



SCIENCE & TECHNOLOGY POLICY INSTITUTE

Federal Personnel Exchange Mechanisms

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Executive Summary

Several Federal Government mechanisms allow rotation of external technical talent into the government and vice versa. The White House Office of Science and Technology Policy asked the IDA Science and Technology Policy Institute (STPI) to conduct research on these mechanisms and to:

- Explain currently available personnel exchange mechanisms, particularly those open to for-profit organizations;
- Discuss the exchange process at different organizations;
- Describe the roles exchange personnel fulfill;
- Discuss the potential benefits of personnel exchanges;
- Identify barriers to utilizing personnel exchange mechanisms; and
- Present policy options for improving existing mechanisms or creating new ones.

STPI's research found that personnel exchanges provide myriad benefits for exchangees, destination organizations, and home organizations. Currently, however, there are inherent barriers to the movement of personnel.

Approach

This project involved reviewing literature and legal documents, and engaging various stakeholders in the personnel exchange system to explore the available mechanisms and identify potential improvements. The STPI research team found a number of reports prepared by government entities that primarily focused on barriers to personnel exchanges. The research team also examined statutes and regulations governing personnel exchange mechanisms.

STPI researchers interviewed 26 stakeholders from a variety of Federal agencies and organizations. Stakeholders included (1) human resources personnel responsible for managing personnel exchange programs, (2) policy personnel overseeing exchange programs, and (3) individuals who have participated in an exchange. Discussions covered a range of topics, including available mechanisms, roles and benefits, process, barriers and strategies, and policy suggestions and recommendations. A forum was also held with human resources and managing personnel from five science and technology (S&T) companies to explore options for an industry exchange. The following table provides characteristics of a variety of available personnel exchange mechanisms.

Characteristics of Available Personnel Exchange Mechanisms

Name	Authorized Agency	Permitted Roles	Direction of Exchange	Allowed Participants	
AAAS Science and Technology Fellowships	15 and Congress	Depends on hiring mechanism	External employee to U.S. Government	For-profit, nonprofit, universities, and non-Federal Government agencies, but depends on hiring mechanism	
Consultants or Expert Appointments	All	Advisory and research	External employee to U.S. Government	For-profit, nonprofit, universities, and non-Federal Government agencies	
Cooperative Research and Development Agreement (CRADA)	All	Research	Both	For-profit, nonprofit, universities and other government agencies	
Department of Energy (DOE) Change of Station	DOE	—	Laboratory contractor to non-Federal organization	Any non-Federal organization, including for-profits and nonprofits	
AI.	Detail*	All	Advisory, research, leadership, policy-making/regulatory, program management/source selection, and operational support	Within U.S. Government	Federal employees
Department of Homeland Security (DHS) Loaned Executive Program	DHS	Advisory	External employee to U.S. Government	For-profits, nonprofits, Universities, and non-Federal Government agencies	
Industry Training Programs	All	Research	Federal employee to external organization	Federal employees to industry	
Information Technology Exchange Program (ITEP)	ITEP #1: DOC, DOD, DHS, DOJ, FBI, HHS, OPM, and Treasury ITEP #2: DOD	Advisory, research, support policy-making/regulatory, operational support	Both	For-profits, nonprofits, universities, and other government agencies	

Name	Authorized Agency	Permitted Roles	Direction of Exchange	Allowed Participants
Intergovernmental Personnel Act (IPA) Appointment	All	Advisory, research, leadership, policy-making/regulatory, program management/source selection, and operational support	Both	Nonprofits, universities, Federal and other government agencies
IPA Detail	All	Advisory	Both	Nonprofits, universities, Federal and other government agencies
Federal Advisory Committees	All	Advisory	External employee to U.S. Government	For-profits, nonprofits, universities and non-Federal Government agencies; excluding lobbyists
State Department and U.S. Agency for International Development (USAID) Franklin Fellows Program	State and USAID	Advisory, research, and support policy-making	External employee to U.S. Government	For-profits, nonprofits, and universities
Military Reservists	DOD	Advisory, research, leadership, policy-making/regulatory, program management/source selection, and operational support	External employee to U.S. Government	Reservists working at for-profits, nonprofits, universities, Federal and other government agencies
NSF Visiting Scientists, Engineers and Educators Program (VSEE)	NSF	Advisory, research, leadership, policy-making, and program management	External employee to U.S. Government	For-profits, nonprofits, universities, and non-Federal Government agencies
DOE National Laboratory Entrepreneurial Leave Programs	DOE	Commercialization	Federal employee to external organization	Employees of participating DOE national laboratories
DOD Visiting Researcher Opportunities	DOD	Research	External employee to U.S. Government	Full-time faculty researchers at higher education institution

**"Detail" is also used to denote individuals on an Intergovernmental Personnel Act detail. For the purposes of this report, these are referred to as IPA detail or IPA detailee.

AAAS = American Association for the Advancement of Science
DHS = Department of Homeland Security
DOC = Department of Commerce
DOD = Department of Defense

DOE = Department of Energy
DOJ = Department of Justice
FBI = Federal Bureau of Investigation
HHS = Health and Human Services

NSF = National Science Foundation
OPM = Office of Personnel Management

Process

The length and complexity of the personnel exchange process depends on the agency and the type of mechanism used. Some agencies and organizations have dedicated personnel to guide individuals through the exchange application process and handle the paperwork; in others, the employees are completely on their own. One oft-cited grievance by interviewees was the length and complexity of the application process. Those who received assistance from personnel devoted to facilitating exchanges were less likely to voice this complaint, however.

Benefits

Exchanges have been described as a “triple win” for the destination organization, the exchangee, and the home organization. According to the interviews, they can also serve as a conduit for technology transfer between the government and the U.S. private sector. Many of the interviewees agreed that a primary benefit for the government as a destination organization is to fill in gaps in expertise and knowledge. In addition, an exchange may be less expensive than hiring a full-time Federal employee at comparable levels of education and expertise. In other cases, the organization is specifically served through the periodic influx of fresh ideas and talent. Temporary personnel may also be used to fill in during civilian staff shortages and military surges. In some unique situations, the exchangee can actually serve as the source of institutional knowledge and continuity. Providing an external viewpoint can also be valuable to the destination organization.

The principal advantage for the exchangees themselves is the exposure to a different organization’s processes and structures. Exchangees learn new skills, which, upon their return to their home organizations, can improve their job performance. Such exchanges can also help retain employees by allowing them to experience external career growth while remaining employed by their home organizations.

Challenges and Strategies

A number of challenges and strategies related to personnel exchange mechanisms were identified in the literature and discussions. Logistical and cultural barriers include challenges associated with initiating and implementing an exchange, resource constraints, cultural tension, and post-exchange transition difficulties. Multiple reports highlighted the lack of awareness of exchange opportunities and ineffective advertisement to both government personnel and outside organizations. In addition, almost every person interviewed cited the length and complexity of the application process as a major barrier. Strategies for overcoming these barriers include actively advertising exchange

opportunities, having personnel devoted to facilitating exchanges, and issuing a handbook that clearly explains the process and applicable rules.

The literature and a number of interviewees said that resource constraints were a barrier to exchanges. One method for overcoming resource constraints is to establish exchanges that are reciprocal to ensure that organizations maintain the same number of employees. There can also be tension between exchangees and personnel at the destination organization. Increased training and communication regarding the benefits of personnel exchanges could serve to alleviate some cultural tension. Evidence about what impact an exchange had on an employee's career once he returned to his home organization was mixed. Sandia developed a workable strategy to ensure the impact was positive by actively managing the exchangees and beginning work on a transition plan for the employee 6 months before the end of the exchange.

A number of legal and regulatory requirements intended to prevent financial conflicts during and after a personnel exchange can impede personnel exchanges. Most exchangees are required to follow the same Federal ethics requirements, including conflict-of-interest provisions, as Federal employees. Exchangees, like Federal employees, are prohibited from personally and substantially participating in a particular matter that will have a direct and predictable effect on their financial interest or a financial interest that is imputed to them (18 U.S.C. § 208). There are a number of regulatory exemptions to the conflict-of-interest statute for certain employee benefit plans or small holdings of stocks and securities (among others, 5 CFR 2640.201–202). In addition, a conflict of interest only exists if the exchangee is directly involved in an agency matter involving the company, nonprofit organization, or university in which he holds a financial interest. Regardless, exchangees are required to disclose all financial interests before beginning an exchange. DOD's strategy for dealing with conflict of interest for reservists involves a screening for conflict of interest and briefings on the legal requirements under the Uniform Code of Military Justice (UCMJ).

Organizational conflicts of interest arise when a person is deemed unable to render impartial assistance to the government, the person's objectivity may be impaired, or the person may have an unfair advantage. There is a perception that sending an exchangee to a government organization or accepting a government exchangee into its organization will preclude the business or university from receiving grants or contracts in the future. In reality, this is not the case. The individual exchangee is certainly not to be involved in any reviews of proposals from his or her home organization, but the organization is otherwise permitted to continue engaging with the government. NSF, for example, has developed procedures for ensuring that its IPA and Visiting Scientists, Engineers and Educators (VSEE) participants are not engaged in any reviews involving their home organization. The Department of State takes a more conservative approach with private sector personnel and the Franklin Fellows

Program, however, and determines whether there are any contracts outstanding between the company and the Department before proceeding further.

