

Audit of NSF's Workforce Management: Rotating Director Model

National Science Foundation
Office of Inspector General

March 30, 2010

OIG 10-2-009





National Science Foundation • 4201 Wilson Boulevard • Arlington, Virginia 22230
Office of the Inspector General

MEMORANDUM

DATE: March 30, 2010

TO: Dr. Cora B. Marrett
Acting Deputy Director, National Science Foundation

FROM: James Noeth /s/
Acting Associate Inspector General for Audit

SUBJECT: *Audit of NSF's Workforce Management: Rotating Director Model*, Report Number 10-2-009

Attached please find the final report of our audit of NSF's rotating director model. We have included NSF's response as an appendix to the final report.

OMB Circular A-50 requires NSF to prepare a time-phased corrective action plan to address the report recommendations. Please furnish our office with a copy of this corrective action plan no later than May 31, 2010.

We appreciate the courtesies and assistance provided by so many NSF staff during the audit. If you have any questions, please contact Karen Scott, Senior Audit Manager, at (703) 292-7966.

Attachment

cc: Allison Lerner
Anthony Arnolie
Judith Sunley
Deborah Crawford
James Lightbourne
Joseph Burt
Pam Hammett
Karen Scott
Susan Carnohan
Kelly Stefanko
Gina Zdanowicz

Executive Summary

To maintain a world-class scientific workforce, the National Science Foundation (NSF) supplements its permanent, career employees with a variety of non-permanent staff. All of the non-permanent appointments are federal employees, except for Intergovernmental Personnel Act (IPA) assignments, who remain employees of their home institution. At the time of our audit, “rotating directors”, in the form of IPA assignees, filled over a quarter of NSF’s executive-level, science positions.

The Senate Committee Report accompanying NSF’s 2010 appropriations bill expressed “deep concern” with systemic workforce management issues at NSF. While noting the benefits of NSF’s rotational director model in bringing the agency fresh scientific insight and perspective, the report also cited its potential for creating gaps in management oversight.

Purpose

The Senate Committee Report accompanying NSF’s 2010 appropriations bill requested that the OIG provide a report assessing NSF’s rotating director model. Accordingly, the objective of this audit was to determine if NSF has a rotator model in place that ensures effective personnel-management performance and oversight at its executive level.

Results in Brief

Based on our limited assessment, we found that NSF generally has the components of an effective personnel management system and followed Office of Personnel Management and government-wide requirements. Nothing came to our attention to indicate that NSF’s personnel management system was ineffective. With the exception of performance management, NSF applied the components of effective personnel management to both its permanent and temporary staff and IPAs in the same manner.

However, differences exist in NSF’s management of various appointments at the executive level. Specifically, NSF does not include IPAs in its formal performance management system even though they function in the same capacities as NSF’s federal executives. Additionally, we noted that IPAs may not have prior working knowledge of the federal government culture or of federal government management processes because they are rotating into NSF from universities and other institutions.

As a result, NSF’s rotating director model presents challenges to effective personnel-management performance and oversight. Because IPAs do not have a written record of performance, NSF risks not holding them accountable, as it

does its federal employees, in accomplishing NSF's mission and goals. Also, the fact that IPAs do not always have prior knowledge of, or experience with, the federal workplace culture or federal government management processes gives them a steep learning curve when they arrive at NSF.

NSF takes some steps to mitigate these risks; however, NSF could do more to address the challenges associated with the rotating director model. NSF should require that IPAs, at all levels, be included in the performance management system, in an appropriate manner. In addition, NSF should ensure that it is capable of effectively preparing and integrating its rotating executives into the federal government workplace.

Recommendations

NSF recognizes the challenges to effective personnel management involved in having a rotating workforce and is committed to improving its human capital management. We recommend that the NSF Director:

1. Create and document a performance management process appropriate for IPAs. Such a process does not have to be the same as the process for federal employees but should include:
 - establishing a formal performance assessment policy and practice that requires annual performance assessments for IPAs and some form of documentation that the assessments occurred;
 - developing IPA performance standards for both program-level and executive-level IPAs;
 - ensuring that each new IPA agreement includes an attached set of performance standards;
 - ensuring that supervisors of IPAs understand their responsibility to conduct annual appraisal discussions with all IPA assignees; and
 - ensuring that each new IPA agreement contains sufficient detail to convey expectations of the position.
2. Ensure that NSF continues its efforts to implement an appropriate process for integrating new executives into the agency sufficient to orient IPAs with unfamiliar management processes.

Agency Response

NSF agreed with our recommendations and in its response, indicated that it has already taken steps towards developing and implementing a performance management process for all IPAs similar to that for federal employees.

Table of Contents

| | |
|--|----|
| Executive Summary | i |
| Introduction | 1 |
| Results of Audit | 7 |
| NSF Generally has the Components of an Effective Personnel Management System | 10 |
| NSF Does Not Include Rotating Executives in its Performance Management System | 11 |
| Rotating Executives Generally Do Not Have a Working Knowledge of Federal Government Culture and Management Processes | 13 |
| Recommendations | 14 |
| Agency Response | 15 |
| OIG Contact and Staff Acknowledgements | 15 |
| Appendices | |
| Appendix A: Agency Response | 16 |
| Appendix B: Objective, Scope, and Methodology | 17 |
| Appendix C: Illustration of NSF’s Executive-Level Science Workforce | 19 |
| Appendix D: Assessments of NSF’s Use of Rotators | 20 |
| Appendix E: Personnel Management Scholarship | 22 |

Introduction

The Senate Committee Report accompanying the National Science Foundation's (NSF) 2010 appropriations bill¹ expressed "deep concern" with systemic workforce management issues at NSF. The report stated that "compounding the issue is the rotational director model, which although [it] brings fresh scientific insight and perspective to the agency, creates gaps in management oversight." Accordingly, the report requested that the NSF OIG provide an assessment of NSF's rotating director model.

Mission of the National Science Foundation

The National Science Foundation 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. To accomplish this 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's Organizational Structure

NSF is headed by a Director and Deputy Director who are appointed by the President. The Director serves a six-year term, and the Deputy Director serves at the pleasure of the President.

