Science and Technology Leadership in American Government: Ensuring the Best Presidential Appointments

Panel on Presidentially Appointed Scientists and Engineers, National Academy of Sciences, National Academy of Engineering, Institute of Medicine

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Panel on Presidentially Appointed Scientists and Engineers
Committee on Science, Engineering, and Public Policy

National Academy of Sciences
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Institute of Medicine

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PANEL ON PRESIDENTIALLY APPOINTED SCIENTISTS AND ENGINEERS

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Preface

This report is from a study of the federal government's capacity to recruit highly qualified individuals for the top science and technology (S&T)-related leadership positions in the executive branch. The effort was supported by the Carnegie Commission on Science, Technology, and Government and by the National Research Council Fund of the Academies—National Academy of Sciences, National Academy of Engineering, and Institute of Medicine. It was carried out by a panel of the Academies' Committee on Science, Engineering, and Public Policy.

The panel was well suited for the task. It was composed of distinguished former presidential appointees who have worked in or interacted with key S&T-related positions, and experts in the presidential appointment process (Appendix A provides brief information on panel members). Among them, the panel members have had many years of experience as presidential appointees in the White House, Executive Office of the President, the Departments of State, Defense (including the Air Force and Navy), Transportation, Health and Human Services, and Energy, and in the National Aeronautics and Space Administration.

There is little statistical data on the problem. Most of the existing data are indicators of quality problems such as vacancy and turnover rates rather than data that bear directly on causes or consequences. The study therefore primarily drew directly from the collective wisdom and judgment of the panel members, which in turn was based on their depth of experience in and around the policymaking levels of a rich variety of agencies and programs in every administration since Eisenhower. The panel was motivated by the realization that, although a diminishing capacity to recruit first-rate people may be hard to measure quantitatively, its long-term consequences would be very serious for the nation.

The study was initiated from a mutual concern of the National Academies and the Carnegie Commission about the federal government's

ability to respond to and shape the fast pace of scientific discovery and technological change in the world today. The panel identified a set of 78 presidentially appointed, Senate-confirmed (PAS) positions at the subcabinet level that are closely involved in science and technology policymaking and program administration (they are listed in Appendix B). The positions were chosen without regard to whether they have been held by individuals with scientific or engineering backgrounds, because they are the positions that would benefit most from incumbents with such expertise. In fact, at least two-thirds of them *are* filled by individuals with technical expertise—those who have some degree of training and experience in engineering or the physical, natural, or mathematical sciences (and several more are social scientists). However, since these are political jobs involved in policymaking and administration, other qualifications are important, too. For example, some positions have been filled very successfully by those with business and legal backgrounds.

Different kinds of professional expertise are, of course, important in other program areas. Legal and accounting training and experience are essential in banking and securities regulation, for example. The same barriers and disincentives to serving in top S&T-related positions obviously apply more generally to many presidentially appointed positions, especially if they require special or professional qualifications. But the panel was asked to study the problems encountered by administrations in attracting and keeping talented individuals in S&T-related executive positions. Our recommendations are intended to address these problems and put the nation in a better position to use science and technology to improve the public welfare, security, and health. We do not mean to suggest, however, that presidential appointees who happen to be scientists and engineers should be treated differently from other appointees. The recommendations should be applied generally, and if they help in the recruitment of the best federal executives in other areas, so much the better.

Also, when the report refers to scientists and engineers as potential candidates for presidentially appointed positions, it should be understood that we are referring to individuals with scientific or engineering backgrounds, whether or not they are currently practicing as such. In most cases, the scientists and engineers with the talent, energy, and experience required for a PAS position have been in managerial positions for some time. Still, their training and experience as a scientist or engineer would be of great help to them in carrying out the critical task of injecting technical expertise into government policymaking and administration.

The panel would like to thank the individuals who took the time to meet with us and share their knowledge, experiences, and views. The

panel was briefed on the recruiting situation at its first meeting in June 1991 by Chase Untermeyer, then assistant to the President for presidential personnel, and D. Allan Bromley, the assistant to the President for science and technology. Later, Constance Horner met with the panel during her first week as the assistant to the President for presidential personnel. The panel also heard from several staff members of the Office of Presidential Personnel—Jan Naylor, the deputy director, and Martha Goodwin, an associate director. Jane Ley, deputy general counsel, and Leslie Wilcox, attorney-advisor, from the Office of Government Ethics, covered the current and pending conflict-of-interest laws and their administration at several panel meetings. Colleen Preston, general counsel, House Armed Services Committee, and Andrew Effron, chief counsel, Senate Armed Services Committee, came to discuss legislative proposals to extend postemployment restrictions.

Elliot Richardson and Lloyd Cutler, who not only have dealt with these issues in government but who continue to follow these issues through service on such bodies as the National Commission on the Public Service and the quadrennial Commission on Executive, Legislative and Judicial Salaries, also met with the panel to share their views and concerns.

The staff of the Council for Excellence in Government shared their draft profiles and preliminary data on the "Science 60," which just appeared in *The Prune Book: The 60 Toughest Science and Technology Jobs in Washington* (Trattner, 1992). The profiles provide a broader understanding of the range of high-level executive positions that have significant S&T content, and can be usefully read in conjunction with our report.

The panel benefited greatly from the efforts of staff, who gathered and synthesized the latest information on a variety of topics, particularly the welter of conflict-of-interest rules and the fast-changing executive pay situation. Jim Pfiffner, professor of government and politics at George Mason University, contributed his expertise as a consultant on the policy management roles of the presidency.

Last but not least, I would like to thank the panel members for their willingness to devote considerable time, on short notice, over a short period of time, to a difficult and serious set of issues that is not very visible but nevertheless affects us all greatly.

KENNETH W. DAM
CHAIRMAN OF THE STUDY PANEL

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INTRODUCTION

This report examines the federal government's capacity to attract highly qualified individuals to serve in the top-level executive positions involved in science and technology (S&T) decisionmaking and program management. It addresses the problems encountered in recruiting and keeping talented experts, especially scientists and engineers, as presidential appointees and contains recommendations for improving the situation.

Science, Technology, and Government

The government of the United States today is deeply involved in important policy areas that have significant scientific and technical components. The science and technology activities of the federal government are vitally important for economic productivity and technological competitiveness, national security, an improved environment, better health, and many other purposes. As scientific and technological knowledge continues to expand at a rapid rate, the government needs ever greater capacity to formulate, carry out, and monitor S&T policies and programs and their effects. The need for highly competent and dedicated scientists, engineers, and other experts in top policy and program management positions in the federal government has never been greater.

Leadership of the government's role in science and technology is exercised by executives in fewer than 100 positions. They include high-level posts in the Executive Office of the President and in the agencies and departments that support scientific and industrial research and development; manage large-scale defense, space, energy, health research, and environmental programs; and regulate activities with large technology components. Most of the top S&T positions are held by

scientists or engineers, and the rest could be. These high-level officials stand at the point where government intersects with science and technology.

The nation needs exceptionally able scientists and engineers in these executive positions to weigh the advice of technical specialists and to make key programmatic and policy decisions. The government's capacity to perform these science and technology functions would be seriously affected by increasing difficulties in recruiting highly qualified personnel. This report focuses on the 78 or so executive branch positions filled by the President, with the consent of the Senate (called PAS positions). [A companion report by a National Research Council committee addresses the problems of recruiting and retaining career scientists and engineers, some of whom also hold top science and technology positions (NRC, 1992).]

