

**Statement of
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Before the

**Senate Subcommittee on Oversight of Government Management, Restructuring
and the District of Columbia**

Mr. Chairman and members of the Committee,

I thank you for the opportunity to be here today to discuss Federal employee incentives both to attract and maintain a skilled workforce. NASA's past successful aerospace ventures demonstrate successful exploration of new galaxies and implementation of advanced technologies. Clearly, NASA's cutting-edge mission requires a creative, informed workforce including scientists, engineers, procurement specialists, budget specialists, program managers, network administrators, and probing, independent reviewers and evaluators. However, the failure to recruit, train, and retain the proper mix of a skilled workforce has recently resulted in some mission vulnerabilities and resulted, in part, in the costly Mars Climate Orbiter failure.[\[1\]](#)

My testimony generally will be based on the efforts to recruit and retain employees for the National Aeronautics and Space Administration (NASA) Office of Inspector General (OIG), and our observations of NASA's experiences in recruiting and retaining employees. I will focus particularly on issues relating to information technology (IT).

Introduction

Technology, including information technology, is changing at unprecedented rates. Federal executives, managers, and human resource professionals find it increasingly difficult to locate and attract workers who have skills to manage the ever-changing pace of the IT revolution. This problem is exacerbated by the demographic trends in many Federal organizations which, because of declining or flattened budgets and downsizing initiatives, have not been hiring those on the cutting edge of IT development and IT security and systems administration.

NASA, like many other Federal agencies, has been coping with declining budgets and downsizing initiatives. NASA lost (primarily through retirement and resignation) a total of 14,268 civil service employees from FY 1993 through the current period. The Agency's hiring of new employees has been steadily reduced in the last several years. The Agency was able to hire only 8,173 employees in the same timeframe. Consider, however, the change in NASA's utilization of two key sources for talented new hires, cooperative education students[\[2\]](#) and Presidential Management Interns (PMIs).[\[3\]](#) In FY 1993, NASA hired a total of 411 cooperative education student employees and PMIs. In FY 1999, only 206 of these employees had been hired.

Only recently has NASA begun to increase its hiring capability. This authority will provide the Agency with an opportunity to right-size, that is, replace staff with essential skills lost through attrition and buyouts, ensure an influx of new personnel who will become NASA's future leaders, as well as diversify and modernize its workforce. Administrator Daniel Goldin and his staff are working now on plans to improve the core capabilities of the NASA workforce.^[4] NASA, based on its Core Capability Assessment of 1999, and a commitment to the Office of Management and Budget, is developing staffing plans. The Agency cites the need to respond to the changing dynamics of the American workforce (i.e., employee mobility and benefits portability) and assumes that people entering Government service will stay for a few years and leave. Therefore, a significant aspect of NASA staffing plans will be the use of temporary and term appointments, including Intergovernmental Personnel Act (IPA) assignments, internships, and other non-traditional appointments. However, the tight labor market, particularly in the high-technology occupations, poses a daunting challenge for NASA and other department and agency Federal managers intent on upgrading workforces and organizational performance to meet emerging technology challenges.

The NASA OIG Experience

Consider the NASA OIG's efforts to focus on NASA's information technology environment. We needed to recruit professionals who could effectively audit, inspect, and investigate technology matters critical to our Agency. When I became the NASA Inspector General, I committed the OIG to establishing IT audit and security evaluation programs and a computer crime unit because of NASA's extensive dependence on network systems.

Our Computer Crime Division (CCD) is small, but smart and efficient. In part, we have successfully recruited skilled staff for CCD because we offer higher grades and salaries possible under Federal personnel guidelines (GS-13, 14, and 15 levels). We have also created a work place increasingly known for its leadership in the computer crimes field – consistently applying and developing state-of-the-art techniques and methods, and offering staff ample opportunities for their creative capacities in a challenging Agency environment where results count. The CCD agents and technicians know that IT security impacts astronaut safety, satellite mission successes, and protection of cutting edge technology from inadvertent loss or malicious attacks.