NSF is divided into seven directorates that support science and engineering research and education: Biological Sciences (BIO), Computer and Information Science and Engineering (CISE), Engineering (ENG), Geosciences (GEO), Mathematics and Physical Sciences (MPS), Social, Behavioral and Economic Sciences (SBE), and Education and Human Resources (EHR). Each directorate is headed by an executive level Assistant Director and Deputy Assistant Director or equivalent, and a primary responsibility of the Assistant Directors is to provide leadership and direction to their respective directorates. Assistant Directors are also responsible for planning and implementing programs, priorities, and policy within the framework of statutory and National Science Board authority.

Each directorate consists of a number of divisions, which are headed by a Division Director, and most are supported by a Deputy Division Director or equivalent. A primary responsibility of Division Directors is to provide leadership

¹ Senate Committee on Appropriations Report accompanying the Departments of Commerce and Justice, and Science, and Related Agencies Appropriations Bill, 2010.

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.

Four science offices within NSF's Office of the Director also directly support research: the Office of Polar Programs (OPP), the Office of Integrative Activities (OIA), the Office of International Science and Engineering (OISE), and the Office of Cyberinfrastructure (OCI). Each science office is headed by an Office Director. Other offices within the Office of the Director support business operations, such as information and resource management, legal affairs, and financial management.

NSF's Use of Non-Permanent Staff

To maintain a world-class scientific workforce, NSF relies on authority provided in the National Science Foundation Act of 1950 (the Act). Specifically, the Act gives the NSF Director the authority to, "in accordance with such policies as the Board chooses to prescribe, appoint for a limited term or on a temporary basis, scientists, engineers, and other technical and professional personnel on leave of absence from academic, industrial, or research institutions." With this authority, NSF supplements its permanent, career employees with a variety of non-permanent staff such as temporary (limited term),² intermittent (experts or consultants), and two rotating appointment types – Visiting Scientists, Engineers, and Educators (VSEE) and Intergovernmental Personnel Act (IPA). All of the non-permanent appointments result in federal employees, except for IPAs, who remain employees of their home institution.

Temporary Appointments

Temporary employees are limited-term appointments, usually for a period of up to three years. NSF uses temporaries throughout the agency. For example, it uses temporary appointments to bring in non-permanent executives, such as limited-term Senior Executive Service (SES) Division Directors. In addition to the executives, some Program Officer positions are filled through temporary appointments. Temporary employees were seven percent of NSF's total workforce at the time of our audit.³

² Limited-term appointments may be filled with permanent, career employees. Because the appointment was temporary, we included those staff as non-permanent.

³ Directorates, OPP, OCI, and OISE data as of 9/11/09, non-science offices and OIA data as of 10/23/09

Intermittent Appointments

Intermittent appointments are another form of non-permanent appointment used by NSF. Intermittent employees act as experts or consultants and may be appointed for a full year; however, they cannot work more than 130 days a year. At the time of our audit, intermittent employees comprised four percent of NSF's total workforce.

Rotator Program Appointments

The federal government's Intergovernmental Personnel Act Mobility Program and NSF's Program for Visiting Scientists, Engineers and Educators are known as "rotator" programs, and are NSF's primary vehicles for employing temporary professional scientists, engineers, and educators.

Visiting Scientists, Engineers, and Educators – VSEEs are temporary employees appointed for a period of one year, with an option to extend the appointment for an additional year. Because they are temporary federal employees, NSF pays their salaries directly through its Salaries and Expenses appropriation, although VSEEs continue to receive their benefits through their home organizations.

At the time of the audit, VSEEs made up four percent of NSF's total workforce. Most were Program Directors in the directorates and science offices with non-supervisory responsibilities that include managing an effective and timely merit review process and establishing goals and objectives for research programs.

Intergovernmental Personnel Act Appointments – At NSF, IPAs are usually scientists, engineers, and educators on loan from their home institutions. The Intergovernmental Personnel Act of 1970 allows the temporary assignment of personnel between federal agencies and other governmental, academic, tribal, and eligible non-profit organizations. The Act permits individuals to serve in a temporary capacity for a period of up to four years. Consistent with the intent of the Act, IPA assignments can strengthen management, assist in the transfer and implementation of new technology, involve officials of other organizations in developing and implementing federal policies and programs, and enhance the professional abilities of the participants. Most IPAs return to their home institutions following their tour of duty bringing with them their newly acquired knowledge of how NSF functions.

While IPAs remain employees of their home institutions, they are considered employees of the borrowing agencies for virtually all purposes including limitations on political activities and outside earned income, and financial disclosure and conflict of interest requirements.

At the time of our audit, IPAs were 12 percent of NSF's total workforce and of the 229 rotators at NSF, 174, or 76 percent, were IPAs. However, it is significant to note that IPAs are the only NSF executives that are not federal employees, and out of a total of 75 *executive-level* science staff at the agency, 20 were rotating

directors. Six IPAs were Assistant/Science Office Directors and 14 were Division Directors. The NSF Acting Deputy Director was also an IPA.⁴

Benefits of Including Rotators in NSF's Workforce – NSF's VSEE and IPA programs strengthen NSF ties with the research community and provide NSF with talent and resources that are critical to meeting its mission. These scientists, engineers, and educators, who come to NSF on rotational assignments from academia, industry, and other eligible organizations, supplement NSF's own world-class staff by bringing cutting edge and up-to-date knowledge and experience to help the agency support an entire spectrum of science and engineering research and education. NSF staff also noted that rotators add value by bringing fresh ideas and management expertise to the agency.