Most of the research and development work in the United States takes place in the private sector, including more than three-quarters of the research and development (R&D) paid for with federal dollars. The talent pool of scientific and engineering expertise available to lead the national R&D enterprise is therefore mostly in the private sector. Although the federal government has access to significant basic and applied research expertise in its own career service, it is particularly dependent on the business sector for the technological expertise needed to oversee large-scale engineering programs in the energy, space, and defense areas. Accordingly, since World War II, the federal government has relied for S&T leadership on the invigorating flow of highly qualified scientists and engineers from (and back to) colleges and universities, national laboratories, high-technology firms, and other private organizations.

Problems

The United States' past success in science and technology has been built on this unique system of cooperation involving the university, business, and nonprofit sectors. These scientific and engineering personnel not only carry out government-supported work, but some leave the private sector to serve the government in top policy and management positions for relatively short periods in their careers. This in-and-out system of executive leadership for federal science and technology has served the nation well and should be carefully nurtured. Instead, a number of factors are making it harder to recruit highly

qualified scientists, engineers, and medical experts from the private sector for top government leadership positions.

The factors cited most often include:

- More stringent and confusing postgovernment employment restrictions;
- The longer, more burdensome, and more intrusive nomination and Senate confirmation process;
- Stricter and more costly conflict-of-interest provisions;
- More detailed requirements for public financial disclosure;
- Pay that is not competitive with comparable positions in the private and nonprofit sectors;
- The high costs of moving to and living in Washington;
- Increased public scrutiny of one's personal life;
- Decreased capacity of government to carry out effective programs; and
- Lower public esteem for and prestige of public service.

Although these factors may affect all potential candidates for presidential appointments to some degree, they can have a differential impact on the government's ability to attract researchers from academia and industry and managers with technical backgrounds from industry. Government service does not usually further the careers of practicing scientists and engineers or help the career prospects of corporate executives. The government may attract academic scientists and engineers who are ready to switch into administration, but it faces real problems in recruiting midcareer corporate executives for whom a leave of absence is a threat to further advancement. In many cases, corporate executives with scientific and engineering backgrounds are the most knowledgeable about the policies and programs the government manages or oversees—for example, in the defense, energy, and space sectors and in emerging areas like biotechnology.

As a result of the factors listed above, the time it has taken to fill key S&T leadership positions has been increasing. For example, it took the Bush Administration an average of nine months to fill key S&T positions, up from six months in the Reagan Administration. Some critical positions have taken even longer—for example, it took 22 months to recruit a Director of the Office of Energy Research. This lag in filling positions has a significant and harmful effect on the government's ability to manage ongoing programs and to undertake S&T-based initiatives.

It is not only taking longer to fill key positions but it is also becoming harder to recruit top candidates. It is impossible to document the increasing rate of turndowns because most candidates drop out before a formal job offer is made, but panel members familiar with recent openings in the defense, energy, and health areas know of cases where it was necessary to go to the tenth, twentieth, and even the thirtieth name on a list of desirable candidates. While some outstanding appointments have nevertheless been made, the reluctance of the most desirable candidates in recent years is disturbing.

High turnover is a related concern. A recent study by the Council for Excellence in Government (CEG) found that average tenure in 54 top executive branch S&T positions has been 2.5 years (including those holding a position on an acting basis while a new candidate was being recruited and confirmed) (Trattner, 1992:5). Turnover is particularly high in certain areas; the CEG study cited the Environmental Protection Agency, parts of the Energy Department, the Consumer Products Safety Commission, and the Food and Drug Administration. The Defense Department has had four Under Secretaries for Acquisition since the position was created in 1987. These trends are troubling because excellence, continuity, and stability are especially needed in science and technology programs.

CONSEQUENCES

One of the most difficult challenges facing modern government is to make decisions about complex matters that take into account the constantly evolving scientific knowledge and technological changes that occur by and large outside the government itself. To meet this challenge, the nation cannot rely on generalists alone, and in fact, we have developed a tradition of recruiting highly trained individuals to fill key S&T leadership positions in the government. If we fail to attract excel

lent people to these positions, the quality of policymaking will suffer.

The panel concluded—after examining the record, reviewing reports, and conferring with government recruiting officials and with current and past incumbents of S&T-related positions—that there is considerable evidence of increasing difficulty in recruiting and keeping the highly qualified appointees the government needs to serve in S&T leadership positions. We are very concerned by this deterioration in the government's capacity to fill its top S&T-related positions. It has a significant and harmful effect on the government's ability to manage ongoing programs and to undertake new initiatives. If the situation continues, the government's ability to make key decisions in the face of rapid scientific and technological change—and to design, carry out, and evaluate effective and responsive programs—will be very seriously affected. The nation can ill afford the consequences of leaving unattended this problem of executive recruitment.

Solutions

What can be done? Staffing an administration is one of the most important responsibilities of a President. The abilities and energy of the President's appointees in top positions in the executive branch are key determinants of policymaking and policy execution. This is especially true for S&T positions, where current expertise is needed to deal with a fast-changing scientific and technological environment. As a nation, we are facing a serious problem of recruitment and retention in government leadership positions, the effects of which have been accumulating steadily for several decades and promises to worsen. The long-term nature of this erosion of governmental capacity led the recent National Commission on the Public Service (Volcker Commission) to call it a "quiet crisis" (1989a). The multiple and incremental causes of the problem call for multiple and steady responses on several fronts.

The panel focused on three strategies for improving the government's ability to attract the talent it needs for top positions in which science and technology policies are developed and carried out:

A. Reducing the hurdles of the appointment process and the disincentives to government service;

B. Expanding the pool of potential talent by improving the White House's outreach to the science and engineering community and using more effective techniques for recruiting leading scientists and engineers; and

C. Restructuring certain positions to make them more attractive to scientists and engineers.

REDUCING HURDLES AND DISINCENTIVES

The presidential appointment process has many hurdles and disincentives that cumulatively deter potential nominees. It has become an ordeal that fewer and fewer of the most highly qualified scientists and engineers are willing to undergo. Many of those who do serve must make large financial sacrifices, suffer loss of privacy, and risk unjustified accusations of scandal. The major hurdles include: postemployment restrictions that are becoming too broad in application; the cost of complying with conflict-of-interest interpretations; the perception of inappropriate ideological "litmus tests"; inadequate compensation; the belief that it is much harder to accomplish anything in and through government; and the lengthier and more burdensome appointment process.

As a result of these hurdles, fewer scientists and engineers consider serving as presidential appointees, and recruiters are experiencing increased numbers of turndowns before they find willing candidates. Turnover is high. Important positions remain vacant for longer periods. It is becoming more difficult to recruit those in midcareer rather than the very young or those approaching retirement, because the costs for those with children in college—and who face significant postgovernment employment restrictions—are very high.

Several hurdles have been lowered recently. The Ethics Reform Act of 1989 permits candidates who have to resolve conflicts of interest by divesting stocks or other assets to convert or "roll over" the proceeds into a neutral investment vehicle, such as a diversified mutual fund, rather than having to pay capital gains taxes on them all at once. The same act also mandated a substantial increase in executive pay levels—nearly 45 percent by the beginning of 1992—and established new mechanisms for ensuring that salary levels continue to increase annually with inflation.

Overall, however, the situation is worsening as other hurdles—sub

stantive and procedural—increase in number and size, and they counteract the pay increases and helpful tax changes. As a result, governmental capacity to plan, implement, and evaluate S&T-intensive programs is deteriorating. Continued leadership of the United States in such areas as biotechnology, manufacturing, medical science, space, energy, and defense is threatened.

Some of the most important hurdles are conflict-of-interest laws that have proliferated piecemeal in response to specific scandals. The integrity of government and public trust in government must be maintained, but, as a nation, we also pay a high cost if top leadership positions are not filled by the most qualified and experienced experts.