Post-employment restrictions apply to all former “employees” of the Federal Government, including exchangees (18 U.S.C. § 207 and 5 CFR § 2641). Additional restrictions may attach for service in certain agencies or depending on the salary and seniority of the individual involved in the exchange. The Federal Government has a limited amount of discretion in waiving these post-employment restrictions under certain circumstances. These restrictions can have a negative impact on employees’ careers when they return to their home organization.

Policy Options

A number of policy options for improving Federal personnel exchange mechanisms were identified by interviewees and forum participants, including:

- Provide high-level executive encouragement and support for personnel exchanges
- Streamline agreement packages and processes and issue exchange procedure manuals
- Publish exemplar conflict-of-interest informational briefings and management practices
- Establish a government-wide central repository for listing opportunities and required paperwork
- Engage larger groups at each agency for a collective sense of commitment to an exchange program
- Establish agency-wide personnel exchange funds
- Make a commitment to employees participating in exchanges that career trajectory will remain intact (subject to any post-exchange restrictions)
- Explore the easing of post-employee restrictions for exchangees
- Develop three-party agreements between government agency, employee and lending organization that ensure all interests are protected
- Replicate for industry personnel the existing exchange mechanisms and related incentives that are available to nonprofit and academic personnel, as appropriate

One possibility for the last policy option is to develop a legislative proposal for a pilot program for industry STEM rotators within the DOD or throughout the government.

Contents

A.	Introduction	1
B.	Approach	1
C.	Available Mechanisms	2
1.	Detail	6
2.	Intergovernmental Personnel Act	7
3.	AAAS Science and Technology Policy Fellowships	8
4.	Military Reservists	9
5.	Consultants or Expert Appointments	9
6.	NSF Visiting Scientists, Engineers and Educators Program	12
7.	Industry Training Programs	12
8.	Information Technology Exchange Program	13
9.	Department of Energy Laboratory Entrepreneurial Leave Programs	14
10.	Department of Defense Visiting Researcher Opportunities	14
D.	Process	15
E.	Benefits	17
1.	For Destination Organization	17
2.	For Exchangee	18
3.	For Home Organization	19
F.	Challenges and Strategies	19
1.	Logistical and Cultural	19
2.	Legal and Regulatory Barriers	21
3.	Concerns over Exploitation of Exchanges	25
G.	Policy Options	25
	Appendix A. Discussion Guide	A-1
	Appendix B. Interviewees	B-1
	Appendix C. Key Issues for STEM Industry Exchange Legislation	C-1
	Appendix D. Post-Exchange Restrictions	D-1
	References	E-1
	Abbreviations	F-1

A. Introduction

The Federal Government science and technology enterprise has a number of mechanisms to rotate external technical talent into the government and vice versa. The White House Office of Science and Technology Policy asked the IDA Science and Technology Policy Institute (STPI) to conduct research on these mechanisms and to:

- Explain currently available personnel exchange mechanisms, particularly those open to for-profit organizations.
- Discuss the exchange process at different organizations.
- Describe the roles exchange personnel fulfill.
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- Identify barriers to utilizing personnel exchange mechanisms.
- Present policy options for improving existing mechanisms or creating new ones.

STPI's research found that personnel exchanges provide myriad benefits for exchangees, destination organizations, and home organizations. Currently, however, there are inherent barriers to the movement of personnel.

B. Approach

This project involved reviewing literature and legal documents, and engaging various stakeholders in the personnel exchange system to explore the available mechanisms and identify potential improvements. The STPI research team found a number of reports prepared by government entities, such as Congressional Research Service (CRS), Government Accountability Office (GAO), Office of Personnel Management (OPM), and Department of Energy (DOE). These primarily focused on barriers to personnel exchanges, including (1) lack of awareness of exchange opportunities and ineffective advertisement to both Government personnel and outside organizations (GAO 2006; OPM 2010; Butz et al. 2004); (2) resource constraints, including unwillingness to give up valued personnel (OPM 2010; GAO 2006); and (3) uncertainty over impact on one's career and transition back to original organization (DOE 2007). The research team also examined statutes and regulations governing personnel exchange mechanisms.

The team interviewed 26 people from a variety of Federal agencies and organizations. To gather the widest possible perspective, the team sought to speak with a cross section of stakeholders: (1) human resources personnel responsible for managing personnel exchange programs, and (2) policy personnel overseeing exchange programs, (3) individuals who have participated in an exchange. Human resources and policy stakeholders provide in-depth understanding of the regulatory and administrative processes behind exchange-

personnel recruitment, selection, relocation, roles, compensation, and return to home organization. Exchange participants are able to describe the benefits and challenges they encountered while participating in exchange programs. The team also contacted a number of members of the Interagency Information Technology Exchange Program Council (ITEP) to gain insight into their experience establishing a new exchange mechanism and barriers that arose during its implementation. Discussions covered a range of topics including available mechanisms, roles and benefits, process, barriers and strategies, and policy suggestions and recommendations. Lastly, a forum was held with human resources and managing personnel of five S&T companies to explore options for an industry exchange. Representatives from DuPont, Lockheed Martin, IBM, Honeywell, and General Atomics attended the discussion.

Appendix A provides the discussion guides, and Appendix B lists discussion and forum participants.

C. Available Mechanisms

A number of personnel exchange mechanisms are currently available. They vary along several parameters, such as which agencies are authorized to use them. For example, the Intergovernmental Personnel Act (IPA) mobility program is open to all agencies, but the Visiting Scientists, Engineers and Educators (VSEE) Program is only available to the National Science Foundation (NSF). In addition, some exchange mechanisms are available only to Federal employees (e.g., Detail); a few are also open to nonprofit, university, and other government agency employees (e.g., IPA); and some are available to for-profit employees as well (e.g., the Department of Homeland Security [DHS] Loaned Executive Program).

Personnel exchange mechanisms allow Federal employees to work in external organizations, external employees to serve in the Federal Government, or both. Table 1 shows the agency participants allowed to use various mechanisms. Federal exchanges serve in a number of roles, including:

- *Advisory*—providing advice and recommendations based on insight and technical expertise, but hold not decision making authority.
- *Research*—performing research and engineering critical to the defense, health, and economic security of the Nation
- *Leadership*—making leadership and management decisions relative to research and development and processes surrounding the laboratories and other science and technology agencies
- *Policy-making and regulatory*—developing technically informed policies and regulations

- *Program management and source selection*—serving as “smart buyers” of goods and services (including research and acquisition of technically complex systems) from public and private entities on behalf of the U.S. Government
- *Operational support*—performing technically informed operational duties in support of Federal missions or providing assistance during disaster emergencies (Walker 2012; Defense Science Board 2012; DeYoung 2009)

Depending on the mechanism, exchangees can serve in some or all of the roles listed above. Table 1 provides examples of exchange mechanisms and associated characteristics. The following sections describe selected mechanisms in more detail, including the history and statutory and regulatory authority.

Table 1. Characteristics of Available Personnel Exchange Mechanisms

Name	Authorized Agency	Permitted Roles	Direction of Exchange	Allowed Participants
AAAS Science and Technology Fellowships	15 and Congress	Depends on hiring mechanism	External employee to U.S. Government	For-profit, nonprofit, universities, and non-Federal Government agencies, but depends on hiring mechanism
Consultants or Expert Appointments	All	Advisory and research	External employee to U.S. Government	For-profit, nonprofit, universities, and non-Federal Government agencies
Cooperative Research and Development Agreement (CRADA)	All	Research	Both	For-profit, nonprofit, universities and other government agencies
Department of Energy (DOE) Change of Station	DOE	—	Laboratory contractor to non-Federal organization	Any non-Federal organization, including for-profits and nonprofits
Detail*	All	Advisory, research, leadership, policy-making/regulatory, program management/source selection, and operational support	Within U.S. Government	Federal employees
Department of Homeland Security (DHS) Loaned Executive Program	DHS	Advisory	External employee to U.S. Government	For-profits, nonprofits, Universities, and non-Federal Government agencies
Industry Training Programs	All	Research	Federal employee to external organization	Federal employees to industry
Information Technology Exchange Program (ITEP)	ITEP #1: DOC, DOD, DHS, DOJ, FBI, HHS, OPM, and Treasury ITEP #2: DOD	Advisory, research, support policy-making/regulatory, operational support	Both	For-profits, nonprofits, universities, and other government agencies

Name	Authorized Agency	Permitted Roles	Direction of Exchange	Allowed Participants
Intergovernmental Personnel Act (IPA) Appointment	All	Advisory, research, leadership, policy-making/regulatory, program management/source selection, and operational support	Both	Nonprofits, universities, and Federal and other government agencies
IPA Detail	All	Advisory	Both	Nonprofits, universities, and Federal and other government agencies
Federal Advisory Committees	All	Advisory	External employee to U.S. Government	For-profits, nonprofits, universities and non-Federal Government agencies; excluding lobbyists
State Department and U.S. Agency for International Development (USAID) Franklin Fellows Program	State and USAID	Advisory, research, and support policy-making	External employee to U.S. Government	For-profits, nonprofits, and universities
Military Reservists	DOD	Advisory, research, leadership, policy-making/regulatory, program management/source selection, and operational support	External employee to U.S. Government	Reservists working at for-profits, nonprofits, universities, and Federal and other government agencies
NSF Visiting Scientists, Engineers and Educators Program (VSEE)	NSF	Advisory, research, leadership, policy-making, and program management	External employee to U.S. Government	For-profits, nonprofits, universities, and non-Federal Government agencies
DOE National Laboratory Entrepreneurial Leave Programs	DOE	Commercialization	Federal employee to external organization	Employees of participating DOE national laboratories
DOD Visiting Researcher Opportunities	DOD	Research	External employee to U.S. Government	Full-time faculty researchers at higher education institutions

*"Detail" is also used to denote individuals on an Intergovernmental Personnel Act detail. For the purposes of this report, these are referred to as IPA detail or IPA detailee.