NSF's Workforce

At the time of our audit, NSF had 1,489 total staff.⁵ Of those, 1,099, or 74 percent, were permanent employees. The remaining 390, or 26 percent, were non-permanent staff. At the Assistant Director, Division Director, and Deputy positions within the directorates and science offices, 26 out of these 75 executive-level staff were non-permanent. At the executive level, non-permanent staff were predominant in the positions of Assistant/Science Office Director (64 percent) and Division Director (58 percent).⁶

Percentage of Permanent and Non-Permanent Staff Comprising NSF's Total Workforce

| | | |
|-----------------------|------|------|
| Permanent | 1099 | 74% |
| Non-permanent | 390 | 26% |
| NSF's Total Workforce | 1489 | 100% |

⁴ For our purposes, we included Assistant/Office Directors, Executive Officers/Deputies, Division Directors, and Division Deputies/Executive Officers in our definition of executive-level science staff. We did not include the NSF Director, Deputy Director, or staff at the AD-5 level.

⁵ Total staff does not include the Office of Inspector General or students. Further, if a person was acting in a vacant position at the time of our audit, we counted the position as vacant, not filled.

⁶ Of 11 Assistant/Science Office Directors, there were 2 permanent employees, 1 temporary employee, 6 IPAs, and 2 vacant positions. Of the 31 Division Directors, there were 8 permanent employees, 4 temporary employees, 14 IPAs, and 5 vacant positions.

Breakdown of Non-Permanent Staff

| NSF's Total Workforce | Permanent | Rotators | | Temporary | Intermittent |
|-----------------------|-----------|----------|-------|-----------|--------------|
| | | IPAs | VSEEs | | |
| 1489 | 1099 | 174 | 55 | 104 | 57 |
| 100.0% | 73.8% | 11.7% | 3.7% | 7.0% | 3.8% |

The majority of rotators are in the directorates and science offices. Of the 229 rotators, only 5 worked in NSF's business offices; the remaining 224 worked in the directorates and sciences offices.

As noted earlier, most VSEEs were Program Directors. IPAs, however, served in many of NSF's executive positions.

Directorate and Science Office Executives by Appointment Type

| Type of Executive Position | Permanent | IPAs | Temporary | Vacant | Total |
|---|-----------|------|-----------|--------|-------|
| Assistant/Office Director | 2 | 6 | 1 | 2 | 11 |
| Deputy Assistant Director/Executive Officer | 8 | 0 | 0 | 2 | 10 |
| Division Director | 8 | 14 | 4 | 5 | 31 |
| Deputy Division Director/Executive Officer | 16 | 0 | 1 | 6 | 23 |
| Total | 34 | 20 | 6 | 15 | 75 |
| | 45% | 27% | 8% | 20% | 100% |

IPAs filled over a quarter of NSF's executive-level science positions. (See Appendix C for a detailed illustration depicting NSF's use of IPAs in its executive-level science workforce at the time of our audit.) An earlier National Academy of Public Administration report noted that because of the limited tenure of rotators and the job mobility of some permanent employees, NSF experiences a great deal of turnover in its executive ranks. It said that a multi-year time lapse picture of NSF's executive-level science workforce would "give the appearance of many blinking lights."

Use of IPAs at Other Federal Agencies

In order to compare how NSF uses its IPAs, we identified five other federal agencies that use IPAs to supplement their existing workforce, and reviewed their policies for the use of IPAs. These agencies are the Department of Energy (DOE), the National Aeronautics and Space Administration (NASA), the National Institutes of Health (NIH), the Environmental Protection Agency (EPA), and the Veterans Affairs Administration (VA). Relative to the number of permanent employees, NSF is a major user of IPA authority for bringing cutting-edge knowledge into its workforce.

Use of IPAs at Other Federal Agencies

| <i>Agency</i> | <i>% IPA out of total workforce</i> | <i>Are IPAs allowed to supervise?</i> | <i>Examples of positions filled by IPAs</i> | <i>Are IPAs included in performance management system?</i> |
|------------------|-------------------------------------|---------------------------------------|--|--|
| VA | 0.6% | Y | Research | N |
| EPA | 0.1% | Y | Scientist, Engineer, Special Assistant | Y |
| DOE ⁷ | 0.7% | Y | Science/Research | Y |
| NIH | 1% | N | Institution Directors, Science/Research | N |
| NASA | 0.3% | Y | Project Manager, Scientist, Engineer, Educator | N |
| NSF | 12% | Y | Assistant Director, Division Directors | N |

IPAs comprised 12 percent of NSF's workforce as compared to 1 percent or less of the other federal agencies reviewed. The other agencies predominantly use IPAs in technical research and science positions, which may be supervisory. However, NSF is unique in its routine use of IPAs for managerial, executive-level positions. Finally, while NSF, like NASA, NIH and VA, did not have performance management requirements for IPAs, two agencies (EPA and DOE) did require IPA involvement in performance management.

⁷ This applies only to DOE's headquarters office.

Results of Audit

Based on our limited assessment, we found that NSF generally has the components of an effective personnel management system and followed OPM and government-wide requirements. Nothing came to our attention to indicate that NSF's personnel management system was ineffective. With the exception of performance management, NSF applied the components of effective personnel management to its permanent, temporary, and IPA staff in the same manner.

However, differences exist in NSF's management of various appointment types at the executive level. Specifically, NSF does not include IPAs in its formal performance management system even though they function in the same capacities as NSF's federal executives. Additionally, we noted that IPAs may not have prior working knowledge of the federal government culture or of federal government management processes because they are rotating into NSF from universities and other institutions.

As a result, NSF's rotating director model presents challenges to effective personnel-management performance and oversight. Because IPAs do not have a written record of performance, NSF risks not holding them accountable, as it does its federal employees, in accomplishing NSF's mission and goals. Also, the fact that IPAs do not always have prior knowledge of, or experience with, the federal workplace culture or federal government management processes gives them a steep learning curve when they arrive at NSF.

NSF takes some steps to mitigate these risks; however, NSF could do more to address the challenges associated with the rotating director model. NSF should require that IPAs, at all levels, be included in the performance management system, in an appropriate manner. In addition, NSF should ensure that it is capable of effectively preparing and integrating its rotating executives into the federal government workplace.

