSF policy allowed IR/D participants to spend up to 50 (20 percent) days a year on IR/D activities. In 2010 IR/D travel costs were \$1.8 million for 314 participants; rotators and visiting scientists took 90 percent of IR/D trips during this period.

Our 2012 audit found that NSF management lacked sufficient oversight controls to properly monitor the IR/D program and had not fully assessed its impact on travel costs, staff time and NSF's workload. Further, NSF had not identified the program's goals or quantified expected outcomes. In response to recommendations made in our audit and by an IRD Task Group NSF created in response to an OIG management implication report on IR/D travel, NSF has strengthened management controls over the IR/D program and taken steps to reduce program costs. For example, the Foundation issued guidance encouraging IR/D participants to reduce costs by making fewer trips of longer duration and by using virtual tools while working at NSF headquarters. NSF also created an IR/D Council, which reviews implementation of the program, including participants' compliance with program guidance. NSF also requires IR/D participants to complete training on proper use of the program.

### Opportunities to Improve Controls over Rotator Conflicts of Interest

To accomplish its mission, in FY 2014 NSF funded approximately 11,000 new competitive awards. In that year, NSF convened panels of external experts that evaluated 48,100 proposals through a competitive merit review process. The panels made recommendations to NSF program officers and directors, including rotators, who made the final funding determinations.

In light of the Foundation's reliance on rotators to make funding decisions, it is critical that strong controls be in place to identify and mitigate conflicts of interests (COIs) that occur as a result of rotators' own research activities or their connections with their home institutions, which might be seeking NSF funding. Such controls protect incoming rotators—many of whom have never worked in a federal environment and are thus unfamiliar with the laws and rules that will govern their behavior at NSF—as well as the Foundation itself.

We prepared a management implication report to document problems with those controls we found in the context of one rotator's tenure at NSF. While the circumstances we detailed relate to the management of just one rotator's conflicts in one NSF division, the extent of the problems we identified—ranging from the failure to adequately mitigate and manage known COIs upon

the rotator's arrival at NSF, to the inaccuracy of award information contained in eJacket, and the circumvention of the control over the cooling off period—seriously undermine the Foundation's ability to identify, manage, and mitigate rotator COIs.

We found that:

***Division staff and the rotator did not develop, document, and communicate a plan to manage the rotator's known conflicts upon her arrival at NSF***

Prior to the rotator's arrival at NSF, her supervisor at her home institution was concerned that the rotator's position at NSF might prevent the home institution from receiving NSF funding. Despite the rotator's known conflict, no clear plan was developed to manage and mitigate her COIs at the outset of her tenure at NSF.

The rotator reviewed several proposals that contained letters of support from her home institution. In one of those proposals, for which she wrote the letter of support, she had also recently collaborated with the PI and the co-PI—both of which constitute additional COIs.

Developing and documenting a plan as to how the rotator's conflicts would be managed immediately upon her arrival at NSF would have enabled the rotator and all of the individuals working with her to take concrete, appropriate steps to deal with those conflicts over the course of her tenure at NSF. Creating such a plan, along with taking appropriate training, at the outset of the rotator's arrival at NSF would have ensured that the rotator was sensitized to other potential conflicts she might have—such as the ones associated with individuals with whom she had recently collaborated.

***Significant delays in the rotator's completion of a required ethics course and submission of required financial disclosure form undermined the rotator's and NSF's ability to prevent, identify, and manage conflicts***

NSF requires all new program staff, including rotators, to attend a one-hour, in-person course covering the basic COI laws and rules, as well as gifts, travel, and other matters. and “some of the myths rotators seem to pass on to one another.” The rotator arrived at NSF in March of 2012; in May of that year she received an email reminder from the NSF Office of General Counsel concerning her need to complete the course by December 31, 2012. The rotator received further reminders from OGC to take the required in-person ethics training on November 20, 2012, and on December 17, 2012. On December 31, 2012, after the rotator received a final reminder to take the required online training by the end of business that day, she completed the online course.