The panel concluded that the unintended costs of broader conflict-of-interest restrictions—particularly those dealing with postgovernment employment—have reached the point where they substantially outweigh their benefits. We believe, however, that it is possible to have fair and effective conflict-of-interest laws that are compatible with, indeed would promote, public service by highly qualified and motivated individuals from industry, academia, and other sectors who are on the cutting edge of science and technology.

Reasonable Postgovernment Employment Restrictions

According to presidential recruiters, as well as scientists and engineers who have been approached by recruiters, the laws restricting postgovernment employment have become the single biggest disincentive to public service, now that pay levels have been increased substantially. Overlapping, conflicting, confusing, and in some respects overly broad postemployment restrictions that were suspended with the passage of the Ethics Reform Act of 1989 have come back into effect over the last year, and there is constant pressure to broaden the restrictions further by banning officials involved in specific procurement actions from working in any capacity for any competing contractors for periods of one, two, or three years.

A particularly damaging feature of some recently imposed and proposed restrictions is that they often treat presidential appointees who have broad procurement oversight responsibilities as having participated personally and substantially in a wide range of contract determinations under their official jurisdictions. As a consequence, such high-level appointees may be effectively barred from immediate postemployment

opportunities with many or all of the firms or institutions at which they could practice their career specialties.

These postemployment restrictions have become the biggest problem in recruiting high-level scientists and engineers. Many important areas of S&T involve relatively few contractors. Thus broad postemployment restrictions can make it virtually impossible for specialized individuals to continue their careers in their areas of expertise because the relevant employers do government work in that area and are very likely to have bid on government contracts. The recent efforts to create a scandal-proof government have gone so far that they, on balance, do more harm than good by deterring talented and experienced scientific and engineering personnel from taking senior government positions. These laws afford little additional ethical protection at very high cost—a bad bargain for the government and the public.

Recommendation A-1. Government postemployment restrictions should be revised to balance the public's interest in ensuring the integrity of government operations with its interest in attracting the best talent to government service. The basic laws governing postgovernment employment should be revised and codified in 18 U.S.C. §207. The fundamental aim of postemployment restrictions should be to regulate improper conduct directly rather than to ban employment with particular employers per se, as has been done with certain officials of the Department of Defense since 1985 and as has been proposed in Congress for governmentwide application. Instead, section 207 should be revised to include restrictions on improper postemployment conduct, to curb improper influence not only by prohibiting personal representation but also by prohibiting use or disclosure of specific types of inside information, such as that which is integral to source selection. Subject to these restrictions, participation in work under contracts should be allowed so that the government may benefit from the expertise of its former employees. To the extent that a ban on employment has to be adopted, it should be of short duration and narrowly applied to officials who have had substantial personal involvement in awarding or administering a contract. Current provisions for waivers and exemptions from postemployment restrictions of section 207 and other laws that apply to critically needed scientific and technological experts and employees of the national laboratories should be used to the fullest extent needed. Finally, federal executives should be able to obtain "safe harbor" opinions from agency ethics officials regarding the applicability of postemployment restrictions in their cases. The administrative burden

of providing such opinions would be reduced greatly if the postemployment provisions were revised and combined into a single, coherent set of laws, as recommended.

Consolidation and Periodic Review of Ethics Laws

The government's conflict-of-interest and other ethics laws should be fair, clear, and consistent. Currently, the laws—especially those concerning postemployment restrictions—are overlapping and inconsistent in content and in their application to comparable agencies, making them hard to understand or enforce. The resulting uncertainty makes it difficult for the Office of Government Ethics, designated agency ethics officials, or personal legal advisors to tell appointees what restrictions and bans will apply to them. This uncertainty often deters candidates from agreeing to be nominated.

There is no mechanism for periodic review of ethics laws to see if they work and are worth their cost or if they need to be updated in response to changed conditions. This situation perpetuates the existence of multiple ad hoc measures that are inconsistent with each other and create unnecessary hurdles in the appointment process.

Recommendation A-2. To ensure clear understanding and more effective enforcement, the government's ethics laws should be streamlined and clarified as soon as possible, and they should be contained in a single comprehensive section of the U.S. Code. They should then be evaluated periodically for their impact and effectiveness in ensuring ethical conduct with as little negative effect on recruitment and retention of scientific and engineering personnel as possible. Overlapping laws should be repealed immediately. Clear and consistent ethics laws will would let appointees know what is expected of them. This would increase compliance and improve any enforcement that is needed. This consolidation, which could be based on the work of the 1989 President's Commission on Federal Ethics Law Reform, should commence immediately. Subsequently, periodic evaluations should be carried out with—and needed revisions suggested by—a commission appointed by the President, Senate, and House of Representatives. The commission should consist of representatives from the executive and legislative branches and the private sector (academia, industry, nonprofit), and it should report publicly every ten years (or more often if necessary).

Reasonable Resolution of Substantive Conflicts of Interest

Some candidates for presidential appointments own stocks and other assets that pose a potential conflict of interest, if the candidates' official actions may affect or appear to affect the value of such an asset. This situation is more likely to pertain to individuals recruited from industry to fill top S&T positions in the energy, defense, and space areas than to those recruited to fill executive positions in many other program areas. Many industry scientists and engineers have stock and stock options in the companies they come from, and the companies, in turn, are probably competing for federal contracts. In these cases, which are few in number but important, divestiture of assets is common because it automatically eliminates the possibility of a conflict of interest. In some cases, appointees are required not only to divest assets in a former employer before taking a federal position, but also to disqualify themselves from all involvement with that company while holding the position. Normally, recusal after full divestiture should not be necessary (unless the appointee retains pension or similar rights with the former employer). In many cases, recusal alone should be a sufficient remedy. We believe that the public interest is better served if the least drastic—and least costly—remedy is used in each case, because it would improve recruitment of needed personnel.

Recommendation A-3. In applying the conflict-of-interest laws, divestiture of assets should not be considered the primary remedy and therefore required routinely. Recusal, coupled with full public financial disclosure, should be considered the primary remedy in most cases by the Senate, the Office of Government Ethics, and agency ethics officials. The panel believes that more reasonable resolutions of substantive conflicts of interest would avoid unnecessary discouragement of prospective appointees. Divestiture has been used more often to cure conflicts of interest since legislation allowing "rollover" of the proceeds from divested assets into a neutral investment vehicle was passed in 1989. Asset rollover does not help in all cases, however. Some assets have no present value that can be realized (e.g., stock options), and others cannot be divested all at once without major harm (e.g., a family-owned firm). If divestiture is necessary, it should not be coupled with recusal unless the appointee retains some interest, such as pension rights.

Nonprofit Job Tenure

Leaves of absence have proved to be an effective way to recruit top scientists and engineers from academia, tax-exempt medical and research institutions, and the national laboratories for important presidentially appointed positions. We recommend below that these institutions grant them freely, since they have an important stake in the quality of the government's S&T leadership. The current practice of making appointees sever all ties with industrial employers should not be inappropriately extended to candidates from the academic and nonprofit sectors. There may be occasional instances where resignation is necessary, but if requirements to resign tenured positions became common, the chilling effect on government's capacity to recruit from the nonprofit sector—including colleges and universities, national laboratories, and research institutions—would be large and very damaging.

Recommendation A-4. University faculty, and scientists and engineers from nonprofit medical institutions, national laboratories, and other nonprofit research organizations, normally should not be forced to give up tenure in their home institutions. In fact, leaves of absence for tenured faculty and other nonprofit personnel should be encouraged to increase the government's capacity to recruit and retain well-qualified scientific and engineering personnel in high-level positions. Resignation is only called for in those few instances where major decisions affecting the home institution are pending and are too central to the job for recusal to be practical. In those rare cases where resignation may be justified, there should be no implicit arrangements for the appointee to return.