Components of an Effective Personnel Management System

An effective personnel management system is critical to attract, develop, and retain quality employees from diverse backgrounds, and to help ensure staff perform at high levels and accomplish the agency mission. The Office of Personnel Management (OPM), the Government Accountability Office, and other scholarship have identified the elements of an effective personnel management system. While personnel management is a large and complex area of study, we identified six components of personnel management as particularly important to our assessment of NSF's rotator model. First, these criteria form a basis to make a comparison between NSF's management of permanent and non-permanent staff. Second, these elements distinguish between the components of an

agency-wide personnel management system and the components of such a system at an individual staff level. When presented with these elements, NSF officials agreed that they were an appropriate basis for making a comparison between NSF's management of permanent and non-permanent staff.

The components we identified were: performance management, recruitment, human capital and workforce planning, leadership succession management/knowledge transfer, continuous learning, and employee integrity. A description of each follows.

Performance Management

OPM requirements and other scholarship describe performance management as the formal process of planning work and setting expectations, continually monitoring performance, developing performance capacity, periodically rating performance, and rewarding good performance. Performance management is a key component of effective personnel management because it is the process for ensuring that staff understand what is expected of them, and holds them accountable for their performance. We focused on performance management because ensuring that all staff, including executives, are working towards common goals is critical to accomplishing the organization's mission. Additionally, we focused on performance management because IPAs fill key executive and management positions at NSF.

Recruitment

Recruitment is the process of attracting, screening, and selecting qualified people for a position. Federal law imposes several requirements for the recruitment of federal jobs, including that employee selection and advancement must be based on relative ability, knowledge and skills, and fair and open competition. In addition, OPM requires that employees in the Senior Executive Service meet five core qualifications and that these qualifications are certified by a Qualifications Review Board⁸ before individuals are appointed to the Senior Executive Service. Ensuring that potential employees possess the qualifications and skills needed to perform the job is critical to both the employee's and the organization's success. However, although many are serving in executive positions, OPM does not require IPAs to have their executive qualifications certified by a review board. Therefore, we focused on NSF's recruitment activities related to ensuring that potential executives possess the qualifications and skills needed to perform the job.

Human Capital Management and Workforce Planning

Strategic human capital management seeks to place the right people in the right jobs to most effectively perform the work of the organization. To this end, federal regulations require that agencies maintain a current human capital plan and report annually on human capital management to OPM. Human capital

⁸ Qualifications Review Boards are OPM-administered independent boards of senior executives that assess the executive core qualifications of SES candidates.

management also includes an analysis of an agency's workforce. We included human capital and workforce planning to see how NSF incorporates rotators and whether positions are appropriately identified as reserved for career employees or designated for IPAs as part of the agency's workforce planning effort.

Leadership Succession Management/Knowledge Transfer

Generally, leadership succession management refers to a plan to address succession of current workers as they leave the workforce due to retirement and other factors. OPM states that agencies should ensure continuity of leadership through succession planning and executive development programs. Within this component is the recommendation that organizations ensure that knowledge is transferred from old to new leadership. We included knowledge transfer because NSF relies on IPAs from outside the federal government to fill many of its executive leadership positions, a fact which ensures substantial turnover in the executive ranks. In addition, the temporary nature of NSF's rotator model creates additional challenges in ensuring that new executives have the knowledge necessary to lead the agency.

Continuous Learning

NSF's March 2008 *Human Capital Strategic Plan* describes continuous learning as a component of effective personnel management that results in better performance, advancement, and/or enhanced capacity. We focused on the adequacy of NSF's efforts to provide two specific elements of continuous learning. These elements were the annual security awareness training mandated by federal law for all federal employees, and training that OPM requires managers and supervisors to complete within one year of their appointment to a federal job, and periodically thereafter. We selected these two elements because they are federal requirements that rotators may not be required to fulfill in the academic environment.

Employee Integrity

According to OPM, employee integrity includes ensuring that leaders maintain high standards of honesty and ethics. To this end, federal law requires all employees to complete annual ethics training. NSF also requires senior employees to file annual financial disclosure reports to identify potential conflicts of interest. In addition, OPM requires that employees complete introductory and on-going training on antidiscrimination and whistleblower protection laws as part of the Notification and Federal Employee Antidiscrimination and Retaliation Act (No FEAR Act).

Ensuring employee integrity is particularly important at NSF because of the nature of its mission to promote the progress of science. Many IPAs serve in leadership positions at NSF and make recommendations and decisions about which individuals and organizations will receive funding. This situation can create potential for conflicts of interest because many rotators come from and

return to academic organizations with research programs that receive funding from NSF.

We assessed each of these elements to determine whether NSF had the components of an effective personnel management system.

NSF Generally has the Components of an Effective Personnel Management System

Based on our limited assessment, we found that NSF generally has the components of an effective personnel management system and followed OPM and government-wide requirements. Nothing came to our attention to indicate that NSF's personnel management system was ineffective. With the exception of performance management, NSF applied the components of effective personnel management to both its permanent and temporary staff and IPAs in the same manner.

In recruiting, NSF seeks SES managerial and leadership qualifications and competencies in its executive-level staff regardless of appointment type. Application materials for executive-level positions clearly stated that managerial and leadership knowledge and experience was a requirement.⁹

NSF's *Human Capital Strategic Plan* and other human capital initiatives evidence NSF's human capital and workforce planning. NSF has stated that it is committed to becoming a model for human capital management in the federal government and has developed human capital initiatives to address the challenges of the rotating director model.

In the area of leadership succession/knowledge transfer, NSF has attempted to ensure institutional continuity and awareness of internal policies and procedures through leadership change by informally "pairing" executive-level IPAs with permanent staff. Most recently, it sought to improve overall knowledge and succession management through its *New Executive Transition* (NExT) program, intended to quickly and effectively integrate new executives.

For continuous learning, NSF provided records showing that all employees in our sample, regardless of appointment type, completed annual computer security awareness training, as required by federal law. NSF also provided a draft comprehensive training plan for executive leaders, supervisors, and managers to comply with OPM's recently released final rules requiring managers and supervisors to receive management training within one year of their appointment.