AAAS = American Association for the Advancement of Science
DHS = Department of Homeland Security
DOC = Department of Commerce
DOD = Department of Defense

DOE = Department of Energy
DOJ = Department of Justice
FBI = Federal Bureau of Investigation
HHS = Health and Human Services

NSF = National Science Foundation
OPM = Office of Personnel Management
USAID = U.S. Agency for International Development

1. Detail

A detail is an arrangement for Federal employees to be assigned to workstations other than their home institutions.¹

Details; within Executive or military departments (a) The head of an Executive department or military department may detail employees among the bureaus and offices of his department, except employees who are required by law to be exclusively engaged on some specific work (5 U.S.C. § 3341(a)).

Details may be used by any Federal agency or military department to send employees to another Federal agency or military department. According to statute, details can last for only 120 days, with the option of renewal for an additional 120 days (5 U.S.C. § 3341(b)(1)). Federal employees can also rotate to another agency through an interagency Memorandum of Understanding (MOU).

Since these are Federal employees rotating into another Federal agency or military department, there are no limitations on roles they can fill, but they must abide by the same Federal employment restrictions as in their regular positions. A number of provisions govern the behavior of Federal employees, including:

- 5 U.S.C. Chapter 73 (employment limitations, political activities, foreign gifts and decorations, gifts from prohibited sources, gifts between employees, certain kinds of misconduct, and drug and alcohol abuse).
- The Ethics in Government Act (financial disclosure and outside earned income limitations).
- Section 27 of the Office of Federal Procurement Policy Act (procurement integrity).
- 18 U.S.C. §§ 203, 205, 207, 208, and 209 (the criminal conflict of interest statutes).
- 18 U.S.C. §§ 602, 603, 606, 607, 643, and 654 (political contributions, accounting for public money, and conversion of property).
- 18 U.S.C. §§ 1905 and 1913 (disclosure of confidential information and lobbying with appropriated moneys).
- 31 U.S.C. §§ 1343, 1344, and 1349(b) (passenger motor vehicle and aircraft purchase and use).

¹ In this report, “detail” is also used to denote individuals on IPA assignment (e.g., IPA detail or IPA detailee).

2. Intergovernmental Personnel Act

The Intergovernmental Personnel Act of 1970 (Public Law 91-648, codified at 5 U.S.C. §§ 3371–3375) established the Intergovernmental Personnel Act (IPA) mobility program mechanism. An IPA agreement is a temporary assignment of personnel between the Federal Government and State and local governments, institutions of higher education, Indian tribal governments, and other eligible organizations. Other organizations include State or local governments, associations of State or local public officials, nonprofits, and Federally Funded Research and Development Centers. The list of certified “other organizations” includes hospitals, schools, research institutes, and scientific societies. Personnel from one Federal agency may also be assigned to another under an IPA agreement. The Office of Personnel Management (OPM) provides implementation regulations at 5 CFR Part 334, last amended in May 1997, but each agency is responsible for administering its own programs.

A Federal employee on IPA assignment to an external organization may be detailed as part of a regular work assignment or may work for an external organization while on leave without pay (5 U.S.C. § 3373(a)). Regardless, the individual remains a Federal employee and continues to be subject to all Federal ethics and regulations (Cusick 2006).

An employee of a non-Federal entity may receive an IPA assignment to a Federal agency either through *appointment* or *detail* (5 U.S.C. § 3374(a)). A non-Federal employee on an IPA appointment is paid by the Federal agency to which he or she is assigned (OMB 2010). He or she is considered a Federal employee for the duration of the appointment, is subject to all applicable ethics provisions, and enjoys all the rights, benefits, and privileges associated with that appointment. This includes eligibility for awards given under the authority of 5 U.S.C. Chapter 45 (OPM 2012). Non-Federal employees under an IPA detail remain employees of their permanent organizations for most purposes, but are still subject to many ethics provisions (5 U.S.C. § 3374(c)). Non-Federal employees on assignment to a Federal agency by IPA detail continue to receive pay, allowances, and benefits from the non-Federal organization they are employed by (OMB 2010). IPA detailees are not eligible for Federal health benefits, life insurance, or retirement benefits, but can be recognized through letters of appreciation or commendation. They are not eligible for awards granted under the incentive awards programs governed by 5 U.S.C. Chapter 45 (OPM 2012). According to the U.S. Office of Government Ethics, IPA assignments are almost always accomplished through details.

IPA assignments are voluntary and must serve a public purpose and further the goals and objectives of the partner organizations. Assignments are limited to 2 years, with the option to extend for an additional 2 years.² Federal employees are required to

² There are no time limits for assignments to and from Indian tribes or tribal organizations.

return to Federal service for a time equal to the length of the IPA assignment or be responsible for reimbursing all expenses, except for salary and benefits, associated with the IPA. Cost-sharing agreements, which are negotiated by the participating organizations for each IPA, are to be based on the extent to which each organization will benefit from the assignment.

Since individuals on IPA *appointment* are deemed employees of the U.S. Government, there are no restrictions on the positions that they can fill. They can make financial decisions and have unfettered access to information. By contrast, IPA *detailees*, remain employees of the outside organization and therefore may only serve in an advisory capacity. They are prohibited from directly supervising Federal personnel, and they cannot sign documents, administer line-management delegated authorities, or issue grants or policies.

Individuals serving on IPA assignments in the Federal Government are subject to the same Standards of Conduct as Federal employees (Cusick 2006). Non-Federal employees serving at a Federal agency must follow the same laws as Federal employees.

Use of the IPA program varies from entity to entity. For example, the Army Research Laboratory has had 14 non-Federal employees serve in the laboratory in the last 5 years. On the other hand, NSF has 170 to 200 non-Federal employees currently serving in the agency. (Appendix C provides key characteristics of the IPA program that could be used to inform a STEM IPA program between the private sector and Federal Government.)

3. AAAS Science and Technology Policy Fellowships

The American Association for the Advancement of Science (AAAS) manages Science and Technology Policy Fellowships. Qualified scientists and engineers at all stages of their careers serve for 1 year during which they provide scientific and technical expertise to support the policy-making process. The fellowships are open to employees in all types of organizations, except current Federal employees. Fellows serve in about 15 Federal agencies and both Houses of Congress.

Agencies either hire fellows as temporary Federal employees using Schedule A authority (e.g., State Department and NIH),³ through the IPA program, or as independent contractors through a third party (e.g., DOE). AAAS fellows hired as temporary employees have no limitations on the positions they can fill. Most are classified as contractors, however, and therefore do not have authority to manage programs or carry

³ Schedule A is part of the excepted service and is reserved for “positions other than those of a confidential or policy-determining character for which it is impracticable to examine” (5 CFR §213.3101).

out inherently governmental functions. They also must abide by the same Federal employment restrictions as permanent Federal employees.

4. Military Reservists

The U.S. military has multiple reserve components

to provide trained units and qualified persons available for active duty in the armed forces, in time of war or national emergency, and at such other times as the national security may require, to fill the needs of the armed forces whenever more units and persons are needed than are in the regular components (10 U.S.C. §10102).

These individuals may hold civilian or Federal employment and are required to serve their military branch in a limited capacity.⁴ They may be employed by a for-profit company, nonprofit company, university, or Federal and other government agency. Military reservists generally serve one weekend a month and are on temporary duty 2 weeks a year. In return, reserve members receive regular drill pay and other benefits. DOD pays reservists for days worked on a rate based on their rank.

Reservists are able to serve in any number of functions, including advisory, research, leadership, policy-making or regulatory, program management or source selection, and operational support. Reservists are subject to the same Standards of Conduct as Federal employees, as well as to the Uniform Code of Military Justice.

5. Consultants or Expert Appointments

Under 5 U.S.C. § 3109(b),

When authorized by an appropriation or other statute, the head of an agency may procure by contract the temporary (not in excess of 1 year) or intermittent services of experts or consultants or an organization thereof, including stenographic reporting services.

Federal agencies and military departments employ experts, consultants, and advisory committee members (employed as consultants) to perform services under excepted appointments. Experts and consultants may be unpaid or paid. Experts and consultants are subject to conflict-of-interest provisions, financial disclosure, and defense-related employment requirements, where applicable. Consultants and experts primarily serve in advisory positions, but may also provide research services.