Reducing Other Hurdles and Costs

Adequate Compensation Until recently, low and inadequate pay was a major disincentive to serve, even in presidentially appointed executive level positions. Although the executive pay situation has eased in the short term, it will not be adequate in some cases and will deteriorate again unless there are regular cost-of-living adjustments. The report therefore has recommendations for dealing with the out-of-pocket costs of serving, including the need for procedures for maintaining the adequacy of executive pay levels (see Recommendations A-5 through A-7 in chapter 2).

Administrative Streamlining The appointment process itself has become too elaborate and lengthy, which unnecessarily deters some potential candidates and hinders an administration in providing effective leadership to the government. The report has recommendations for reducing the sheer length and paperwork burden of the appointment process itself (see Recommendations A-8 and A-9 in chapter 2).

IMPROVING RECRUITMENT AND EXPANDING THE POOL OF CANDIDATES

The panel also reviewed the situation from the perspective of the departments and agencies and the White House, which are faced with recruiting scientists and engineers who do not usually consider a tour as a political appointee to be a normal step in their careers. Because the White House Office of Presidential Personnel (OPP) is overburdened with a large number of placements to make, especially at the beginning of an administration, it is unable to conduct the type of active search needed to find the best talent for positions in specialized areas. Therefore, the current system too often fails to identify and recruit the best available talent for presidentially appointed positions involving scientific or technological expertise. In addition, the criteria used by the OPP to screen candidates are too frequently misunderstood in the science community, leading to damaging perceptions that political and ideological factors are overemphasized in the selection process. We concluded, therefore, that it is necessary to find ways to improve the White House's outreach to the research and engineering community and to encourage the White House, industry, academia, and scientific societies to work together in expanding the pool of potential talent.

Greater Reliance on Department and Agency Recruitment

The locus of decisionmaking for subcabinet political appointments should be with the cabinet secretaries and agency heads. We believe that shifting the balance toward the departments and agencies will improve the chances of recruiting and keeping first-rate scientists and engineers in presidentially appointed positions. The OPP faces too many demands to conduct the active search and negotiation process needed to fill the 78 or so S&T positions among the 550 full-time PAS jobs, along with nearly 2,350 additional full-time positions and several thousand

part-time appointments to boards and commissions that must be made at the beginning of each administration and kept filled thereafter. Whereas the OPP is likely to be under intense pressure to fill positions for political reasons, department and agency heads have a large stake in filling S&T positions with people of high expertise. They are also better able to match the person with the job, and they are more likely than the OPP to be connected to the networks in which technical experts operate professionally.

Recommendation B-1. Without giving up their exclusive right to make executive appointments, presidents should place greater reliance on cabinet secretaries and agency heads for active identification and recruitment of candidates for subcabinet positions involving S&T expertise. The White House cannot hope to fill the thousands of PAS and other political positions that must be filled at the beginning of an administration in a timely fashion or adequately supervise them thereafter. In any case, most appointed S&T positions are level IV or V, are primarily specialized in nature, and work primarily with department leadership, not the White House. We believe, therefore, that the departments and agencies should play a larger role in identifying and recruiting candidates.

KEY PERSONNEL ROLE FOR THE ASSISTANT TO THE PRESIDENT FOR S&T

In attracting the best scientists and engineers for leadership positions in the executive branch, the importance of presidential leadership cannot be overemphasized, even where cabinet secretaries and agency heads take the lead in identification and recruitment. The President must be perceived in the research community to value science and respect first-rate science personnel. The selection and role of the President's Assistant for S&T is crucial to this perception.

One of the key roles of the Assistant for S&T is to assist the President in recruiting the best scientific and engineering talent in the country for top positions in the S&T-intensive agencies (Trattner, 1992:18). In recent decades, however, presidential assistants for S&T have been chosen too late to participate in the all-important initial recruitment effort of new administrations, and they have too seldom played a strong role in recruitment once they were on board. It is important that the Assistant to the President for S&T be of high stature in the research community and, if he or she helps with presidential

recruiting, the acceptance rate of the most qualified scientists and engineers can be increased.

Recommendation B-2. The President should designate the Assistant to the President for S&T early in the transition and instruct him or her to work closely with department and agency heads and the Office of Presidential Personnel in an active effort to identify and recruit outstanding scientists and engineers for presidential appointments. The President's Assistant for S&T also should help recommend changes, whether in personnel or in the authorities, location, reporting relationships, and staff and budgetary resources of key S&T positions that may be required to make the positions more effective and attractive.

SPECIALIZED CAPACITY OF THE OFFICE OF PRESIDENTIAL PERSONNEL FOR S&T RECRUITMENT

The most qualified scientists and engineers are probably not looking for appointed positions in the government. They are less likely to be living in the Washington area already or involved in partisan politics than are capable individuals outside the S&T community. It is essential to reach out actively to this special, limited pool of potential appointees.

Although some of the best scientists and engineers do not think of seeking a presidentially appointed position and have to be actively recruited, the OPP does not have adequate capacity—that is, a separate unit with specialized personnel—for identifying and assisting in recruiting them. Also, in some cases, initial contacts with prestigious scientists and engineers have not been well handled, leading potential candidates to believe that inappropriate criteria are being used or that political criteria, while appropriate to some degree, are being overemphasized relative to technical qualifications.

Recommendation B-3. The Office of Presidential Personnel should have a special unit charged with assisting in the recruiting of outstanding scientists and engineers, and it should be given sufficient resources to ensure a high level of professionalism in recruitment. The new unit for scientific and engineering recruitment should work closely with the Assistant to the President for S&T and the department and agency heads in identifying and approaching potential nominees for the administration, and special outreach efforts should be undertaken in

conjunction with professional associations of scientists and engineers. We believe that specialized and experienced staff, working in conjunction with the Assistant to the President for S&T and concerned department and agency heads, will help the departments and agencies to better perform the recruitment function.

The success of these recommendations aimed at improving the outreach and recruitment process depends critically on close cooperation among the departments and agencies, the Assistant to the President for S&T, and Assistant to the President for Presidential Personnel. It is necessary and appropriate for the OPP to manage the appointment process, because these are presidential appointments. OPP is a small staff agency, however. Therefore, it must and should rely on the department and agency heads for much of the work in identifying and recruiting prospective appointees, especially for lower-level executive positions within the departments—e.g., assistant secretaries and bureau heads. Finally, the Assistant to the President for S&T should play a key role in identifying and recruiting candidates for certain positions considered key to the President's program and to the government's major S&T efforts, and should monitor for the President the overall effectiveness of the recruitment process where it counts—namely, in successful scientific and engineering policies and programs.

Other Recruiting Recommendations

While the federal government should improve its recruitment process as much as possible, the other partners in the national S&T enterprise also have an interest and an obligation to encourage their most qualified leaders to serve in top government policy and management positions. The report contains several recommendations aimed at increasing the involvement of the industrial, academic, and nonprofit sectors and of the professional scientific societies in encouraging scientists and engineers to serve in the government (see Recommendations B-4 and B-5 in chapter 3).

MAKING THE JOBS THEMSELVES MORE ATTRACTIVE

The preceding recommendations are aimed at finding the most talented individuals and reducing impediments to their appointment. The panel is also concerned with making the positions themselves more

attractive, chiefly by ensuring that incumbents, once appointed, can see their expert judgment effectively coupled with policymaking.

There is a growing belief in the scientific and technological communities that the top governmental jobs are becoming more difficult to do well. In some part, this is because of a perception that technical expertise and judgment are not given their due weight in making policy—or, sometimes, in making the appointments themselves.

The panel wishes to emphasize that, in making the following recommendations, it does not imply that politics can or should be removed from the top S&T jobs. S&T appointees should be willing and able to support administration positions. But their basic job is to bring technical knowledge and informed judgment to the policy arena and to foster policies that are defensible on both political and technical grounds.