NSF also requires incoming rotators to file an Executive Branch Personnel Confidential Financial Disclosure Report), covering the 12 months prior to their appointment, within 30 days of their arrival at NSF. The rotator was informed of this requirement by OGC on March 11, 2012, and reminded by OGC staff of her need to complete the form on April 18, 2012, and May 17, 2012. After the intervention of the rotator's supervisor, the rotator finally submitted the required form.

The significant delays in the rotator's completion of the required ethics course and her submission of a required financial disclosure form undermined both the rotator's and NSF's ability to identify, manage, and mitigate the rotator's conflicts. These controls exist to protect

both the rotator and the Foundation. The failure of the rotator to respond to the repeated reminders to take the ethics course and complete the financial disclosure form is quite concerning, as is the fact that her supervisors allowed her to work for an extended period without ensuring that she completed either task.

***When NSF became aware that the rotator had approved an award with which she had conflicts, the actions taken to assess the impact of the COI on the award were seriously flawed***

In March of 2013, the Designated Agency Ethics Official (DAEO) expressed concern to directorate management about the rotator's decision to fund proposals that contained letters of support signed by the rotator or other individuals from her home institution, and recommended that the directorate have someone from another division re-examine those awards to ensure that they were warranted.

The first assessment of those awards resulted in an unwarranted and unsupported assurance to directorate management that the COI had no negative impact on the award. The supervisor informed the Deputy Assistant Director that he did not believe there was any basis to question the rotator's impartiality with respect to the award and that the independent reviewer had found no evidence of bias. It is noteworthy that the supervisor provided this determination to his management *before* he received an assessment from the independent reviewer. In fact, the independent reviewer informed the supervisor that he saw little justification for the award based on the proposal itself.

When the problems with the first assessment were identified, the OIG recommended that the awards be suspended while the assessment recommended by the DAEO was conducted. The second assessment determined that normal procedures were followed and there was no indication of favoritism resulting from a COI. We found that although the second assessment was conducted by a reviewer from outside the rotator's directorate, the supervisor did not give the reviewer any information about the rotator's conflicts. Thus, the second reviewer's report stated she was unable to review potential COIs. When interviewed by OIG, the second reviewer stated that, in general, the three proposals she reviewed were not of the caliber that she would expect to see funded by NSF. When presented with information about the rotator's conflicts, the reviewer stated that the award should not have been made and that an objective program officer should conduct a fresh review to result in a new recommendation.

The fact that two successive efforts to determine whether the awards identified by the DAEO were warranted both resulted in unsupported conclusions raises a question as to whether NSF management really knows how to respond to such a concern.

***Information in eJacket for one of the awards in question reflected neither the person who wrote the justification for funding nor the person who actually made the decision to fund the award, undermining the agency's ability to identify and mitigate COIs***

At NSF, all funding actions associated with an award are supposed to be documented in eJacket, which serves as the official government record of those decisions. Knowing which individuals are involved in the decision to fund an award is critical to managing conflicts of interests, as COIs are inevitably tied to specific individuals.

During the course of our investigation, we found that the individual documented as the decision maker for the award with which the rotator had conflicts actually gave no independent thought to whether the award should have been made, while the identities of the persons who made the funding decision and wrote the funding justification are missing. We also found that at least some of the rotators in the directorate felt they could require their successors to honor funding decisions they had made but not documented.

***A critical tool used to enforce the one-year cooling-off period following the rotator's tenure at NSF was circumvented***

All individuals who receive NSF funding have a unique PI number (the PI ID) that tracks their funding history at NSF. For rotators, the PI ID also reflects their temporary tenure at NSF. When a rotator's time at NSF ends, they begin a one-year cooling off period during which any communications between the former rotator and NSF staff about a proposal involving the former rotator must be done through a substitute negotiator because the former rotator is prohibited from engaging in substantive discussions with NSF staff. Because a rotator's tenure at NSF is associated with his or her PI ID, if a former rotator applies for funding within the cooling off period, a warning banner flags the conflict and signals that NSF personnel should not be directly communicating with the former rotator about funding.