⁴ For more information on Federal employees serving in the reserves see <http://www.opm.gov/reservist/summary/>.

a. DHS Loaned Executive Program

DHS has used its authority to hire temporary or intermittent experts and consultants (6 U.S.C. § 392) to establish the DHS Loaned Executive Program (LEP). DHS also has authority to ignore the pay limitations set by 5 U.S.C. § 3109. DHS has set up the LEP as an unpaid program, however:

The LEP provides a mechanism by which DHS can obtain ad hoc, unpaid, short-term expertise through appointment of appropriate individuals from the private sector to provide critical skills that, to be fully utilized, require the individual's appointment as an employee and cannot be obtained through other existing hiring mechanisms (DHS 2008).

Initial appointments are made for a period of at least 3 months and no more than 1 year. The loaned executive may be reappointed for additional periods, with the total appointment not to exceed 2 years. Executives fill advisory roles by serving as subject matter experts and senior advisors to DHS leadership, evaluating and providing assessments on existing policies, procedures, and training. LEP participants cannot manage or obligate funding.

b. Federal Advisory Committee Members

The Federal Advisory Committee Act (Public Law 92-463) and associated regulations govern Federal advisory committees. Committee members serve by appointment or invitation on an advisory committee or subcommittee (41 CFR § 102-3.25). “Unless otherwise provided by statute, Presidential directive, or other establishment authority, advisory committee members serve at the pleasure of the appointing or inviting authority. Membership terms are at the sole discretion of the appointing or inviting authority” and may or may not be financially compensated for their efforts (41 CFR § 102-3.130). Agencies may employ representatives from industry as experts and consultants under 5 U.S.C. § 3109 to perform work for an advisory committee. A representative is appointed to provide the committee with views of nongovernmental entities or of a recognizable group (e.g., industry sector). Through a Federal advisory committee, advice from private industry can be provided to the Federal Government.

Members of Federal advisory committees are restricted to giving advice only and have no decision-making authority:

(6) the function of advisory committees should be advisory only, and that all matters under their consideration should be determined, in accordance with law, by the official, agency, or officer involved (5a U.S.C. Rule).

Whether an advisory committee member is subject to Federal ethics rules depends on whether the member's status is Special Government Employee or Representative. In general, members serving as Special Government Employees are covered by regulations issued by the U.S. Office of Government Ethics (OGE) and certain conflict-of-interest statutes, but Representatives are not subject to these ethics requirements.

c. Franklin Fellows Program

Through the Franklin Fellows Program, mid- and senior-level professionals from private-sector and nonprofit entities perform 1 to 2 years of public service at the Department of State or U.S. Agency for International Development (USAID). The program began in 2006 and there are currently 44 active Franklin Fellows and 91 alums. The fellowship is open to employees from the private sector, the nongovernmental organization community, and academia. Industry candidates are often nominated by their employers, but can also self-nominate. Because the Franklin Fellows Program is unfunded by the U.S. Government, participants serve in State Department or USAID as unpaid consultants or experts. The expectation is that if a corporation nominates an employee for the Franklin Fellow Program, that employee's salary and benefits will continue to be provided by the company. In addition, approved, non-Federal entities may donate funds as a gift to State Department for support of otherwise-unfunded State Department or USAID Fellows.

Franklin Fellows fulfill unique positions based on their expertise, including advisory, research and supporting policy-making. For example, an academic works on multilateral nuclear security, especially Non-Proliferation Treaty preparation and International Atomic Energy Agency projects. Another Franklin Fellow serves at the Foreign Service Institute as an expert on second language learning for native English speakers. This Franklin Fellow works in an advisory capacity to ensure that best practices and lessons learned are incorporated into the language instruction at the Foreign Service Institute.

6. NSF Visiting Scientists, Engineers and Educators Program

The National Science Foundation Act of 1950 (Public Law 81-507) authorizes the NSF director to temporarily appoint professionals from outside the organization:

(2) The Director may...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 to work for the Foundation.

Based on this authority, NSF operates the Visiting Scientists, Engineers and Educators (VSEE) Program. This exchange program is open to individuals from many types of organizations, among them nonprofit, university, and for-profit. The exchanges last for 1 year with the option to extend for an additional year. The individuals take an unpaid leave of absence from their home institutions and NSF pays their salary. Salary is set within a range for Administratively Determined level positions, which range from \$34,075 to \$165,300, using previously established criteria. The NSF salary comprises the annualized academic salary, lost consulting wages (if applicable), cost-of-living allowance (if applicable), plus a 6% recruitment incentive, but total pay may not exceed the pay range for the position being filled.⁵ The home organization maintains the visitor's benefits and is reimbursed by NSF.

VSEE participants are able to serve in a wide range of roles, including program management. VSEE participants do not actually allocate grant or contractor funding, which is handled by the NSF contracting officer, but they decide who will receive it and how much they will receive. At NSF, both IPA detailees and VSEE exchangees serve as program directors and executive-level assistant directors. Between 35 and 40 VSEE participants are currently at NSF; none are from industry.

7. Industry Training Programs

All agencies have the authority and are encouraged to operate training programs for Federal employees in government and non-government facilities (5 U.S.C. § 4103(a)). This does not provide authority to rotate industry personnel into the Federal Government, however. Within the Department of Defense, DOD Instruction 1322.06, "Fellowships, Scholarships, Training With Industry (TWI), and Grants for DOD Personnel," directs individual components to set up TWI programs for military and DOD civilian personnel as authorized by 5 U.S.C. Chapter 41. The TWI programs are "to provide training and/or development of skills in private sector procedures and practices not available through

⁵ For more details, see http://www.nsf.gov/about/career_opps/rotators/comparecht.jsp.

existing military or advanced civilian education programs or other established training and education programs” (DOD 2007).

DOD continues to provide normal pay and allowances for the individual, who is required to return to DOD for a minimum of three times the length of the TWI. Each TWI is not to exceed 12 months and there “must be an existing Military Component need or desired future capability fulfilled by virtue of the experience gained” (DOD 2007).

DOD TWI programs include the Air Force Education with Industry (EWI) and Army TWI program. Both are also available to civilians. Other agencies, including NASA and DOE, also have industry training programs for their employees. There are limitations on duties TWI participants can fill for their industry temporary employer. For example, TWI participants may not represent a company to the government during their rotation.

8. Information Technology Exchange Program

The Information Technology Exchange Program (ITEP) involves the temporary assignment of employees in information technology (IT) management from the Federal Government to private sector organizations, along with the temporary assignment of private sector employees to Federal agencies. The E-Government Act of 2002 (Public Law 107-347, codified at 5 U.S.C. §§ 3701-3707) authorized this Federal-wide program and required OPM to develop implementing regulations, which it did late 2005. Seven agencies committed to implementing programs: the Department of Commerce, DOD, DHS, Department of the Treasury, Federal Bureau of Investigation, Health and Human Services (HHS), and OPM. Participating agencies were then required to develop an ITEP plan (GAO 2006). ITEP expired in December 2007 with a single exchange taking place—one participant from Lockheed Martin was placed with the staff of DOD’s Chief Information Officer (CIO). A second iteration of ITEP has been authorized for DOD under Section 1110 of the National Defense Authorization Act FY10 (Public Law 111-84). The new program is limited to 10 employees at any one time, and there has been one participant to date.

Exchangees under ITEP serve in advisory, research, policy-making support, or operational support roles such as system administration, IT project management, network services, operating systems, software application, cybersecurity, enterprise architecture, policy and planning, internet/web services, customer support, data management, and system analysis. (Appendix C provides key characteristics of the ITEP program that could be used to inform a STEM exchange program between the private sector and Federal Government.)

9. Department of Energy Laboratory Entrepreneurial Leave Programs

Several DOE laboratories including Thomas Jefferson National Accelerator Facility (Jefferson Lab), Sandia National Laboratories (Sandia), Pacific Northwest National Laboratories, and Los Alamos National Laboratory offer entrepreneurial leave programs. These programs allow an employee to take a professional leave of absence to pursue entrepreneurial activities designed to translate technologies developed in DOE laboratories to the market. The specific requirements and terms of the leave vary among the laboratories, however the general expectation is that laboratory employees will either create a new start-up company or help develop a new enterprise within an existing firm. Entrepreneurial leave programs at Jefferson Lab and Sandia also encourage involvement in local or regional-based businesses.⁶

Leaves of absence last between 3 months and 3 years, and employees are guaranteed reinstatement if they return to the laboratory before the expiration of the leave. Employees in these programs also enjoy retention of benefits, discounted license agreements, and support for negotiating equipment loans and developing early stage capital opportunities. Depending on the entrepreneurial leave program, employees may be required to demonstrate potential for successful commercialization of the DOE technology by providing a summary business plan, commercialization strategy, or individual performance plan and milestones. Since its inception in 1994, Sandia's Entrepreneurial Separation to Transfer Technology program has helped 144 of its employees pursue entrepreneurial opportunities. From this pool, 41 participants returned to the Sandia labs while 97 did not. Through Sandia's program, 57 laboratory employees have created new companies and 85 have helped to develop new enterprises within existing companies (Sandia National Laboratories 2013).