It follows that political considerations should not be permitted to prevail—in reality or perception—without the scientific and technical considerations being carefully considered. Unfortunately, there are too many reports in recent decades (especially those associated with ideological or "litmus test" rejections of qualified potential nominees) that send a message that an incumbent's technical integrity may be compromised. We thus present some strategies for improving the attractiveness of S&T positions.

Appropriate Reclassification and Restructuring of Positions

Over time, many federal S&T positions have changed. Some have become more politicized in relation to their technical content, and others have been distanced from final decision authority by intervening layers in the bureaucracy. Because government is best served if the best technical judgment on difficult public policy issues is heard, considered, and balanced with political and other considerations by decisionmakers, the S&T executive leadership structure should be carefully designed to ensure that unbiased and accurate technical judgments can be made and directly applied to relevant policy choices.

For example, although they should not be removed from politics, positions whose incumbents are expected to act primarily on long-term scientific or technical grounds should be insulated from day-to-day partisan pressures, and in selected cases, from automatic removal with changes in administration.

Recommendation C-1. The political status, responsibilities and authorities, and reporting relationships of the government's top S&T positions should be reviewed periodically—and restructured as necessary—to ensure that the unbiased scientific and engineering judgment of incumbents is preserved and is directly introduced into the policy process. Such a process will maintain the effectiveness and relevance of these important positions, which in turn will ensure that highly qualified and capable individuals will want to serve in them. The reviews should be a responsibility of the Assistant to the President for S&T and the Office of Science and Technology Policy. Independent reviews should be conducted periodically by a private organization or set of organizations concerned with the government's effectiveness in carrying out its scientific and engineering missions.

Suitable strategies that might apply to particular positions include:

- Fixed terms, which can be structured in several ways. (Fixed terms are already used for a few positions, such as the Surgeon General of the Public Health Service and the Director of the National Science Foundation, and have been suggested for others, such as the Director of the National Institutes of Health).
- Reorganization to reduce "layering". Certain positions should be considered for elevation in level and status to make them more effective in carrying out their responsibilities, and thus more attractive to outstanding candidates. (The Commissioner of the Food and Drug Administration and the Director of NIH, for example, are several layers removed from the Secretary of Health and Human Services and are subjected to more clearance hurdles than officials in other departments and agencies with whom they must coordinate).
- Removal from the Senate confirmation process altogether, in the case of some jobs. This was done with assistant directors of the NSF.

Reducing the Administrative "Overbrush"

The number of presidential appointments to full-time executive branch positions requiring Senate confirmation has increased from about 150 in 1965 to about 550 today. In addition, the number of other

political appointments processed through the OPP has increased greatly (with Schedule C positions nearly doubling to 1,700 since 1976, and the addition of 650 noncareer positions in the Senior Executive Service after 1978). The primary problem is the greatly increased number of political assistants to higher-level officials overseeing S&T agencies. These appointees—e.g., noncareer SES holding deputy assistant secretary or similar positions and Schedule C staff assistants—tend to dilute decisionmaking authority held by agency and bureau heads. This hampers the ability of S&T leaders to manage their programs and encourages second-guessing or "micromanagement" of decisions that are made by the highly qualified officials who are in the best position to reach informed judgments involving technical as well as political and economic considerations.

Recommendation C-2. The overall reduction in political appointees (especially in Schedule C and noncareer SES jobs, but also in PAS positions), as earlier recommended by the National Commission on the Public Service, should be carried out. Restricting somewhat the number of PAS positions and reducing greatly the number of overlying political assistants would improve governmental S&T by increasing the accountability and authority of the key leadership positions, which in turn would improve recruitment of top candidates.

The panel fully realizes that this recommendation may seem unrealistic, because politically it would be difficult to achieve. We believe, however, that it is important to point out that the proliferation of political appointees is part of the problem in effective governance. Political layering and excessive interference from Schedule C and political SES appointees who work for higher level officials constitute important disincentives to serve. This is especially a problem in the S&T policy and administration area, because too much layering of authority affects the input of technical considerations in decisionmaking.

Another disincentive for those considering appointment to an S&T leadership position is the time it takes to recruit candidates for PAS and other politically appointed positions under them and get them through the confirmation process. This reduces the time and energy they have to devote to carrying out the substance of their jobs.

At the very least, if it is impossible to reduce the overall number of political appointments at this time, there should be a presumption against creating additional positions without considering the negative effects on the recruitment and retention of highly qualified officials as well as effective decisionmaking and accountability.

1

Introduction

SCIENCE, TECHNOLOGY, AND GOVERNMENT

This report examines the federal government's capacity to attract highly qualified individuals to serve in the top-level executive positions involved in science and technology decisionmaking and program management. It addresses the problems encountered in recruiting and keeping talented experts, especially scientists and engineers, as presidential appointees and contains practical recommendations for improving the situation.

The government of the United States today is deeply involved in important policy areas that have significant scientific and technical components. This involvement reflects the extraordinary expansion of scientific knowledge in recent decades, the technological opportunities presented by that increased knowledge, and the economic and social impacts of the rapid technological development that has resulted. The science and technology (S&T) activities of the federal government are vitally important for economic productivity and technological competitiveness, national security, an improved environment, better health, and many other purposes, including support of the national S&T enterprise itself. As scientific and technological knowledge continues to expand at a rapid rate, the government needs ever greater capacity to formulate, carry out, and monitor S&T policies and programs and their effects. The need for highly competent and dedicated scientists, engineers, and other experts in top policy and program management positions in the federal government has never been greater.

Scientifically and technologically, the United States has led the world for most of this century. Whether in putting men on the Moon, stealth aircraft over Baghdad, or medical technology into hospitals, the United States has been in front. We have come to think of this lead as an American birthright. It is not. In the face of fast-paced technological

change and international competition, leadership cannot be taken for granted. It must be actively maintained.

The success of American science and technology has been based, in no small measure, on a multitude of partnerships between the federal government and the rest of the country: especially research institutions, universities, and businesses. Such partnerships require cooperation and constant communication. They also require, with our current personnel arrangements, the movement of scientific and technical leaders between the federal government and research institutions, universities, and businesses.

Leadership of the government's role in science and technology is exercised by executives in fewer than 100 positions. This report focuses on 78 or so presidentially appointed positions subject to Senate confirmation (called PAS positions).[1] They include high-level posts in the Executive Office of the President and in the agencies and departments that support scientific and industrial research and development; manage large-scale defense, space, energy, health research, and environmental programs; and regulate activities with large technology components. Most of the top S&T positions are held by scientists or engineers, and the rest could be. It is these high-level officials who stand at the point where government intersects with science and technology.

The nation needs exceptionally able scientists and engineers in these executive positions—to weigh the advice of technical specialists and to make key decisions on what should be done, lead the resulting programs, and evaluate the results. The government's capacity to perform these science and technology functions would be seriously affected by increasing difficulties in recruiting highly qualified personnel with the scientific and engineering training and experience needed in the top science and technology positions in the executive branch.

Most of the research and development work in the United States takes place in the private sector, including more than three-quarters of the research and development (R&D) paid for with federal dollars. The

[1] The rest are career and noncareer Senior Executive Service or equivalent positions, such as the Director of the Defense Advanced Research Projects Agency, the Director of the Centers for Disease Control, and Associate Administrators of the National Aeronautics and Space Administration. *Improving the Recruitment, Retention, and Utilization of Federal Scientists and Engineers*, a companion report by a National Research Council committee, addresses the problems of recruiting and retaining career scientists and engineers, some of whom hold these top science and technology positions (NRC, 1992).

talent pool of scientific and engineering expertise available to lead the national R&D enterprise is therefore mostly in the private sector. Although the federal government has access to significant basic and applied research expertise in its own career service, it is particularly dependent on the business sector for the technological expertise needed to oversee large-scale engineering programs in the energy, space, and defense areas. Accordingly, since World War II, the federal government has relied for S&T leadership on the invigorating flow of highly qualified scientists and engineers from (and back to) the colleges and universities, national laboratories, high-technology firms, and other private organizations.