However, recruitment in this occupational field is extremely difficult, and we have lost potential candidates and some on-board staff to the lure of the private sector, with its higher salaries, more lucrative benefits, and greater flexibility to balance work and private life.

The following actual recruitments for IT professionals show the barriers we face in our recruitment efforts. These private sector announcements are emblematic of the competitive problems we face. One position, for a "Network Security Engineer" located in the mid-Atlantic region, offers a salary range of \$80,000 to \$120,000 per annum. The position which is similar to positions at the GS-13 and GS-14 levels in NASA (\$60,890 - \$93,537), also offers benefits not available in government service (e.g., profit sharing,

stock options). Another position, "Network Security Consultant (Senior)" is very similar to GS-14 (\$71,954 - \$93,537) computer security professionals we attempt to hire for our computer crime unit. However, this private sector position, located in Northern Virginia, offers a salary range of \$90,000 to \$130,000 with benefits profit sharing and stock options we cannot match. Yet another position, located in suburban Maryland, "Digital Security Engineer," offers a salary level (\$90,000 - \$110,000) and benefits exceeding those we can offer. These are the kinds of lucrative opportunities to which we lose both employment candidates and our experienced on-board civil servants.

With the increase in computer crime, and the increasing capability of computer criminals, Federal law enforcement organizations need to increase professional competence and size of their staffs. The investigative community must be armed with the most sophisticated hardware and software to prevent and detect information crimes. More importantly, we must attract, deploy, and retain agents and other technical staff capable of understanding emerging technologies and matching the growing skills of hackers and other high-technology criminals. Federal agencies and departments must also staff their network systems with highly competent systems administrators, operators, and security managers. All of these efforts will cost more money. If such resources are not provided, and we do not adequately meet the challenge, we will inevitably lose more ground to the malicious and criminal side of the information technology world.

We have had similar difficulty in recruiting for our IT audit unit. I was extremely fortunate to have on-board an experienced, credentialed, IT auditor who could design an IT audit program and select and train staff. Our staffing effort for this unit, dating back over four years, consists of recruiting outside auditors and evaluators with some IT familiarity, as well as training in-house auditors.[\[5\]](#)

We have attempted to use bonuses to recruit experienced IT auditors and evaluators, but have faced considerable difficulty. Unfortunately, Federal classification and staffing requirements have complicated our recruitment efforts. For example, the Federal auditor occupational series requires a minimum of 24 academic credit hours of accounting to qualify as an auditor. A number of highly qualified information technology auditors, with recognized credentials, did not qualify for these auditor positions under current Office of Personnel Management (OPM) staffing guidelines qualifications for auditors.[\[6\]](#)

OPM recognizes this general problem of outdated personnel series and has taken steps to respond more quickly to changes in labor markets. For instance, OPM recently released revised position classification and qualification standards for critical IT occupations which more accurately reflect current labor market conditions.

However, it is my experience, and based on anecdotal evidence, that it takes too long to create and then classify a new position,[\[7\]](#) open a recruitment announcement, analyze candidate qualifications, have a panel rate and rank highly qualified candidates, refer a list of candidates to a selecting official, interview candidates, and then offer a job. We have lost leading candidates in both audit and computer crime arenas to our private

sector competitors because most companies can hire top-performing candidates faster than we can.

The acute need to provide a candidate pipeline for information technology security and computer crime professionals is heavily emphasized in Presidential Decision Directive 63, National Plan for Information Systems Protection. Richard Clarke, National Coordinator for Security, Infrastructure Protection, and Counter-Terrorism writes “...the plan will build a defense of our cyberspace relying on new security standards, multi-layered defensive technologies, new research, and trained people. Of all of these, the most urgently needed, the hardest to acquire, and the *sine qua non* for all else that we will do, is a cadre of trained computer science/information technology (IT) specialists.” (emphasis supplied) Recognizing this need, OPM embarked on an IT occupational study which will help identify the number of IT positions in the Federal Government, the core competencies needed for these positions and the training and certification required for these positions. Additionally, a Scholarship for Service (STS) program was proposed within PPD 63 to recruit and educate the next generation of Federal IT workers and security managers. The program will fund students in their pursuit of undergraduate or graduate degrees in the information security field. In return, the students would serve in the Federal IT workforce for a fixed period after graduation. Moreover, the plan requires the development of a high school recruitment and training initiative. The program would identify promising high school students for participation in summer work and internship programs that would lead to certification to Federal IT workforce standards and possible future employment.