10. Department of Defense Visiting Researcher Opportunities

There are a number of fellowships, research programs and sabbatical leave programs that permit university faculty to temporarily conduct research in DOD laboratories. For example, the Air Force Summer Faculty Fellowship Program offers 8- to 12-week research residencies at participating Air Force research facilities for full-time science, mathematics, and engineering faculty at U.S. colleges and universities. The Office of Naval Research Summer Faculty Research Program and Sabbatical Leave Program provide science and engineering faculty members from institutions of higher education the opportunity to participate in research of mutual interest to the faculty member and peers at U.S. Navy Laboratories. The Summer Faculty Research Programs

⁶ For example, see Thomas Jefferson National Accelerator Facility Administrative Manual 207.12 Entrepreneurial Leave of Absence. Available at <http://www.jlab.org/adminmanual/200/207.12.html>.

lasts for 10 weeks during the summer and the Sabbatical Leave Program lasts for one semester to one year. Eligibility and level of involvement is dependent upon the specific DOD program. Many of the programs require the visiting researcher to be a U.S. citizen or a legal permanent resident; however, in response to the globalization of the scientific enterprise, DOD global offices offer a visiting scientist program for international scientists as well. Restrictions may be placed on international, permanent resident, and even U.S. citizen scientists to limit their access to confidential information.

D. Process

The length and complexity of the personnel exchange process depends on the agency and the type of mechanism used. Some agencies and organizations have dedicated personnel to guide individuals through the exchange application process and handle the paperwork; in others, the employees are completely on their own. One of the most oft-cited grievances by interviewees was the length and complexity of the application process (discussed further in Section F). Those who received assistance from personnel devoted to facilitating exchanges were less likely to voice this complaint, however.

Most of the interviewees said there was no advertisement or marketing of exchange opportunities; word-of-mouth was the primary method of communication. There is no centralized online location where interested external personnel could locate opportunities for rotating into the government or where government agencies and organizations could post their openings. A few of the exchange mechanisms are actively advertised, including opportunities at NSF, the Franklin Fellows Program, TWI, and the ITEP program. The ITEP program exchange opportunities are posted on DOD's ITEP webpage.⁷ NSF also sponsors recruiting trips, advertises open positions on its website, and issues Dear Colleague letters. Otherwise, individuals interested in exchanges and offices looking for an exchangee must find each other without assistance. This is true even in the departments and agencies with personnel dedicated to facilitating exchanges. The dedicated personnel did not necessarily help match exchangees with positions, but only became involved to assist with negotiations and paperwork once the parties had decided to initiate an exchange.

One exception is the NASA TWI program. NASA staff visited a number of companies before selecting a few of them to participate. There was also a fairly extensive application process for NASA personnel interested in rotating through industry. Final decisions were made by a panel of supervisors and the head of procurement.

⁷ Available at <http://dodcio.defense.gov/ITEP.aspx>.

On average, setting up an exchange takes several months. The time elapsed from the initiation of the process to start of the exchange ranges from 2 weeks to 6 months. Acquiring a security clearance can add more time. Many of the terms of the agreements must be negotiated for each exchange. This is especially true for which will cover the cost of the employee.

Each exchange paperwork packet has multiple components. For example, the necessary components for an IPA application package include the following:

- IPA Assignment Agreement—a standard agreement between the exchangee, home institution, and destination organization that includes information about the employee, position, reason for assignment, salary, benefits, leave, and travel provisions.
- Disqualification Statement—an agreement to disqualify from matters involving home institution.
- Confidential Financial Disclosure Report—a document describing all reportable assets, sources of income and debts for the participant, his or her spouse and dependent children, as well as reportable outside positions, agreements, or arrangements for the participant.

The parties involved in each exchange must negotiate cost coverage, although some agencies have clearly defined guidelines for cost reimbursement and coverage. Under IPA regulations, the organization benefiting more from the exchange should bear a larger share of the costs. Table 2 shows the wide variety of cost-sharing arrangements available. For example, under the current DOD ITEP program, the home organization has full responsibility for payment of all salary and allowances to the employees participating in the ITEP pilot. Any business travel cost for the ITEP participant while on detail is usually incurred by the receiving organization.

Agencies and organizations also provide supplemental compensation to cover relocation and salary differentials. In addition to paying salary and reimbursing the home organization for benefits, NSF also covers any lost consulting income (up to \$10,000 a year) (CRS 2009b). Sandia National Laboratories provides a standard temporary assignment package of benefits that includes an assignment allowance of 10% of base salary, 55% of per diem for the location, and moving costs (intended to cover dual households). DOE's Inspector General expressed concern about the lack of cost sharing by the partnering organizations and what it deemed inappropriate travel and relocation allowances (DOE 2007). According to the IPA provisions, an agency may reimburse the employee for either limited relocation costs or a per diem allowance, but not both. Therefore, Sandia is in the process of modifying its reimbursement package to reduce the per diem or disallow the 10% allowance.

Table 2. Examples of Standard Cost-Share Provisions

Organization	Mechanism	Cost-Share
ARL	IPA	ARL pays between 50% and 100% of salary and benefits; for most, ARL pays 100%.
HUD	Interagency, MOU	Destination organization pays salary and benefits.
NASA	TWI	NASA pays 100% salary.
NIH	IPA	NIH can pay some, none, or all of assignment; It typically pays some.
Sandia	IPA	Anywhere from Sandia paying 100% to Federal agency paying 100%.
State Department	Franklin Fellows Program	Unfunded by Government; home organization pays salary and benefits.
USAID	IPA	Universities used to share costs in 1980s; now they only provide office support.

Notes:

ARL = Army Research Laboratory

HUD = Housing and Urban Development

IPA = Intergovernmental Personnel Act

MOU = Memorandum of Understanding

NASA = National Aeronautics and Space Administration

NIH = National Institutes of Health

TWI = Training with Industry

USAID = U.S. Agency for International Development

E. Benefits

Exchanges have been described as a “triple win” for the destination organization, the exchangee, and the home organization. According to the interviews, they can also serve as a conduit for technology transfer between the government and the U.S. private sector.

1. For Destination Organization

Many of the interviewees agreed that a primary benefit of the exchange for the government was to fill in gaps in expertise and knowledge. Government agencies exploit the technical expertise of FFRDC laboratory researchers or university professors through exchanges. Exchanges provide a mechanism for attracting difficult-to-obtain talent to provide a specific expertise for a certain period of time. Temporary exchanges can serve to utilize an individual who would otherwise be unwilling to work for the government due to salary restrictions or other reasons. It may be difficult to find qualified scientists willing to take a permanent appointment because they would have to give up their research. Exchanges give the government the flexibility to tap into these prestigious scientists.

In some cases, an exchange may be less expensive than hiring a full-time Federal employee at comparable levels of education and expertise. In other cases, the organization is specifically served through the periodic influx of fresh ideas and talent. NSF relies on rotators to keep its scientific funding programs from getting entrenched in

any one area and to ensure that directors are funding more than their own interests. Temporary personnel may also be used to fill in during civilian staff shortages and military surges. In some unique situations, the exchangee can actually serve as the source of institutional knowledge and continuity. For example, a reservist can serve beneath multiple commanders and provide guidance to the many young officers cycling through each base.

Providing an external viewpoint can also be valuable to the destination organization. When the rotation occurs between a government agency and a for-profit organization, Federal employees benefit from seeing how things are accomplished in the private sector. Reservists on loan from defense contractors are able to offer insight into how industry operates and help others see the contractor's point of view. Exchangees have also brought in an outside viewpoint for policy development which provides with multiple perspectives. For government-funded rotations of government personnel to industry, the companies gained a free employee for a year. Because the NASA TWI program involved a rigorous selection process, the company benefited from a highly skilled individual.

2. For Exchangee

The principal advantage for the exchangees themselves is the exposure to a different organization's processes and structures. This is true whether it was an FFRDC laboratory employee or university professor rotating to a Federal agency, a Federal employee rotating between agencies, or a Federal employee rotating to an external organization. Exchangees may then be better equipped to help neutrally bridge gaps between industry or academia and the Federal Government and potentially promote more efficient technology transfer. Exchangees can gain specific skills, such as the ability to run large systems integration programs or manage a funding portfolio. Exchangees may also make networking contacts they can utilize in the future.

Personnel from external organizations rotating to Federal agencies under ITEP received knowledge and experience in program and policy-level matters and a sense of the obstacles the government faces with respect to managing IT. Federal employees working for other agencies found that the exchanges enhanced their skill sets and provided a view of how work was accomplished in different departments. Government employees working for industry learned how people in private industry think and how they approach the workplace environment, personnel issues, and daily business. In addition, reservists are able to continue serving their country and experience the camaraderie and fraternity of military service while benefitting from the increased freedom and higher salary of a civilian.

3. For Home Organization

The home organization of the exchangee also gains from its employee's expanded knowledge and expertise. Exchangees learn new skills, which, upon their return to their home organizations, can improve their job performance. Employers of reservists get a bonus of being branded as a patriotic organization for supporting the U.S. military. Rotators at NSF return to their institution with a greater understanding of what makes a quality grant proposal, which can translate into higher funding rates. Contractor-run laboratories, such as the Lawrence Livermore National Laboratory (LLNL), benefit because their employees learn "how Washington works," and build agency contacts and personal relationships to allow them to get things done when they have returned to the laboratory. Exchanges can also serve a workforce development function, allowing individuals to experience external career growth while remaining employed by their home organizations. For example, a participant in the NASA industry rotation program shared his experience by giving talks throughout the agency.