This report documents some disturbing trends in recruitment and retention for presidentially appointed S&T positions. It is taking longer and longer to fill them, in part because of delays in the nomination and confirmation process, such as more detailed financial disclosure requirements and longer background investigations by the Federal Bureau of Investigation (FBI). It also takes longer because more and more candidates turn down the opportunity to serve. Tenure is relatively short among those who do take positions.

Recruitment and retention difficulties arise from several sources, which are addressed in this report. The panel is most concerned about recent changes in federal conflict-of-interest and procurement laws that threaten to curtail sharply, even virtually to halt, the movement of top scientific and technical personnel between the government and the private sector. This in turn would impair the flow of communication and cooperation between the government and the private sector that is essential for American technological excellence. We are now at the point where either these laws and regulations must be substantially changed to permit and encourage the best scientists and engineers to serve in the federal government, or we must adopt a different system—e.g., a very highly paid and well-educated elite corps of such officials who spend their entire careers in government service.

This panel has strong doubts that such a new personnel system would work nearly as well as the system that has made American science and technology so successful. The smooth functioning of such a new personnel system would be an entirely uncertain proposition. But doing nothing to change the current system risks a clear, prompt, and substantial decline in the government's ability to deal with scientific and technical issues.

GOVERNANCE OF SCIENCE AND TECHNOLOGY

Not surprisingly, because of the scope and multiplicity of federal involvement in S&T policies and programs, many agencies in the federal government are headed by scientists and engineers or, in some cases where the head is not a scientist or engineer, deputies with scientific or engineering credentials. The departments in which these agencies are located typically have deputy secretaries and assistant secretaries overseeing the agencies with S&T-related missions, and many of these oversight positions are held by scientists and engineers. Most of these leadership posts are not held by career government scientists and engineers, but by substantive experts who have spent most of their careers in the private sector and who are serving for several years in presidentially appointed positions. They are not politicians in the sense that they have sought elective office, but they are politically appointed by an elected official, namely, the President.

What Are the Jobs?

Although no list of top federal S&T positions can be exact, this panel identified some 78 S&T executive leadership positions that are appointed by the President and confirmed by the Senate (see Appendix B).[2] The Council for Excellence in Government (CEG) recently profiled what it considers the 60 "toughest" S&T-intensive jobs in Washington (Trattner, 1992), and the 50 executive branch positions covered in the CEG book are included in both lists (Appendix B compares the two lists).

Some of the top jobs in the federal government that call for scientific and technical expertise and experience are leadership positions in mission agencies that conduct or apply R&D or both, or support R&D in the private sector through grants and contracts. Some of these are in independent agencies—e.g., the Director and Deputy Director of the National Science Foundation and the Administrator and Deputy Admin

[2] The Director of the National Cancer Institute is appointed by the president without Senate confirmation, but is included here. As noted earlier, some important S&T-related positions are in the Senior Executive Service and do not have to go through the presidential appointment process, although they are generally subject to the same broad conflict-of-interest and postemployment provisions.

istrator of the National Aeronautics and Space Administration. Others are in the major departments—e.g., Director of the National Institutes of Health in Health and Human Services; Director of the National Institute of Standards and Technology, Under Secretary/Administrator of the National Oceanic and Atmospheric Administration, and Under Secretary of Technology in Commerce; the Director of the Geological Survey in Interior; and the Director of the Office of Energy Research in Energy.

Another set of key federal S&T positions includes the head, top deputy, or commissioner positions in agencies with regulatory missions that rely heavily on S&T. Examples include the Nuclear Regulatory Commission, Environmental Protection Agency, Food and Drug Administration, Federal Aviation Administration, and Occupational Safety and Health Administration.

Others head statistical agencies, such as the Bureau of Labor Statistics, Bureau of the Census, National Center for Health Statistics, Center for Education Statistics, and Bureau of Justice Statistics.

There are many under secretary and assistant secretary positions overseeing S&T activities in the large departments, for example, the Under Secretary for Acquisition in the Department of Defense, the Assistant Secretary for Health in the Department of Health and Human Services, and the Assistant Secretaries for Water and Science and for Fish, Wildlife, and Parks at the Interior Department. The Directors of Defense Research and Engineering and of Energy Research are expected to play central roles in policy development and administration in their departments, Defense and Energy, respectively.

There are several key S&T positions in the Executive Office of the President, including the Assistant to the President for Science and Technology, who heads the Office of Science and Technology Policy (OSTP), the four associate directors of OSTP, and the Chairman of the Council on Environmental Quality. Several associate directors of the Office of Management and Budget who hold political SES positions have important S&T oversight responsibilities (for example, for natural resources, national security, and human resources).

This diverse set of jobs has in common an understanding that they are primarily technical in nature, even though most incumbents are politically appointed. It is therefore traditional that those holding most such positions should have relevant scientific or technical expertise and experience. For example, the Director of Defense Research and Engineering has always been an engineer with a background in weapons development. The Director of NIH is always a leading biomedical researcher with a Ph.D. or M.D. or both. The Director of Energy

Research is usually a physicist or chemist with a distinguished research record. In other cases, scientific or technical credentials are not traditional but could be beneficial—e.g., Administrator of the Environmental Protection Agency, who is almost always a lawyer.

Who Holds These Positions?

The CEG collected biographical information on the incumbents of its "Science 60" (actually, 62). An examination of the 45 Senate-confirmed presidential appointments among the 62 shows that about two-thirds received their highest degree in science (including six M.D.'s) or engineering, with three times as many scientists as engineers in the sample. About one in five is a lawyer. The remainder includes several appointees with social science degrees.

The proportion holding advanced degrees is striking, indicating the level of expertise called for in these positions. About nine in ten have an advanced degree. Two-thirds hold a doctorate (not counting seven with J.D.'s). Half of the 6 engineers hold Ph.D.'s.

The career patterns are more complicated. Only about half the incumbents moved directly from the private sector into their current position, as would be predicted by a simple in-and-out model. Of these, about a third came from the business sector and another third came fresh from the academic sector. About one in five came from a "think tank." Only two came from the congressional staff, and one moved from the state and local government sector.

The other half moved to their current position from within government, most from within the same department or agency. However, very few have spent all or even most of their careers in the federal government. The high percentage of appointments of individuals already within the government is probably caused in part by two factors: first, the opportunity for the current administration to promote individuals originally recruited from the outside by the previous administration of the same party, and second, the increasing difficulty in recruiting from the outside that this report is concerned with. Incumbents have already paid most of the costs involved in accepting a PAS position, and it is relatively easier to recruit them than outsiders for higher positions.

An analysis of preappointment employment history underscores the intersectoral mobility of this group. Only a few had worked in just one sector before coming to Washington. In fact, most of them (about three-quarters) had previous experience in government, most often in the same

agency they now help to lead. Overall, about a quarter of the current appointees have past business experience, and about a third have held a university position at some point. About a fifth have worked in the think tank/consulting sector.

This brief analysis of the presidentially appointed positions in the CEG sample of top federal S&T policy and management positions indicates that they are typically held by individuals with advanced scientific, technical, or other professional degrees and backgrounds. As is characteristic of presidentially appointed jobs in the United States generally, many of these positions are held by "in-and-outers," highly qualified individuals who come into the federal government for a few years from successful careers outside the federal government—in business, academia, and the nonprofit sector—to apply their expertise and experience to the government's work, and then leave.[3] Most have already served in the federal government at some point.