Similarly, the NASA OIG has recognized the need to expand interest in and increase the pipeline for information technology security and computer crime professionals. We will be initiating a special outreach program with colleges and universities. We also intend to forge partnerships with schools and departments of both criminal justice, computer science, and other related academic disciplines. We will look to create cooperative education opportunities, internships, specialized training, and career placement programs for our own OIG programs and to share with our colleagues in Offices of Inspector General, as well as other audit and law enforcement, and information security organizations. NASA, too, is planning extensive outreach programs with academia and the private sector. Although still in early development, NASA Centers plan to enhance or forge new relationships with universities and colleges involving placement of new science and research professionals.[\[8\]](#)

Impact of High-Cost Labor Markets

NASA and other Federal organizations face a very real problem of recruiting for jobs in cities with high costs of living, such as those in Northern and Southern California. We have found recruiting in general, but specifically for IT professionals, for our location at the Ames Research Center (Ames) in the San Francisco Bay area to be extremely difficult. Current regional cost-of-living adjustments and existing incentives are not enough to compete in this labor market, especially in various high-technology fields.[\[9\]](#) During the last four years, we have continuously, but unsuccessfully, recruited for an IT

criminal investigator or analyst for Ames. Even when candidates expressed an interest, the high cost of housing in the Bay area has resulted in candidates declining job offers. The ability to subsidize or otherwise provide housing may be one way to attract capable IT employees to such high cost of living areas.

Evaluation of high-cost labor markets should be continuous by OPM and Agency human resource staff, and then prompt and effective action should be taken to improve Federal competitiveness in these particularly competitive labor markets. As it is now, we and other agencies and their OIGs are losing the battle to attract talented IT workers.

Existing Incentives Are Often Not Used

Director LaChance and her staff at OPM oversee a variety of authorities and provide numerous delegations to Federal agencies to assist in recruiting and retaining a skilled, creative, and effective Federal workforce. Additional incentives are available to agencies by OPM. For instance, agencies currently have authority to offer superior qualifications (above-the minimum) appointments that provide for advanced salary steps for candidates with superior qualifications. Individual recruitment bonuses up to 25% of salary may be paid to top performing candidates in hard-to-recruit categories. Similarly, agencies and departments also have the opportunity to offer recruitment bonuses for entire groups or categories of employees. For hard-to-replace, high performing individual employees currently in the civil service, retention allowances may be offered up to 25% of salary. Retention allowances may also be offered to specific employee groups or categories up to 10% of salary (up to 25% with OPM approval).^[10] Unfortunately, many Federal organizations and managers have been hesitant, unwilling, or unable to use these incentives. OPM statistics indicate relatively slow growth in the use of recruitment and retention bonuses. Since FY 1996, NASA has offered only 53 recruitment bonuses, and only 9 retention bonuses. NASA's new staffing initiatives envision more significant use of the bonuses in the future.

Innovative Use of Existing Incentives

There are some best practices and models for energetic Federal recruitment and retention efforts. The Federal Chief Information Officers (CIO) Council has highlighted the State Department's initiative to fill its depleted IT professional ranks with highly qualified workers. After years of hiring constraints, the State Department received authorization to fill its open IT civil service billets in 1998. The Department's management used several of the existing recruitment and retention incentives, aggressively recruited (including sponsoring two of its own IT job fairs), and is now well on the way to filling its 300 IT vacancies worldwide. The Central Intelligence Agency (CIA) and the Internal Revenue Service (IRS) have also innovatively used existing authorities and delegations to improve recruitment for hard-to-fill positions.