F. Challenges and Strategies

A number of challenges and strategies related to personnel exchange mechanisms were noted in the literature and discussions.

1. Logistical and Cultural

Logistical and cultural barriers include challenges initiating and implementing an exchange, resource constraints, cultural tension and post-exchange transition difficulties.

a. Challenges Initiating and Implementing an Exchange

Multiple reports highlighted a lack of awareness of exchange opportunities by both government personnel and outside organizations, along with inadequate advertisement of such opportunities (GAO 2006; OPM 2010; Butz et al. 2004). In addition, almost every interviewee cited the length and complexity of the application process as a major barrier. One interviewee said that the rules were confusing and noted that it would be very helpful if the agreements could be streamlined and in plain language. Another said that it seemed as if the requirements changed every few months, such that he had to relearn the process for each new exchange. Such complexity can actually prevent exchanges. One government organization lost a few potential university IPA employees because the process of obtaining the necessary agency approvals took so long that they had already committed to teaching during the upcoming semester. Some interviewees said they faced challenges when there was not a clearly defined role for them to fill at the destination organization. A reservist had to help his military supervisor figure out the best use of his service because there was confusion as to how to use someone who was only present for

a limited period of time. There are also challenges associated with temporarily moving one's family (OPM 2010).

Strategies for overcoming these barriers include actively advertising exchange opportunities, having personnel devoted to facilitating exchanges, and issuing a handbook that clearly explains the process and applicable rules. Both NSF and USAID provide a handbook to their exchangeees to guide them through the process.

b. Resource Constraints

The literature and a number of the interviewees highlighted resource constraints as a barrier to exchanges (OPM 2010). Some blamed the original failure of the ITEP program on the unwillingness of government agencies and companies to give up any valued personnel (GAO 2006). Programs dependent on agency funding are susceptible to budget cuts. For example, the NASA TWI program was terminated because the agency could no longer afford to pay the salaries of individuals while they were away on an exchange. Relocation expenses can be nontrivial if individuals are moving across the country, and they may be a significant barrier to recruiting if employers do not help defray the costs. During the forum with industry, many of the industry representatives found it difficult to justify sending personnel to the government because they would effectively lose a paid and trained employee.

One method for overcoming resource constraints is to establish exchanges that are reciprocal so that organizations maintain the same number of employees. Even so, some revenue-driven companies would be reluctant to spend the resources necessary to train the new exchangeees.

c. Cultural Tension

There can be tension between exchangeees and personnel at the destination organization. A laboratory contractor exchangeee felt he was treated like a contractor who was only there for the money, as opposed to a Federal employee dedicated to helping his country. In the military, there can be a stigma against reservists. Some active-duty military feel reservists are "part-timers" who are serving only to take advantage of the tax-free shopping on base. There may also be friction due to the practice of "burrowing in" or converting an individual from an appointed (non-career) position to a career position (CRS 2009a).

Increased training of Federal staff and communication regarding the benefits of personnel exchanges could serve to alleviate some cultural tension.

d. Post-Exchange Transition Difficulties

Evidence was mixed as to what impact an exchange had on an employee's career once he returned to his home organization. Some interviewees said that there was no negative impact on the careers of exchangees; their enhanced skill sets were appreciated. One exchangee stated he lost prestige at his home organization because his immediate supervisor did not know what he was doing for the government—he just knew that he was gone.

According to some exchangees, their organizations do not provide any assistance to those attempting to transition back to their home organizations. Exchangees must figure out what job they will fill and find laboratory and/or office space on their own. DOE's Office of the Inspector General specifically highlighted the difficulties LLNL employees have when transitioning back to their laboratory (DOE 2007).

Sandia has developed a workable strategy to attempt to overcome this challenge by actively managing their exchangees and beginning to work on a transition plan 6 months before the end of the exchange.

2. Legal and Regulatory Barriers

There are a number of legal and regulatory requirements intended to prevent financial conflicts during and after a personnel exchange that can impede personnel exchanges.

a. Restrictions during the Exchange

Most exchangees are required to follow the same Federal ethics requirements, including conflict-of-interest provisions, as Federal employees. These are laid out in the Standards of Ethical Conduct for Employees of the Executive Branch (5 CFR 2635). A few of the relevant provisions are highlighted here.

1) Financial Disclosure and Conflicts of Interest

Under Federal law and regulation, a "conflict of interest" is defined as a conflict between a Federal employee's official, governmental duties and responsibilities on the one hand, and the personal, financial, or economic interests of the employee on the other. When the official duties of a government employee may impact the outside private business or economic interests of that employee, or the economic interests of those closely associated with the employee, a conflict of interest situation presents itself (CRS 2010).

Exchangees, like Federal employees, are prohibited from personally and substantially participating in a particular matter that will have a direct and predictable effect on their financial interest or a financial interest that is imputed to them (18 U.S.C. § 208). Financial interests imputed to an exchangee include the interests of his spouse, minor children, and

organization or entity where he serves as an employee. Examples of financial interests include owning stock or continuing participation in a retirement plan. There are a number of regulatory exemptions to the conflict of interest statute for certain employee benefit plans or small holdings of stocks and securities, among others (5 CFR 2640.201–202). In addition, a conflict of interest only exists if the exchangee is directly involved in an agency matter involving the company, nonprofit organization (including FFRDCs), or university in which he holds a financial interest. Regardless, exchangees are required to disclose all financial interests before beginning an exchange. According to the GAO, Federal ethics requirements, particularly financial disclosure requirements, may discourage private-sector employees from participating in government exchanges (GAO 2006).

DOD’s strategy for dealing with conflict of interest for reservists involves a screening for conflict of interest and briefings on the legal requirements under the Uniform Code of Military Justice (UCMJ). Reservists are subject to potential UCMJ (such as court martial) or adverse administrative action (Thomas 2012). While reservists are required to disclose potential conflicts of interest, commanders also have an affirmative obligation under Joint Ethics Regulation § 5-408 “to refrain from assigning reservists to perform duties that could enable them to obtain nonpublic information or gain unfair advantage over competitors, or which present an actual or apparent conflict of interest.”⁸

2) Organizational Conflicts of Interest

Organizational conflicts of interest arise when a person is deemed unable to render impartial assistance to the government, the person’s objectivity may be impaired, or the person may have an unfair advantage. There is a perception that sending an exchangee to a government organization or accepting a government exchangee into its organization will preclude the business or university from receiving grants or contracts in the future. In reality, this is not the case. The individual exchangee is certainly not to be involved in any reviews of proposals from his or her home organization, but the organization is otherwise permitted to continue engaging with the government. For example, NSF has developed procedures for ensuring its IPA and VSEE participants are not engaged in any reviews involving their home organization. The State Department takes a more conservative approach with private-sector personnel and the Franklin Fellows Program. It determines whether there are any contracts outstanding between the company and State Department before proceeding further with an exchange.

Interviewees said the reason there was only a single participant in the Federal Government-wide ITEP program was because of concerns over organizational conflict of

⁸ See <http://www.belvoir.army.mil/sja/newsite/Documents/Reservist%20COI%20Screening.pdf>.

interest. For-profit organizations were unwilling to risk losing future business with the government over potential conflicts of interest created by an employee rotating through a Federal agency. Another agency was unable to utilize a for-profit exchangee because his firm was unwilling to accept the risk of organizational conflict of interest.

b. Post-Exchange Restrictions

Two main categories of post-exchange restrictions are relevant to exchangees. These restrictions apply even if the Federal Government paid no part of the individual's salary or benefits during the exchange. The first category limits the ability of former Federal employees, including exchangees, to represent or assist an entity in dealings with the Federal Government (18 U.S.C. § 207; 5 CFR § 2641).⁹

The extent of the restriction depends on the seniority of the individual and the extent of his involvement with the matter in question. Former government exchangees are prohibited from representing their employer or other entity in a matter that they were personally and substantially involved with during the exchange (18 U.S.C. § 207(a)(1)). There is also a 2-year ban on representation related to matters under the exchangee's official responsibility while he was in the government (18 U.S.C. § 207(a)(2)). For exchangees from the private sector under ITEP, there is also a 1-year ban on knowingly representing, aiding, counseling, or assisting in representing any entity (other than the U.S. Government) in connection with any contract with the agency to which they were assigned (18 U.S.C. § 207(l)). Additional 18 U.S.C. § 207 restrictions attach for service in certain agencies and depending on the salary and seniority of the individual involved in the exchange. Employees with base pay over \$155,440.50 are considered "senior" and subject to further limitations. For example, "senior" employees are prohibited from representing any entity on *any* matter before their former department or agency for one year. (See Appendix D for a list of post-exchange restrictions.)

The second category of restrictions prohibits post-exchange compensation from certain private sector companies (Procurement Integrity Act, 41 U.S.C. § 2104). If an employee or an exchangee serves in one of several specified positions (e.g. program manager, procuring contracting officer, source selection authority, etc.) or makes one of several specified types of decisions (e.g. award a contract, establish overhead rates, approve issuance of a payment) on a contract over \$10 million, he is prohibited from accepting compensation from a contractor that was subject to his decision making authority for one year.