We found that shortly after the rotator left NSF, and while she was in the cooling off period, her institution applied for \$14 million in NSF funding for a project for which the rotator was the PI. Normally the rotator's PI ID would have indicated that she was in a cooling off period and needed to appoint a substitute negotiator for the proposal. In this case, however, the rotator used a new PI ID that did not reflect her funding history with NSF and did *not* contain the COI warning flag relating to her period as a rotator. We could not determine precisely who created the second ID, although it appears to have been done by someone within the agency.

***Recommendations to Improve Controls over Rotators' COIs***

By bringing their up-to-the minute research experience to NSF, rotators make significant contributions to the quality of the Foundations' funding process. In light of their ongoing research and organizational affiliations, rotators also bring COIs, which NSF must identify, mitigate, and manage. Strong controls designed to address COIs ultimately protect both the rotator and NSF. Based on the issues we noted in our investigation, we recommended that NSF take appropriate action to strengthen those controls. Such action should include:

1. Ensuring that immediate, concrete steps are taken to develop, document and communicate plans to manage rotators' known conflicts upon their arrival at NSF.
2. Ensuring that all incoming staff—including rotators—attend in-person ethics training and, when required, submit financial disclosures as soon as possible after coming to NSF. As noted previously, in the past OIG has recommended that new employees attend the training within 3 months of their arrival at NSF. In the case of rotators with known conflicts, NSF should require that the training be taken within 30 days of their arrival.
3. Developing enforcement tools—such as suspending the PO or rotator from proposal and award review duties until they comply--to enforce the timeframes associated with ethics and financial disclosure requirements.

4. Ensuring that individuals who supervise POs, including rotators, are provided with timely access to the status of their employees' compliance with ethics and financial disclosure requirements and understand that they are accountable for their staff's prompt compliance with those requirements.
5. Suspending the three awards identified by the DAEO and having an objective PO conduct a *de novo* review of those awards to determine if they are warranted.
6. Ensuring that all staff understand the negative impact that unaddressed COIs can have on the integrity of the merit review process, and that any questions about the impact such COIs can have on a funding decision are swiftly, appropriately and effectively addressed.
7. Ensuring that all program staff, including rotators, understand that eJacket must accurately reflect the names of the individuals who make funding recommendations and decisions.
8. Clarifying when, if ever, an outgoing rotator can make funding commitments that his or her successors must implement and, if such a commitment can be made, how it should be documented in eJacket.
9. Determining the extent to which outgoing rotators make undocumented funding commitments that their successors must implement, and program officers or rotators write funding recommendations that they do not sign, elsewhere in the directorate and across the Foundation.
10. Ensuring that neither of its systems (FastLane or PARS) allow the creation of a duplicative PI ID without an explicit override by Division of Information Systems and that the need for this override be justified and documented.
11. Determining whether the large number of individuals within the agency who are able to create PI IDs should be reduced to enhance the integrity of the process.

### Conclusion

All three parties – NSF, IPAs and their home institutions – benefit from IPA assignments. NSF gains new ideas and expertise from the research community, IPA assignees learn about NSF programs and the merit review process, and the IPAs' home institutions benefit from the knowledge of and experience with NSF and its processes that IPAs bring back when they return.

While we recognize the significant contributions of NSF's rotating staff, we have not found that NSF has identified and implemented concrete actions to reduce the costs of making rotators whole. In fact, in some instances, the agency is routinely deviating from policies that were instituted to lessen the financial impact of using rotators. Given the fact that amounts spent on rotators come from the appropriation that funds NSF's research grants, it is essential for NSF to carefully examine those costs to ensure that amounts for rotators are being spent effectively and efficiently.

Finally, ensuring that funding justifications and recommendations are free from conflicts of interest—including those experienced by rotators as a result of their ongoing research and organizational affiliations-- is essential to the integrity of NSF's merit review process. In light of the Foundation's continued reliance on rotators to make funding decisions, it is vital that NSF have strong controls to identify and mitigate possible COIs.

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