Regarding employee integrity, NSF requires both its permanent and non-permanent staff to complete annual ethics and No FEAR Act training. It also

⁹ According to NSF, the qualifications of all executive-level selectees are reviewed by the Division of Human Resources Management office and reviewed and approved by NSF's Deputy Director prior to appointment.

requires appropriate employees, including non-permanent staff, to complete annual financial disclosures. NSF recently hired an executive-level director for its Office of Equal Opportunity Programs and has made equal employment opportunity (EEO) training available to all employees. NSF stated that, as of January 2010, over 200 senior managers have attended this EEO and diversity training.

Although NSF's personnel management system is generally effective, as noted, it does not include IPAs in the performance management process.

NSF Does Not Include Rotating Executives in its Performance Management System

Unlike its career and temporary federal employees at the executive level, NSF does not include IPAs in its performance management system, even though IPAs function in the same capacity as those executives. Specifically, NSF does not require IPAs to have written performance plans, progress reports, or performance appraisals, as it does for permanent, career and temporary executives. Nonetheless, NSF expects its executives to provide strategic direction, make investment and funding decisions, oversee and monitor grant-making processes, as well as supervise and manage scientific and administrative staff. These expectations are the same regardless of whether the person performing those functions is a career or temporary employee or an IPA.

Elements of an Effective Performance Management System

Because the agency has the same performance expectations for IPA executives as it does for other executives, we assessed how NSF applies the elements of an effective performance management system for a limited sample of permanent and temporary employees and IPAs. The elements of an effective performance management system include documented performance plans, progress reports, and performance appraisals. We also looked at position descriptions for different appointment types as they can aid in an effective performance management system by establishing initial expectations.

We found that NSF provides permanent and temporary employees with position descriptions that describe their roles and responsibilities. For IPAs, this description is included in the IPA agreement between the agency and the home institution. Position descriptions for permanent and temporary employees contained more detail than those for IPAs. Since position descriptions are important tools for setting expectations, NSF may benefit from including a more detailed explanation of leadership expectations in IPA agreements. For example, the position description for a temporary Division Director specifically defined providing "leadership" as "ensuring communication, motivating staff and promoting team spirit," while the IPA agreement listed providing "leadership" as a qualification but did elaborate on what this meant.

The next step in an effective performance management system is establishing performance plans against which performance can be measured. The critical elements established in performance plans provide the basis for holding staff accountable for work assignments and responsibilities. In accordance with OPM requirements, NSF provides written performance plans to its permanent and temporary employees. OPM does not require IPAs to have performance plans and NSF does not typically provide them. As a result, the agency does not have documented standards for evaluating IPA's performance or for holding them accountable.

Progress reports and performance appraisals are the final step in an effective performance management system. While NSF does not require performance appraisals of IPAs, there was widespread internal support for providing them to IPAs. Each of the seven directorates and four science offices informed us that they verbally communicate performance expectations to IPAs, as well as discuss with IPAs their performance against those expectations, but they were not able to provide us with a written record of this communication.

Further, to put NSF's management of its IPAs in perspective, we examined how five other agencies handled performance management for IPAs. Two of the five include IPAs in their performance management process in some manner. For example, EPA requires that IPAs and their supervisors complete a written evaluation at the end of the rotational assignment which the agency keeps on file.

NSF's Division of Human Resource Management (HRM) recommended that the agency require annual performance assessments of IPAs and, to this end, provided senior management with a draft proposal in May 2005. It also proposed developing performance standards for executive-level IPAs and ensuring that new IPA agreements include performance standards. Also, the proposal recommended that supervisors of IPAs understand their responsibility to conduct annual appraisals with IPAs. This proposal also cited several potential benefits of conducting performance appraisals of IPAs. For example, it stated that appraisals would "provide valuable feedback for IPA participants and serve as a communication tool between NSF and IPA participants." NSF had not adopted these internal recommendations at the time of our audit.

In addition to the benefits noted in HRM's recommendation, including IPAs in NSF's performance management process could have other benefits for NSF's workplace environment. Because of its reliance on IPAs at the executive level, NSF needs to hold IPAs accountable for improving the agency's effectiveness in the accomplishment of agency mission and goals. At the time of our audit, six of the eleven Assistant/Science Office Directors were IPAs. Therefore, the potential impact on the workplace environment as a result of having performance appraisals for IPAs could be heightened.

As NSF does not have a written record of an IPA's performance, poor performance is not documented. Because IPAs may return to NSF in another capacity, such as a permanent employee, having a documented performance

evaluation could assist NSF in hiring decisions. Also, IPAs evaluate the performance of federal employees, yet those IPAs conducting the appraisals do not receive an evaluation. This difference could result in a perception of unfair treatment. Further, IPAs may have a greater commitment to their supervisory responsibilities if NSF documented its expectations and rated IPAs on how well they met those expectations.

Rotating Executives Generally Do Not Have a Working Knowledge of Federal Government Culture and Management Processes

NSF's rotating director model is important in bringing the agency experience in cutting edge science and fresh ideas in organizational approach. IPAs generally have not worked in the federal government and therefore, are often not familiar with government rules and administrative processes in the federal workplace.

Both rotators and permanent staff stated that training for rotators should include explaining the government culture and work environment. During our interviews, rotating directors noted several areas where they believed that training and orientation about federal government culture and management processes would have been beneficial for them. For example, one rotating Division Director stated that he did not know that one of his responsibilities was to conduct employees' mid-term reviews. He learned about this process on-the-job because NSF does not offer training delineating that performance reviews must be done or how to do them. Another rotating director stated that frequently rotators came to NSF as "little entrepreneurs" and did not receive orientation to educate them about how government processes may differ from other work environments. Each of the rotating directors cited the importance of having a permanent staff person who assisted them in understanding NSF's culture and processes. To this end, NSF attempts to pair a non-permanent executive with an experienced career executive, which contributes to the new executive's transitioning.

In addition to these areas, our interviews also demonstrated the need for training to address rotators' lack of familiarity with government processes such as approving leave and travel, the budget process, and monitoring time and attendance. Rotators also stressed the importance of having such training as soon as they assume their positions at NSF.