⁹ The term "employee" includes an individual appointed as an employee or detailed to the Federal Government under the Intergovernmental Personnel Act (5 U.S.C. §§ 3371–3376) or specifically subject to 18 U.S.C. § 207 under the terms of another statute.

These restrictions may have a negative impact on employees' careers when they return to their home organization or seek post-exchange non-Federal career opportunities. For example, one individual who was an exchangee at the Defense Advanced Research Projects Agency (DARPA) believed that there were certain companies she could never work for because she had provided them with significant funding while at DARPA and the post-employment communication restrictions could make her not hireable. This places limitations on her post-exchange career possibilities. Other individuals have had difficulties resuming their responsibilities at their original institutions following an exchange because of the post-employment restrictions.

A person who violates post-exchange restrictions may be subject to both criminal and civil penalties, including imprisonment and fines. One strategy several agencies and organizations use to prevent violations of these restrictions is to provide their exchangees with a post-employment legal opinion that clearly explains the restrictions and how their future work may be affected when they return to their home organizations.¹⁰

Two exceptions (i.e. waivers) to the 18 U.S.C § 207 post-exchange restrictions are relevant to S&T personnel exchangees. First, agencies are authorized to adopt procedures to receive communications that are solely for the purpose of furnishing scientific or technological information from former government employees. When operating in compliance with such procedures, former government employees are exempt from the permanent ban regarding particular matters as well as the one-year cooling off period applicable to senior employees, including the bar on "appearances." (5 CFR § 2641.301(e)) However, this waiver is extremely limited in application, as it only narrowly applies to the scientific or technical information and incidental references or remarks. Second, pursuant to an agency recommendation, the U.S. Office of Government Ethics (OGE) may grant a waiver prior to Federal employment for certain positions that are demonstrably difficult to fill. This waiver removes the one-year cooling off period applicable to senior employees. ITEP participants are explicitly not eligible to benefit from this waiver. (5 CFR § 2641.301(j)) Furthermore, this authority has never been used for scientific or technical positions, but only for positions in the Department of Justice and the Securities and Exchange Commission. (5 CFR §2641, Appendix A)

The existing waiver authority is inadequate to protect exchangees and their home organizations' interests and may have a negative impact on willingness to participate in an exchange.

¹⁰ Defense Federal Acquisition Regulations actually prohibit a defense contractor from hiring a former DOD official who has not secured a written opinion from an ethics counselor regarding post-employment restrictions. Failure to comply with this provision may lead to rescission of the contract. (DFARS 252.203-7000 Requirements Relating to Compensation of Former DOD Officials).

3. Concerns over Exploitation of Exchanges

Exchanges have been the subject of several audits and investigations. For example, the Army Legal Office expressed concern over violations of the IPA time limit, financial conflicts, agreements that violate the spirit of program, and organizations circumventing personnel ceilings or using exchanges to avoid complying with competitive hiring procedures. Several reports question whether exchanges are cost-effective for agencies (GAO 2001; DOE 2007; CRS 2009b). A detailed review of 77 DOE assignments found that “the Department was not actively ensuring that the IPA and COS [change of station] assignments were cost effective; operated in accordance with existing procedures or good business practice; or, that taxpayer-provided funds supporting IPA/COS assignments were put to the best possible use” (DOE 2007).

Of the small sample of interviewees who had participated in an exchange, two had taken part in several exchanges in a row, such that they were away from their home organizations for over 10 years. Regulations prohibit a Federal agency from sending on assignment an employee who has served on mobility assignments for more than a total of 6 years, but the Office of Personnel Management may waive this provision upon the written request of the agency head (5 CFR 334.104).

G. Policy Options

A number of the policy options for improving Federal personnel exchange mechanisms were identified by interviewees and forum participants, including:

- Provide high level executive encouragement and support for personnel exchanges
- Streamline agreement packages and processes and issue exchange procedure manuals
- Publish exemplar conflict-of-interest informational briefings and management practices
- Establish a government-wide central repository for listing opportunities and required paperwork
- Engage larger groups at each agency for a collective sense of commitment to an exchange program
- Establish agency-wide personnel exchange funds
- Make a commitment to employees participating in exchanges that career trajectory will remain intact (subject to any post-exchange restrictions)
- Explore the easing of post-employee restrictions for exchangees
- Develop three-party agreements between government agency, employee and lending organization that ensure all interests are protected

- Replicate for industry personnel the existing exchange mechanisms and related incentives that are available to nonprofit and academic personnel, as appropriate

One possibility for the last policy option is to develop a legislative proposal for a pilot program for industry STEM rotators within the DOD or throughout the government. (See Appendix C for key issues for STEM industry legislation.)

Appendix A. Discussion Guide

Agency Human Resource Officials

Introduction

1. Please tell us about yourself and your office.

Available Mechanisms

1. What are the mechanisms for limited duration personnel exchanges within your agency?
 - a. How are these mechanisms overseen? How are they structured? (If needed: Where does their legal authorization come from?)
 - b. Are there any mechanisms unique to your agency?
 - c. You mentioned ITEP, is that available to agencies other than DOD and DOC? Do you know why the program ended? Are there plans to reinstate it?
2. Approximately how many people utilize these exchange options per year?

Roles and Benefits

1. What are the different roles personnel exchanges fill? E.g. program manager, researcher, etc.?
2. What do you see as the benefits to the government of personnel exchanges?
 - a. When outside personnel come into the government?
 - b. When government personnel move out of the government?
3. Do you think your agency would benefit from more exchanges (both in and out)? Fewer? The current number is about right?

Process

1. What is your office's role in the exchange process?
2. If an industry or academic professional were interested in participating in an exchange with your agency, what is the process he/she would have to go through?
 - d. What are the differences in the process between nonprofit and for-profit personnel?
3. What is the process for agency personnel wishing to go outside the government?

- a. What are the differences in the process between nonprofit and for-profit organizations?
4. What are the paperwork requirements?
5. How do you determine who will cover the cost of an exchange?

Barriers and Strategies

1. What are the potential barriers an industry or academic professional might face in setting up an exchange? Or potential barriers when they return to their original organization?
 - a. Legal? Cultural? Disincentives? Education on options?
 - b. What are the differences in the barriers between nonprofit and for-profit personnel?
2. Has your agency developed any strategies to help overcome these barriers for outside personnel coming into the government?
3. What are the potential barriers an employee within your agency might face in setting up an exchange? Or potential barriers when they return to the agency?
 - a. Legal? Cultural? Disincentives? Education on options?
 - b. What are the differences in the barriers between nonprofit and for-profit organizations?
4. Has your agency developed any strategies to help overcome these barriers for agency personnel going outside the government?

Policy Suggestions and Recommendations

1. Do you have any policy suggestions to improve the personnel exchange mechanism process?
2. Any suggestions for new mechanisms?
3. Recommendations for other people to contact?
 - a. Agency personnel who have experienced an exchange
 - b. Other HR experts

Exchangees

1. Under what mechanism did you spend time with the Federal government?
2. How did you find out about the exchange program?
3. Did you consider using any other exchange mechanisms? How did you decide which one to use?
4. What were your motivations for using an exchange?
5. What barriers or challenges did you overcome when setting up your exchange?
6. Did anyone help you with the exchange process?
7. Who paid for your exchange?

8. What were your expectations for working under the exchange prior to participating?
How did those change once you participated?
9. How long were you with the Federal government on the exchange?
10. What role did you fill on the exchange (e.g., researcher, program manager)?
11. What were your primary tasks while on the exchange? Did you manage the work of others?
12. Did your colleagues at your exchange site interact with you as if you were a government employee?
13. What barriers or challenges did you overcome during your exchange?
14. If possible, would you have preferred to stay at your assigned office after the assignment time ended?
15. Did you return to your original organization after your exchange?
 - a. If yes...
 - i. What did you gain from your exchange that you were able to use when you returned from your assignment?
 - ii. What barriers or challenges did you overcome in returning after your exchange?
 - b. If no...
 - i. Why didn't you return to your original organization after your temporary assignment with the Federal government?

Industry Forum

1. Is industry interested in sending IPAs to government?
 - a. What are stumbling blocks?
 - b. Do you have ideas for potential incentives for company personnel to participate in an exchange in the government, e.g. loan forgiveness?
2. What kind of assurances would you need for protection of your IP, etc.?
3. What needs to be included in legislative proposal?
4. Would you be interested in "reverse IPAs," e.g. government personnel rotating into your company?
 - a. What about reciprocal exchanges (to ensure no overall loss of manpower)?
5. How should we mitigate conflict of interest (COI) during a personnel exchange?
 - a. Should we look to reservists as model?
 - b. Should we look to multi-company projects as model?
6. How can we ensure companies are willing to participate in industry IPA in face of organizational COI risks?