The CIA initiated an aggressive and creative advertising campaign in newspapers and magazines, and on a dedicated Web site. The ads identifying "the ultimate international career," and appealed to candidates with an "adventurous spirit." To promote new technologies, the CIA also created a Silicon Valley venture capital company (In-Q-Tel) to

encourage information technologists to apply for financing. In order to fill 100 vacant information technology positions in Washington and at its field offices, the IRS extended bonuses to candidates for GS-5 through GS-14 positions. Since initiating the program last summer, the IRS has hired more than 60 GS-5 to GS-7 computer programmers, and 20 GS-13 and GS-14 information technology positions. Previously, the IRS extended 10% retention bonuses to its information technology workforce already on-board, to help assure Year 2000 readiness.

Some recently initiated studies may offer blueprints for changes to Federal employment incentives. The CIO Council commissioned the National Academy of Public Administration to conduct a study on how information technology compensation in the Government compares to the private section. OPM is also looking at offering special rates to Federal IT workers and considering possible Government-wide changes to Federal compensation. I am hopeful that these and other studies will provide us with the basis for prompt and effective changes to the aggregate Federal salary and benefit "package."

There can be no doubt that aside from monetary inducements and other benefits, the Federal personnel system needs to respond more promptly to changes in the overall labor market. As technology advances and changes, recognized professions change, occupations emerge, job specialties are created, and new credentials arise. Federal position classification and staffing practices need to mirror terminology, recognized credentials, and new job components of the job market.

Needed Emphasis on Human Resources Management

Although Federal personnel workers are dedicated and enthusiastic about their jobs, their years of focusing on downsizing activities may have left these professionals without up-to-date recruitment skills, including a lack of contacts in relevant labor markets. In contrast, the private sector human resources community has been aggressively recruiting in this current boom economy. Similarly, much of the Federal human resource community has focused on organizing and running reductions-in-force and/or early-out retirement and buyout plans. Thus, their experience, skills, and strategies related to retaining employees might have suffered as well.

Also, as a result of reductions and reinventions of the Federal personnel community mandated by the National Performance Review, many personnel offices are understaffed and ill equipped to compete with their private sector counterparts. For example, from FY 1993 to the present, NASA lost almost 20% of its personnel specialists, many of them experienced veterans of staffing efforts. As a result, creative augmentations of the personnel workforce may be necessary, including temporary, term, part-time, and even contractors under appropriate circumstances. Federal personnel offices must attract and retain professionals and support staff that understand and can fully utilize the variety of existing programs and incentives provided under current law and regulation. Enhancing and upgrading the professional capabilities of our Federal

personnel professionals must begin with the full attention and support of top management.

The Role of Federal Executives and Managers

Too frequently, Federal managers - and I have found that to be the case even in my own operation - are unaware of the incentives available to them in recruiting staff. Moreover, even if fully knowledgeable of Federal recruitment incentives, they underestimate the real work impacts of not selecting the best possible candidates because of the reluctance to utilize higher cost approaches (e.g., higher grades, recruitment bonuses, invitational and recruitment visits with paid travel costs, etc.) There are real costs associated with not being able to hire the very best candidates. For example, less experienced employees may require comprehensive training (which has impacts on the employees' availability). Another devastating impact of choosing less than the best qualified candidates is low morale from the overworked, under-resourced, on-board staff who must train new employees and shoulder even more responsibility until new employees are fully productive. Also, managers may hire employees who just are not fully capable of performing the job so that time-consuming performance-related actions may become necessary. So spending money up front to select the best available candidates may be the most cost-effective recruiting technique available to Federal managers.