Based on these concerns, effectively preparing its rotating executives for the federal government workplace could address some of NSF's long-standing workplace issues. Existing training requirements for career employee development may not be sufficient for preparing IPAs to perform federal government processes within the federal government culture. NSF does periodically offer training on some of its management and administrative process that is available to all employees. However, new executives are not required to take this training.

NSF has recognized this need and is developing the NExT program specifically to address some of the challenges associated with the rotational director model. The primary purpose of this program is to effectively integrate new executive staff into the agency. Future components include checklists, training, and other resources expected to help new executives more quickly recognize and perform their major roles and responsibilities.

At the time of our audit, NSF had implemented one component of the NExT program, the Executive Resources Website. The website is an interactive handbook for new executives that contains human resource and leadership information, including information regarding performance management, recruitment, and equal opportunity and diversity. The agency is collecting usage statistics and comments about this website.

In addition, NSF has ongoing pilot programs that include knowledge management and leadership training, such as leadership and problem-solving skills training and performance management workshops. The agency plans to launch other NExT program components, including executive coaching, within the next few months. As NSF is still developing these components of the program, we have not attempted to determine their effectiveness. Because a substantial number of NSF new executives are IPAs coming from outside of the federal government, NSF should ensure that the training intended to integrate new executives into the agency contains enough information to orient IPAs with unfamiliar management processes.

Recommendations

NSF recognizes the challenges to effective personnel management involved in having a rotating workforce and is committed to improving its human capital management. We recommend that the NSF Director:

1. Create and document a performance management process appropriate for IPAs. Such a process does not have to be the same as the process for federal employees but should include:
 - establishing a formal performance assessment policy and practice that requires annual performance assessments for IPAs and some form of documentation that the assessments occurred;
 - developing IPA performance standards for both program-level and executive-level IPAs;
 - ensuring that each new IPA agreement includes an attached set of performance standards;
 - ensuring that supervisors of IPAs understand their responsibility to conduct annual appraisal discussions with all IPA assignees; and
 - ensuring that each new IPA agreement contains sufficient detail to convey expectations of the position.
2. Ensure that NSF continues its efforts to implement an appropriate process for integrating new executives into the agency sufficient to orient IPAs with unfamiliar management processes.

Agency Response

NSF agreed with our recommendations and in its response, indicated that it has already taken steps towards developing and implementing a performance management process for all IPAs similar to that for federal employees.

We have included NSF's response to this report in its entirety as Appendix A.

OIG Contact and Staff Acknowledgements

Karen Scott - Senior Audit Manager
(703) 292-7966 or kscott@nsf.gov

In addition to Ms. Scott, Susan Carnohan, Kelly Stefanko, and Gina Zdanowicz made key contributions to this report.

Appendix A: Agency Response

NATIONAL SCIENCE FOUNDATION
4201 WILSON BOULEVARD
ARLINGTON, VIRGINIA 22230



March 29, 2010

TO: James Noeth, Acting Associate Inspector General for Audit, NSF Office
of the Inspector General

FROM: Cora B. Marrett, ^{CMM}Acting Deputy Director, National Science Foundation

SUBJECT: Audit of NSF's Workforce Management: Rotating Director Model

Thank you very much for providing us the opportunity to review and provide comments on the official draft report for the OIG audit: *NSF's Workforce Management: Rotating Director Model*.

We are pleased that your assessment supports the conclusion that NSF is acting in accordance with OPM and government-wide requirements. We believe the approach designed by your staff to further their analysis -- first identifying components of an effective personnel management system and then analyzing NSF's practices against those components -- provided important information that will enhance NSF's performance in this area. We are also pleased with your conclusion that NSF generally has all the components of effective practice in its personnel management system.

Although rotators assigned to NSF under Intergovernmental Personnel Act (IPA) authority are not federal employees, we agree with your Recommendation #1 that there should be a performance management process for the rotating IPA executives similar to that for federal employees. In fact, on February 16, 2010, NSF Senior Management endorsed developing a performance management process for all IPA rotators that is consistent with that for federal employees. The NSF Performance Review Board has been tasked to develop the process and a plan for its implementation. We also appreciate your recognition of the work NSF has done to prepare rotating executives of all types for their executive positions, and agree with your Recommendation #2 that NSF should continue to improve and implement these efforts.

We very much thank you and your staff for the work they have done in conducting this audit toward our common goal of ensuring that NSF is effective in fulfilling its mission.

cc: Allison Lerner
Karen Scott

Appendix B: Objective, Scope, and Methodology

The Senate Committee Report accompanying NSF's 2010 appropriations bill requested that the OIG provide a report assessing NSF's rotating director model. The objective of this audit was to determine if NSF has a rotator model in place that ensures effective personnel-management performance and oversight at its executive level. In making this determination, we obtained listings of staff in each of NSF's directorates, and the Offices of Polar Programs, Cyberinfrastructure, and International Science and Engineering as of September 11, 2009, to identify NSF's workforce structure at a particular point in time. Additionally, we obtained staff listings for NSF's Office of Integrative Activities and the non-science offices as of October 23, 2009. We focused our audit efforts on NSF's executive-level staff, not only because of their critical and broad affect on the organization in setting strategy, managing, and providing leadership, but also because a significant number of NSF executives are not permanent staff.

Personnel management and the use of rotators at NSF has been the subject of several prior reports and studies, both internal and external to NSF. We reviewed these reports to obtain insights pertinent to our audit objective. (See Appendix D for a description of these reports.) We also researched and reviewed federal laws and regulations, and NSF policies and procedures addressing personnel management.

To establish a framework for assessing NSF's personnel management system, we reviewed relevant scholarship that identified the components of an effective personnel management system, with particular focus on elements that directly affect individuals. This scholarship included guidance from the Office of Personnel Management, the Government Accountability Office, and human resource professional associations. (See Appendix E for a description of the scholarship.) We ultimately limited our definition of effective personnel management to encompassing six elements: employee integrity, recruitment, performance management, continuous learning, leadership succession management/knowledge transfer, and human capital and workforce planning. We discussed these components with NSF officials, and obtained their concurrence that these were reasonable criteria for our use in comparing how NSF's managed its permanent and non-permanent staff.