Appendix B. Interviewees

Table B-1. Participants in Exchange Mechanisms Discussions

First	Last	Organization	Stakeholder Group
Hakeem	Basheerud-Deen	OPM	Policy
Alicia	Cloer	Sandia	HR
Elizabeth	Curtis-Swain	DuPont	Industry Forum
Robert	Dry	Department of State	HR
Michael	Dudzik	Lockheed Martin (former)	Air Force General in charge of reservists/ Industry Forum
James	Egbert	HHS	HR
Christine	Fisher	HHS – NIH	HR
Edward	Fortunato	Honeywell	Industry Forum
Joyce	France	DOD – CIO	Policy – IT
Paul	Geiger	Raytheon	Exchangee (Reservist)
Michael	Gilsdorf	OPM	Exchangee (National Association of Federal Veterinarians)
Pamela	Hammett	NSF	HR
Jerry	Harper	DOC	Policy – IT
Dianne	Hawkins	DOD – ARL	HR
Linda	Hawkins	HUD	HR
Susan	Hurd	DOD – USD(AT&L)	Exchangee (LLNL)
Ned	McCulloch	IBM	Industry Forum
Sheila	Milburn	HHS – CDC	HR
Zelma	Moore	OPM	Policy
Noreen	O’Meara	USAID	HR
Latonia	Parham	OPM	Policy
John	Parmentola	General Atomic	Industry Forum
William	Provine	DuPont	Industry Forum
Jennifer	Rickland	DOD - AFRL	Exchangee (Georgia Institute of Technology)
Sage	Russell	AAAS	HR
Gregory	Simonson	DOD - OASD(NCB/NM)	Exchangee (LLNL)
Lisa	Treadwell	EPA	Policy – IT
Reginald	Walker	NASA	HR
Harold	Welch	OPM	Policy
Danny	Wilmoth	DOD - OASD(NCB/NM)	HR

Appendix C.

Key Issues for STEM Industry Exchange Legislation

STPI researchers identified three pieces of legislation that could be used as models in developing proposals for STEM-specific personnel exchange mechanisms between the Federal Government and the private sector: the Intergovernmental Personnel Act (IPA) mobility program authorized by the Intergovernmental Personnel Act of 1970 (Public Law 91-648, codified at 5 U.S.C. §§ 3371–3375), the Information Technology Exchange Program (ITEP) established by the E-Government Act of 2002 (Public Law 107-347, codified at 5 U.S.C. §§ 3701-3707), and the proposed, but not passed, Industry Assignment Program (proposed as Section 817 of S.747 - National Defense Authorization Act for FY 2004). All of these programs involve the exchange of personnel between the Federal government and external organizations. Using the legislation for these programs as a guide, there are several key issues that could be considered when crafting STEM industry exchange legislation:

- **Applicable agency or agencies:** The STEM industry exchange could be open initially to a single agency, such as DOD, or to multiple agencies. If the program is to be open to more than one agency, this could include all agencies or only scientific agencies.
- **Authorized participants in exchange:** If the program is to be limited to STEM workers in the private sector, these terms could be defined.
- **Assignment authority:** This provision could authorize the head of an agency to arrange the assignment of private sector STEM personnel in the government, Federal employees in the private sector or both.
- **Agreements:** This could provide the authority and mandate for a written agreement between the agency and the assigned employee concerned regarding the terms and conditions of the assignment.
- **Duration:** The exchange period could be for a limited duration with the possibility to extend.
- **Termination:** This allows assignments to be terminated by the agency or external organization concerned for any reason at any time.
- **Conflict of Interest and ethics:** Private sector exchangees may be subject to the same conflict of interest and ethics provisions as Federal employees.
- **Assignee benefits and compensation:** This section could clarify assignee benefits and compensation.

- **Federal assignee length in service requirement:** Federal employees that undertake an assignment could be required to serve in the civil service, upon completion of the assignment, for a period equal to the length of the assignment.

Appendix D. Post-Exchange Restrictions

18 U.S.C. Section	Employees	Length of Restriction	Summary
207(a)(1)	All grades and ranks (except enlisted military)	Permanent	No former employee may knowingly make, with the intent to influence, any communication to or appearance before an employee of the U.S. on behalf of any other person (other than the U.S. Government) in connection with a particular matter involving a specific party or parties, in which he participated personally and substantially as an employee, and in which the U.S. is a party or has a direct and substantial interest
207(a)(2)	All grades and ranks (except enlisted military)	2 years after government service terminates	No former employee may knowingly make, with the intent to influence, any communication to or appearance before an employee of the U.S. on behalf of any other (other than the U.S. Government) in connection with a particular matter involving a specific party or parties, in which the U.S. is a party or has a direct and substantial interest, and which such person knows or reasonably should know was actually pending under his official responsibility within the one-year period prior to the termination of his employment with the U.S.
207(b)	All grades and ranks (except enlisted military)	1 year after government service terminates	No former employee may knowingly represent, aid, or advise on the basis of covered information, any other person (other than the U.S. Government) concerning any ongoing trade or treaty negotiations in which, during his last year of government service, he participated personally and substantially as an employee.
207(c)	“Senior”	1 year after service in a “senior” position terminates	No former “senior” employee may knowingly make, with the intent to influence, any communication to or appearance before an employee of a department or agency in which he served in any capacity during the 1-year period prior to termination from “senior” service, if that communication or appearance is made on behalf of any other person (other than the U.S. Government) in connection with any matter concerning which he seeks official action by that employee. See 207(l) below for an additional restriction for “senior” employees who are private-sector assignees.

18 U.S.C. Section	Employees	Length of Restriction	Summary
207(d)	"Very Senior"	2 years after service in a "very senior" position terminates	No former "very senior" employee may knowingly make, with the intent to influence, any communication to or appearance before any individual appointed to an Executive Schedule position or before any employee of a department or agency in which he served as a "very senior" employee during the 2-year period prior to termination from government service, if that communication or appearance is made on behalf of any other person (other than the U.S. Government) in connection with any matter concerning which he seeks official action by that individual employee.
207(f)	"Senior" "Very Senior"	1 year after service in a "senior" or "very senior" position terminates	No former "senior" employee or former "very senior" employee may knowingly, with the intent to influence a decision of an employee of a department or agency of the U.S. in carrying out his official duties, represent a foreign entity before any department or agency of the U.S. or aid or advise a foreign entity.
207(l)	Private Sector Assignee	1 year after termination of assignment from private sector organization to an agency	No former "private sector assignee" may knowingly represent, or aid, counsel, or assist in representing any other person (other than the U.S. Government) in connection with any contract with the agency to which he was assigned.

Note: "Senior" and "very senior" employees are defined in 18 U.S.C. § 207(c) and (d).

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Abbreviations

AAAS	American Association for the Advancement of Science
AFRL	Air Force Research Laboratory
ARL	Army Research Laboratory
CDC	Centers for Disease Control and Prevention
CIO	DOD Chief Information Officer
COI	Conflict of Interest
COS	Change of Station
CRADA	Cooperative Research and Development Agreement
CRS	Congressional Research Service
DARPA	Defense Advanced Research Projects Agency
DHS	Department of Homeland Security
DOC	Department of Commerce
DOD	Department of Defense
DOE	Department of Energy
DOJ	Department of Justice
EPA	Environmental Protection Agency
FBI	Federal Bureau of Investigation
FFRDC	Federally Funded Research and Development Center
GAO	Government Accountability Office
HHS	Department of Health and Human Services
HR	Human Resources
HUD	Department of Housing and Urban Development
IDA	Institute for Defense Analyses
IPA	Intergovernmental Personnel Act
IT	Information Technology
ITEP	Information Technology Exchange Program
LEP	Loaned Executive Program
LLNL	Lawrence Livermore National Laboratory
MOU	Memorandum of Understanding
NASA	National Aeronautics and Space Agency
NIH	National Institutes of Health
NSF	National Science Foundation
OASD(NCB/NM)	Office of the Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs/Nuclear Matters
OGE	Office of Government Ethics
OMB	Office of Management and Budget
OPM	Office of Personnel Management
STPI	Science and Technology Policy Institute
TWI	Training with Industry

UCMJ
USAID
USD(AT&L)

Uniform Code of Military Justice
U.S. Agency for International Development
Under Secretary for Defense for Acquisition,
Technology and Logistics
Visiting Scientists, Engineers and Educators Program

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14. ABSTRACT The Federal Government science and technology enterprise is enhanced by the regular rotation of external technical talent into the government and vice versa. This project involved collecting literature, reviewing legal documents, and engaging various stakeholders in the personnel exchange system to explore the available mechanisms and identify potential improvements. Currently available personnel exchange mechanisms vary along several parameters, such as which agency can use which individuals (Federal, nonprofit, university, or for-profit employees) and which role the individuals can fill. The length and complexity of the personnel exchange process depends on the agency and the type of mechanism used. Personnel exchanges provide myriad benefits for the exchangee, destination organization, and home organization. Logistical and cultural barriers include challenges associated with initiating and implementing an exchange, resource constraints, cultural tension, and post-exchange transition difficulties. Legal and regulatory requirements intended to prevent financial conflicts can impede personnel exchanges. Policy options identified by stakeholders for improving current personnel exchange mechanisms include providing executive encouragement and support for personnel exchanges, streamlining agreement packages and processes and issue exchange procedure manuals, and establishing a government-wide central repository for listing opportunities and required paperwork.					
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