Perceptions of Government Service

Often, potential job candidates' perceptions of Government service color their decisions whether to apply for and accept a Federal job. The Third Report of the National Performance Review^[11] states that "America was born angry at government." The report continues, "we feel our government has become distant and insensitive -- not to mention too big, too meddlesome, and too costly." The National Performance Review (now called National Partnership for Reinventing Government) has, in large part, been successful in streamlining operations, improving customer service, and reducing program costs in the Federal Government. However, the Review may have also contained an underlying tone that the work of Federal employees was unsatisfactory, and that many of them were no longer needed. Government workers are easy targets, and are often the recipients of unfair political and mass media criticism. As the NASA Inspector General, I know that our NASA employees often report allegations related to crime, fraud, waste, abuse, and mismanagement against NASA. This is because the vast majority of NASA workers want their Agency and Government to work effectively and efficiently. I think this perception of Federal employees' commitment to good government is also true of my colleague Inspectors General at other Federal agencies and departments. Various Congresses, Administrations, and political candidates from major parties, when attacking or criticizing Federal employees unintentionally may deter the most highly skilled and top performing individuals from entering and remaining in Government service. All Government leaders have the responsibility to publicly support and recognize the Federal workforce for its accomplishments and dedication to public service. By no means do I imply that there should be silence in the face of Government

inefficiency and waste. However, we must all strive, in the interests of attracting the best and the brightest to Government service, a balanced appraisal of Federal workforce performance and contributions.

In addition to salaries, bonuses, awards and other allowances, topnotch candidates are often attracted to organizations that are creative or otherwise highly regarded. NASA, for example, offers candidates an opportunity to perform important, cutting-edge science and research. At NASA, managers have the good fortune of working in a generally well-respected organization with an exciting mission. In the OIG, we have hired and retained top performing IT staff who can receive higher wages and better benefits outside of Government service. These critical staff remain with the OIG because of our mission and the Agency's mission. Building and maintaining organizations of excellence is possible for the Government sector. Outstanding employees will be drawn to progressive, visionary, and high performance organizations.

Employment candidates are also drawn to organizations that provide flexibility in work schedules and workplaces, and promote family life. In this respect too, Federal organizations and managers often underestimate the attractiveness of alternative work schedules, telecommuting, and the Federal family-friendly policies. In this regard, NASA offers a variety of work schedule flexibilities that are attractive to our employees. Although we can point to no specific study, we are convinced that offering these incentives has contributed to our recruitment and retention efforts.

Aside from salary and other monetary inducements, additional leadership is needed to encourage all levels of Federal managers to modernize Government workplaces and employee support programs. Workers looking for jobs are increasingly discriminating in selecting employers that offer an array of employee programs. Some of these inducements include health and wellness initiatives, family care supports (e.g., including child and elder care, and child education initiatives), and various forms of telecommuting. NASA has in place, or is actively developing or considering, many of these employee support programs. Federal agencies and departments have authorities to use most of these modern workplace incentives. However, their use and application depends on the leadership of every level of supervision, from the first-level supervisor to the Agency head.

Budget Constraints Often Limit Use of Incentives

There are many no-cost and low-cost steps Federal agencies and departments, and individual managers can take to make their work environments more attractive to top performing employees and candidates. However, we must all realize that the use of incentives requires a balancing of resources and has an opportunity cost. Faced with reduced budgets, agency comptrollers, personnel officers, and individual managers, have to make difficult choices every day on how to spend limited program funding. This feature of Federal management will never change, but Congress and the Administration need to assure, to the greatest extent possible, that adequate funds are provided to retain and upgrade a modern and highly skilled Federal workforce. Agency and

department heads must fence off sufficient funds to adequately recruit and keep top performers and effectively balancing human resource costs.