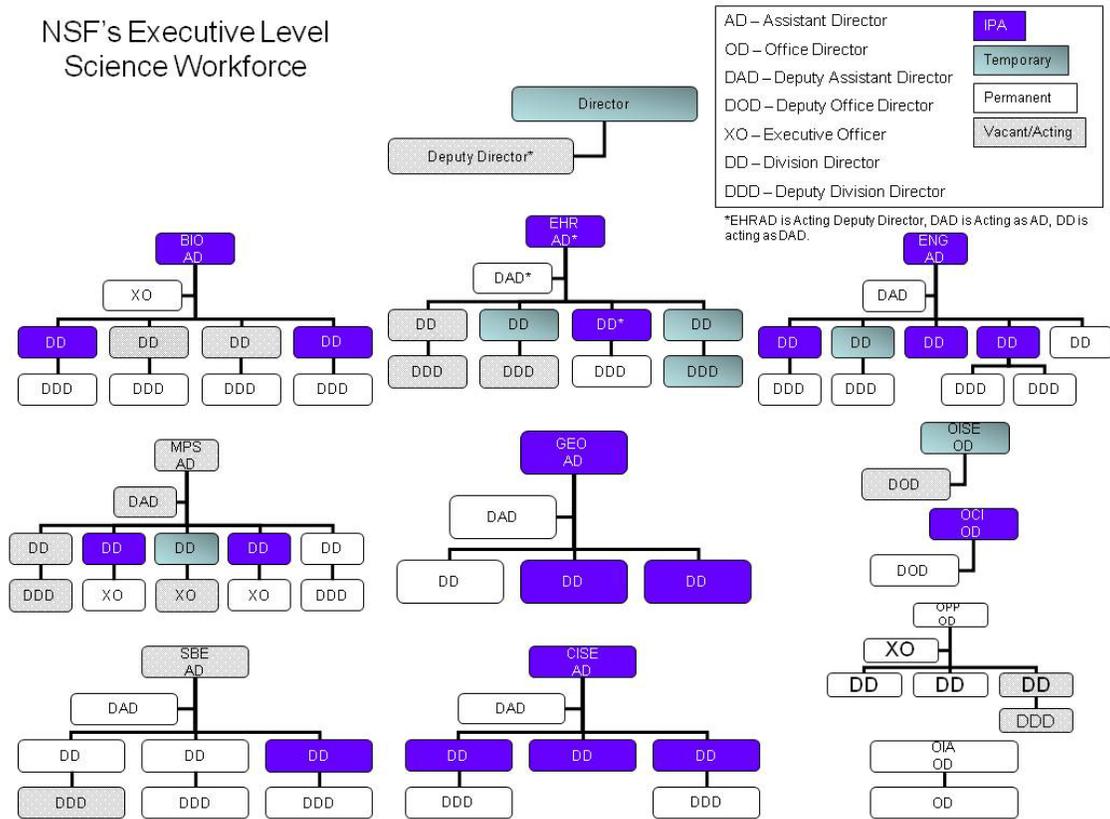
Within our defined framework, we assessed the extent to which NSF incorporated these elements into its personnel management processes. We reviewed relevant NSF policies and procedures and interviewed permanent and rotating NSF personnel, as well as Division of Human Resource Management officials and staff, to gain a variety of perspectives on the role, challenges and satisfaction of NSF's workforce structure. We also selected a small judgmental sample of permanent and non-permanent executives from our listing of Assistant/Science Office Directors, Deputy Assistant Directors/Executive Officers, Division Directors, and Deputy Division Directors/Executive Officers. For these executives, we reviewed files and documents related to their

recruitment, performance, and training, and compared the documents to determine, on a limited basis, the extent to which NSF incorporated the elements into its processes, and the general effectiveness of its personnel management system. Finally, we identified five other federal agencies that use IPAs and obtained information on the roles of IPAs at those agencies.

We conducted this performance audit between September 2009 and March 2010, in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective.

Appendix C: Illustration of NSF's Executive-Level Science Workforce

NSF's Executive Level Science Workforce



Directorates, OPP, OCI, and OISE data as of 9/11/09, non-science offices and OIA data as of 10/23/09.

Appendix D: Assessments of NSF's Use of Rotators

NSF's Action Plan on "NSF Employee Satisfaction and Wellness Initiatives," September 2009

NSF employees are asked to assess the Foundation's human capital management on a bi-annual basis via the Federal Human Capital Survey, which has been administered government-wide since 2002. OPM has used the results of the 2006 and 2008 surveys to provide agencies with feedback about employee perceptions regarding its human capital initiatives. In response to memoranda from OPM, NSF provided an overview of its action plan and targets for improving employee satisfaction and employee wellness, which was also included in its FY 2011 budget submission to Office of Management and Budget (OMB). NSF stated that effective implementation of the action plan would be a critical step in achieving its goals of being a model federal agency for human capital management. NSF stated that establishing clear expectations for rotators in fulfilling their responsibilities as managers, as well as providing training to help ensure their effectiveness in their roles would be a critical consideration in the overall management training program that it plans to provide.

Senior Executive Leadership at the National Science Foundation: Investing in our Future, A Report to the Chief Operating Officer, May 15, 2007

The NSF Executive Resources Board (ERB) is a representative group of senior executives established by the Director for the development and administration of a systematic program for managing the Foundation's executive resources. Specifically, it is responsible for developing and recommending policy and formulas regarding SES performance management, pay, bonuses and awards for NSF executives. In 2007, the ERB studied NSF's executive leadership and recommended that the science directorates identify back-up senior leaders, conduct succession planning and training, and complete development of a comprehensive executive orientation program.