PROBLEMS

Since most of the government's R&D work is carried out in the academic and industrial sectors or involves regulating high-technology businesses, this in-and-out system of executive leadership has helped make it possible for the government to apply up-to-date S&T expertise to policymaking and program management. This interchange between the government and the academic and industrial sectors has been a critical factor in the nation's scientific and technological leadership, and it should be carefully nurtured. Instead, a series of factors are making it harder and harder to recruit highly qualified scientists and engineers and medical experts from the private sector for top government leadership positions.

The factors cited most often include:

- More stringent and confusing postgovernment employment restrictions;

[3] The in-and-out system of leadership change in the U.S. government is analyzed and compared with the government leadership systems in Europe and Canada in Mackenzie (1987) and Smith (1984).

- The longer, more burdensome, and more intrusive nomination and Senate confirmation process;
- Stricter and more costly conflict-of-interest provisions;
- More detailed requirements for public financial disclosure;
- Pay that is not competitive with comparable positions in the private and nonprofit sectors;
- The high costs of moving to and living in Washington;
- Increased public scrutiny of one's personal life;
- Decreased capacity of government to carry out effective programs; and
- Lower public esteem for and prestige of public service.

Although these factors may affect all potential candidates for presidential appointments to some degree, they can have a differential impact on the government's ability to attract researchers from academia and industry and managers with technical backgrounds from industry. Government service does not usually further the careers of practicing scientists and engineers or help the career prospects of corporate executives. The government may attract academic scientists, engineers, and health professionals who are ready to switch into administration, but it faces real problems in recruiting midcareer corporate executives for whom a leave of absence is a threat to further advancement. In many cases, corporate executives with scientific and engineering backgrounds are the most knowledgeable about the policies and programs the government manages or oversees—for example, in the defense, energy, and space sectors and also in emerging areas such as biotechnology.

As a result of factors such as those listed above, the time it takes to fill key S&T leadership positions has been increasing. The average time it takes new administrations to fill presidentially appointed positions has been increasing steadily from administration to administration. The average time from inauguration to confirmation was 2.4 months in the Kennedy administration, 5.3 months in the Reagan administration, and more than 8 months in the Bush administration (Mackenzie, 1990:30). It is taking even longer to fill the S&T positions than non-S&T posi

tions. For example, it took the new Bush administration an average of nine months to fill key S&T positions, up from six months in the previous administration (compared with eight and five months respectively for non-S&T positions) (see Table 1-1). Some critical positions have taken even longer, for example, the Director of the Office of Energy Research (22 months), the Director of the National Institutes of Health (18 months), and the Commissioner of the Food and Drug Administration (12 months). This lag in filling positions has a significant and harmful effect on the government's ability to manage ongoing programs and to undertake S&T-based initiatives.

Table 1 Average length of time to fill S&T-related vs. other (non-S&T) PAS positions in recent administrations (in months)

	Administration		
PAS Job Type	Carter	Reagan	Bush
S&T-Related Positions[a]	4.77	6.24	9.14
	(n=13)	(n=17)	(n=29)
Other, Non-S&T Positions[b]	4.54	5.22	8.03
	(n=164)	(n=195)	(n=273)

[a] S&T-related positions were defined as any of the PAS positions profiled by the Council for Excellence in Government (CEG) for which there were data.

[b] All other PAS positions.

SOURCE: Calculated from data collected for Mackenzie (1990), using CEG categories (Trattner, 1992).

NOTE: The analysis probably understates the time it took to fill S&T positions in the current administration, because it assumes that all positions were filled as of January 1, 1990, the time when the data was collected. However, 9 of the 29 S&T positions (31 percent) were unfilled (compared with 52, or 19 percent, of the 273 non-S&T positions).

It is not only taking longer to fill key positions; it is also becoming harder to recruit top candidates. It is impossible to verify the increasing rate of turndowns because most candidates drop out before a formal job offer is made, but panel members familiar with recent openings in the defense, energy, and health areas know of cases where it was necessary to go to the tenth, twentieth, and even the thirtieth name on a list of desirable candidates. While some outstanding appointments were nevertheless made, the reluctance of the most desirable candidates is disturbing.

High turnover is a related concern. The CEG study found that average tenure in 54 top S&T positions in the executive branch has been 2.5 years (including those holding a position on an acting basis while a new candidate was being recruited and confirmed) (Trattner, 1992:5). Turnover is particularly high in certain areas; the CEG study cited the Environmental Protection Agency, parts of the Energy Department, the Consumer Products Safety Commission, and the Food and Drug Administration. The Defense Department has had four Under Secretaries for Acquisition since the position was created in 1987. This situation is troubling because excellence, continuity, and stability are especially needed in science and technology programs.

CONSEQUENCES

One of the most difficult challenges facing modern government is to make decisions about complex matters that take into account the constantly evolving scientific knowledge and technological changes that occur by and large outside the government itself. To meet this challenge, the nation cannot rely on generalists alone, and in fact, we have developed a tradition of recruiting highly trained individuals to fill key S&T leadership positions in the government. If we fail to attract excellent people to these positions, the quality of policymaking will suffer.

The panel concluded—after examining the record, reviewing reports, and conferring with government recruiting officials and with current and past incumbents of S&T-related positions—that there is considerable evidence of increasing difficulty in recruiting and keeping the highly qualified appointees the government needs to serve in S&T leadership positions. We are very concerned by this deterioration in the government's capacity to fill its top S&T-related positions. It has a significant and harmful effect on the government's

ability to manage ongoing programs and to undertake new initiatives. If the situation continues, the government's ability to make key decisions in the face of rapid scientific and technological change—and to design, carry out, and evaluate effective and responsive programs—will be very seriously affected. The nation can ill afford the consequences of leaving unattended this problem of executive recruitment.

SOLUTIONS

What can be done? Staffing an administration is one of the most important responsibilities of a President. The abilities and energy of the President's appointees in top positions in the executive branch are key determinants of policymaking and policy execution. This is especially true for S&T positions, where current expertise is needed to deal with a fast-changing scientific and technological environment. As a nation, we are facing a serious problem with recruiting and retaining top government executives, a problem that has been accumulating steadily for several decades and promises to worsen. The long-term nature of this erosion of governmental capacity led the recent National Commission on the Public Service (Volcker Commission) to call it a "quiet crisis" (1989a). The multiple and incremental causes of the problem call for multiple and steady responses on several fronts.

The panel focused on three strategies for improving the government's ability to attract the talent it needs for top positions in which science and technology policies are developed and carried out:

A. Reducing the hurdles of the appointment process and the disincentives to government service;
B. Expanding the pool of potential talent by improving the White House's outreach to the science and engineering community and using more effective techniques for recruiting leading scientists and engineers; and
C. Restructuring certain positions to make them more attractive to scientists and engineers.

2

Reducing the Hurdles and Disincentives

At a time when scientific knowledge and technical expertise are becoming ever more critical in government leadership positions, it has become more difficult to attract top talent to the public service. The hurdles a prospective candidate must cross have become higher and more numerous, turning the presidential appointment process into an ordeal that fewer and fewer of the most highly qualified scientists and engineers are willing to undergo. Many of those who do serve must make large financial sacrifices, suffer loss of privacy, and risk unjustified accusations of scandal.

The major hurdles include: postemployment restrictions that are becoming too broad in application; the cost of complying with conflict-of-interest interpretations; the perception of inappropriate ideological "litmus tests"; inadequate compensation; the belief that it is much harder to accomplish anything in and through government; and the lengthier and more burdensome appointment process.