Conclusion

In summary, Congress and the Administration must take immediate steps to improve Government operations by encouraging Federal executives and managers to effectively use existing incentives, and to provide even more flexibilities to attract and retain the very best Federal employees. Our system of Federal employee incentives should be continuously reviewed and changed as global economic and labor markets pose new competitive challenges. We should continue to expand our benchmarking of corporate and industrial approaches to recruiting and retaining employees, and make changes to our incentive programs accordingly. We should train and encourage our Federal managers, executives, and human resources professionals to understand and use existing incentives, and to lead the Government in identifying and creating new incentives. Finally, Congress and the Administration should hold heads of Federal agencies and departments accountable for their leadership in establishing the kinds of Federal workplaces that will attract and keep the very best employees in Government service.

[1]The Mars Climate Orbiter Mishap Investigation Board's *Report on Project Management in NASA*, March 13, 2000, noted that successful project management starts "with top-notch people and creating the right cultural environment in which they can excel." The Board found that the lack of adequate staffing contributed, in part, to the mission failure.

[2] The Cooperative Education Program is part of OPM's consolidated Student Educational Employment Program. The program provides Federal employment opportunities to students who are enrolled or accepted for enrollment as degree seeking students taking at least a half-time academic, technical, or vocational course load in an accredited high school, technical, vocational, 2 or 4 year college or university, or graduate or professional school. The program involves work experience that is directly related to the student's academic program and career goals. Successful program participants may be noncompetitively converted to term, career or career-conditional appointments following completion of their academic and work experience requirements. NASA has historically used this program as a principal "staffing pipeline" for engineering, scientific, and professional administrative positions.

[3]The Presidential Management Intern Program (PMI) was established by Presidential Executive Order in 1977. It is designed to attract to the federal service outstanding graduate students (Master's and Doctoral-level) from a wide variety of academic disciplines who have an interest in, and commitment to, a career in the analysis and management of public policies and programs. It is a two-year internship program which enables graduate degree students to be appointed to federal positions as PMIs and to also have the opportunity to be converted to a permanent federal civil service position

following their successful internship. Interns are appointed at the GS-9 level and are generally converted to career-conditional appointments at the GS-12 level after successfully completing the internship.

[4] In the coming months, the NASA OIG will be evaluating the cost-effectiveness and utility of the plan and its implementation. A key issue is whether highly qualified technical and scientific staff will be willing to accept temporary or term appointments. Also, we will monitor whether NASA provides proper ethics guidance to the term employees. In making non-traditional appointments, the Agency must take care to counsel these employees on applicable Federal rules and regulations to avoid conflicts of interest or the appearance of such conflicts. A recent NASA OIG inspection of NASA's use of IPA assignments found that many individuals appointed to IPA positions in NASA held key decision-making posts. Although generally covered by Federal ethics rules, these employees are not required to file disclosure forms or receive ethics counseling. Without proper guidance and counseling, these individuals may unintentionally find themselves in positions of actual or apparent conflicts of interests.

[5] The IT audit staff began with very focused audits and received targeted specialized training prior to each audit. They continue to demonstrate increased skills, and are performing ever more complex audits, increasing our IT audit value to Agency managers.

[6] The NASA OIG Personnel Officer will raise this issue at the May Bimonthly OIG Personnel Directors Meeting to determine whether other OIGs have similar concerns.

[7] A position description for a highly complex information technology position must be carefully and accurately drafted. A crediting plan, based on the key attributes of the position, must then be developed to assure that qualified candidates are considered and unqualified candidates are excluded from further consideration. These activities are complicated and time-consuming for even the most knowledgeable manager.

[8] The Administrator has also tasked his Senior Advisor to spearhead NASA's effort to create new relations with universities, industry and other scientific and technical agencies.

[9] Voluntarily relocating in-service Federal employees to fill vacancies in these high-cost locations is also difficult even with full permanent change of station (relocation) costs and relocation bonuses. Directed (involuntary) reassignments pose serious morale problems because of the financial impact of the relocation.

[10] OPM's web site, <http://www.opm.gov/oca/pay>, provides an excellent overview of employment incentives including recruitment, relocation, and retention bonuses (See Title 5 of the Code of Federal Regulations, Part 575).

[11] *Common Sense Government Works Better and Costs Less*, September 1995.