Proposal for IPA Performance Assessment Process, May 2005

In May 2005, NSF's Division of Human Resources Management provided senior management a draft proposal recommending that the agency annually assess IPA performance. Specifically, it called for a performance management process to include (1) establishing a formal performance assessment policy and practice that requires annual performance assessments for IPAs, (2) developing IPA performance standards for both program level and executive level IPAs, (3) ensuring that each new IPA agreement includes an attached set of performance standards, and (4) ensuring that supervisors of IPAs understand their responsibility to conduct annual appraisal discussions with all IPA assignees. This proposal cited several potential benefits of conducting performance appraisals of IPAs. NSF had not adopted these internal recommendations at the time of our audit.

NSF Use of the Intergovernmental Personnel Act, August 2004

In the conference report accompanying the 2004 Consolidated Appropriations Act (Public Law 108-199), Congress requested that the U.S. Office of Personnel Management conduct a review of NSF policies and practices regarding its use of rotators. Specifically, the conferees requested that OPM focus on areas including the percentage of the NSF professional workforce staffed through temporary appointment, and the use of temporary appointments to staff the most senior positions at NSF. Among other things, OPM expressed concerns about the impact of rotators on continuity of leadership and on the balance between IPAs and career employees.

National Science Foundation: Governance and Management for the Future, April 2004

The Report from the Committee on Appropriations accompanying NSF's FY 2003 House appropriations bill (H.R. 5605) called for an independent study of NSF to address four organizational and management issues, one of which being using rotators in key positions, relevant to NSF's projected growth. The National Academy of Public Administration (NAPA), who performed the study, reported that NSF faces operational challenges in using rotators in key positions but recommended that NSF continue to use rotators in the positions of program officers, managers, and assistant directors. The report suggested that NSF balance the number of rotators and permanent employees based on its experience and the specific requirements of individual positions and recommended that NSF establish and support an ongoing management and executive level knowledge-sharing program to ensure that key NSF permanent employees and rotators are current in their knowledge of contemporary management tools as well as the evolving cultures of NSF and the research community.

Appendix E: Personnel Management Scholarship

Human Capital Forum – Principles, Criteria, and Processes for Governmentwide Federal Human Capital Reform, 2004

In April 2004, the Government Accountability Office (GAO) hosted a forum with the National Commission on the Public Service Implementation Initiative to discuss developing a government wide framework for human capital reform. The participants in the forum developed principles, criteria, and processes which ultimately served as a starting point for this framework.

Title 5 Code of Federal Regulations

The Code of Federal Regulations (CFR) is an annual codification of the general and permanent rules published in the Federal Register by the executive departments and agencies of the federal government. Title 5 – Administrative Personnel, Part 250 – Personnel Management in Agencies are the federal government’s requirements for human resources management practices. These require the agency to maintain a current human capital plan, provide OPM an annual Human Capital Management Report, and conduct an annual survey of its employees (the results of which must be available to the public and posted on its web site).

Additionally, Title 5 CFR mandates government-wide training in the areas of (1) computer security awareness (Title 5 CFR §930.301-305), (2) ethics (Title 5 CFR §2638.703 and 704), and (3) executives, managerial, and supervisory development (Title 5 CFR Part 412).

OPM Final Rules on Training; Supervisory, Management, and Executive Development, 2009

In December 2009, OPM released 5 CFR Parts 410 and 412 to “implement certain training and development requirements contained in the Federal Workforce Flexibility Act of 2004 and to make other revisions in OPM regulations. The Act makes several significant changes in the law governing the training and development of Federal employees, supervisors, managers, and executives.”

5 USC Chapter 43 Subchapter II – Performance Appraisal in the Senior Executive Service

Chapter 43 of title 5, United States Code, provides for performance management for the Senior Executive Service (SES), the establishment of SES performance appraisal systems, and appraisal of senior executive performance. 5 USC Chapter 43 also establishes criteria for the SES performance appraisal system.

Human Capital Assessment and Accountability Framework

As the government wide leader for strategic human capital management, OPM is responsible for and has set a framework for a set of systems, including standards and metrics, for assessing the management of human capital by federal agencies -- the *Human Capital Assessment and Accountability Framework* (HCAAF). The HCAAF evolved from a set of Human Capital standards, issued by OPM in 2002, which were developed through a collaborative effort among OPM, OMB, and GAO.

The HCAAF *Practitioners' Guide* contains 6 sections, each of which is comprised of various critical success factors, which are broken down into key elements for which suggested performance indicators are provided. The Guide serves as the basis for agency strategic human capital management accountability systems that meet OPM requirements.

Introduction to the Position Classification Standards, 2009

OPM's *Introduction to the Position Classification Standards*, most recently revised in August 2009, provides "background information and guidance regarding the classification standards for General Schedule work. It describes the fundamental policies which Federal managers, supervisors, and personnel specialists need to understand in using classification standards to determine the series, titles, and grades of positions." The Introduction sets forth basic principles and policies regarding position classification, including the use of position descriptions.

Guide to Senior Executive Service Qualifications, 2006 and Senior Executive Service Recruitment and Selection

In 2006, OPM completed a review of the Executive Core Qualifications (ECQs) and updated the *Guide to the Senior Executive Service Qualifications*. The changes included development of fundamental competencies, revisions to ECQ-specific competencies, a modified definition of each ECQ, and removal of the key characteristics. "In addition to helping applicants, the *Guide* will be useful to individuals charged with reviewing executive qualifications, including agency personnel and executive development specialists and members of agency Executive Resources Boards." Additionally, OPM's website provides for information about recruitment and selection in the Senior Executive Service, including information about merit staffing and hiring options.

No Fear Act

Based on its belief that that federal agencies cannot be run effectively if they practice or tolerate discrimination, Congress established the "Notification and Federal Employee Antidiscrimination and Retaliation Act of 2002" (No Fear Act). The No Fear Act requires that federal agencies be accountable for violations of antidiscrimination and whistleblower protection laws. Additionally, it requires that each federal agency post certain statistical data relating to federal sector equal

employment opportunity complaints filed with such agency quarterly on its public web site. NSF mandates No Fear Act training for its federal employees and IPAs.