Ethics rules have increased in scope and detail, largely in response to a series of defense procurement scandals, and have imposed substantial restrictions on postgovernment employment choices, types of financial holdings, and outside earnings. Some progress has been made in the areas related to pay, tax treatment of assets that must be divested, and moving expenses, but the costs of taking a federal job and living in Washington are still high and discourage some who want, but cannot afford, to serve. Finally, the burden of substantive and procedural requirements imposed by the appointment process has increased substantially in recent years and should be reduced. The forms and procedures have become more complex and time-consuming, introducing increased uncertainty and delay in the nomination and confirmation process.

Partly as a result of these hurdles and disincentives, fewer scientists and engineers consider serving as presidential appointees, as noted in chapter 1. Recruiters are experiencing increased numbers of turndowns before they find willing candidates. Turnover is high. Important posi

tions remain vacant for longer periods. It is becoming increasingly rare to recruit those in midcareer rather than the very young or those approaching retirement, because the costs for those with children in college—and who face significant postgovernment employment restrictions—are very high.

Several hurdles have been lowered recently. The Ethics Reform Act of 1989 permits candidates who have to resolve conflicts of interest by divesting stocks or other assets to convert or "roll over" the proceeds into a neutral investment vehicle, such as a diversified mutual fund, rather than pay capital gains taxes on them all at once. The same act also mandated a substantial increase in executive pay levels—35 percent by the beginning of 1991—and established new mechanisms for ensuring that salary levels continue to increase annually with inflation.

Overall, however, the situation is worsening as other hurdles—substantive and procedural—increase in number and size, and they counteract the pay increases and helpful tax changes. As a result, governmental capacity to plan, implement, and evaluate S&T-intensive programs is deteriorating. Continued leadership of the United States in such areas as biotechnology, manufacturing, medical sciences, space, energy, and defense is threatened.

TOWARD REASONABLE AND EFFECTIVE ETHICS RULES

The post-Watergate period has yielded a steady flow of new laws and regulations intended to improve the integrity of the federal government. Some of these—especially the requirement for public financial disclosure and the prohibition on participation in any particular matter in which a federal employee has a financial interest—make good sense. But the efforts to achieve a scandal-proof government have gone too far and, on balance, do more harm than good by deterring talented and experienced scientific and engineering personnel from taking senior government positions. Some of these ethics reforms, especially recent attempts to purify the procurement process by imposing broad postgovernment employment restrictions, afford little ethical protection at very high cost—a bad bargain for the government and a bad bargain for the public.

Presidential appointees and other government officials must be held to the highest ethical standards in their conduct affecting public business, and breaches should be vigorously punished. Public officials should be fair and impartial and avoid favoritism. They should not involve them

selves in matters that affect themselves or those with whom they have family, friendship, or business ties. They should devote themselves to furthering the public interest. They should avoid situations or actions that may even appear to be affected by personal or special interests.

Ethics laws and rules should not be so onerous, however, that they unduly deter highly qualified scientific and technical specialists (or other needed experts) from serving in the federal government. Government needs the fresh perspectives and new ideas of top scientists and engineers who take several years from their careers in academia and industry to serve in important scientific and technical positions. The challenge is to design a set of rules and procedures that allow the in-and-out system of S&T governance to work effectively while preventing it from becoming a revolving-door situation in which individuals enrich themselves unfairly by exploiting information and contacts they gained while in the government. The need for ethical integrity in government must be balanced with the country's great need for a constant flow of fresh and talented leadership from the private sector.

Some of the most important hurdles are conflict-of-interest laws that have proliferated piecemeal in response to specific scandals. The integrity of government and public trust in government must be maintained, but, as a nation, we also pay a high cost if top leadership positions are not filled by the most qualified and experienced experts.

The panel concluded that the unintended costs of broader conflict-of-interest restrictions—particularly those dealing with post-government employment—have reached the point where they substantially outweigh their benefits. We believe, however, that it is possible to have fair and effective conflict-of-interest laws that are compatible with, indeed would promote, public service by highly qualified and motivated individuals from industry, academia, and other sectors who are on the cutting edge of science and technology.

Postgovernment Employment Restrictions

According to presidential recruiters, as well as scientists and engineers who have been approached by recruiters, the laws restricting postgovernment employment have become the single biggest disincentive to public service, now that pay levels have been increased substantially. Overlapping, confusing, and in some respects overly broad postemployment restrictions that were suspended with the passage of the 1989

Ethics Reform Act have come back into effect over the last year, and there is constant pressure to broaden the restrictions further by banning officials involved in specific procurement actions from working in any capacity for any competing contractors for periods of one, two, or three years.

A particularly damaging feature of some recently imposed and proposed restrictions is that they often treat presidential appointees who have broad procurement oversight responsibilities as having participated personally and substantially in a wide range of contract determinations under their official jurisdictions. As a consequence, such high-level appointees may be effectively barred from immediate postemployment opportunities with many or all of the firms or institutions at which they could practice their career specialties. Thus, these postemployment restrictions have become the biggest problem in recruiting high-level scientists and engineers. Many important areas of S&T involve relatively few companies who have bid on government contracts and already do government work. Accordingly, broad postemployment restrictions can make it virtually impossible for specialized individuals to continue their career in their area of expertise.

Recommendation A-1. Government postemployment restrictions should be revised to balance the public's interest in ensuring the integrity of government operations with its interest in attracting the best talent to government service. Laws overlapping and conflicting with basic postemployment restrictions in 18 U.S.C. §207 should be repealed. The basic laws governing postgovernment employment should be revised and codified in 18 U.S.C. §207. The fundamental aim of postemployment restrictions should be to regulate improper conduct directly rather than to ban employment with particular employers per se, as has been done with certain DOD officials since 1985 and as has been proposed in Congress for governmentwide application. Instead, section 207 should be revised to include restrictions on improper postemployment conduct, to curb improper influence not only by prohibiting personal representation but also by prohibiting use or disclosure of specific types of inside information, such as that which is integral to source selection. Subject to these restrictions, participation in work under contracts should be allowed, so that the government may benefit from the expertise of its former employees. To the extent that a ban on employment has to be adopted, it should be of short duration and narrowly applied to officials who have had substantial personal involvement in

awarding or administering a contract. Current provisions for waivers and exemptions from postemployment restrictions of section 207 and other laws that apply to critically needed scientific and technological experts and employees of the national laboratories should be used to the fullest extent needed. Finally, federal executives should be able to obtain "safe harbor" opinions from agency ethics officials regarding the applicability of postemployment restrictions in their cases. The administrative burden of providing such opinions would be reduced greatly if the postemployment provisions were revised and combined into a single, coherent set of laws, as recommended.

The basic postemployment law is in 18 U.S. Code §207. The section was thoroughly revised in 1989 in response to recommendations of the President's Commission on Federal Ethics Law Reform (1989:Ch. 4) that there be a comprehensive and uniform postemployment statute covering former personnel of the legislative and executive branches (earlier codifications were carried out in 1962 and 1978). As amended by the Ethics Reform Act of 1989, section 207 strictly limits former government employees in representing private parties before their former agencies and in participating in matters in which the former employees were involved personally and substantially while in government (the basic restrictions are laid out in Appendix C). However, despite the intent of the 1989 act to reestablish a comprehensive and uniform set of conflict-of-interest laws, at least four other sets of statutes affect the postgovernment employment activities of federal R&D officials. These are the Procurement Integrity Act of 1988 and several provisions that affect officials of the Departments of Defense and Energy specifically (see Appendix C for details).

Recognizing that they overlapped and conflicted with the new and expanded governmentwide ethics law, Congress temporarily suspended these additional laws to allow time to consider their repeal or revision. At a congressional hearing held in February 1991 to consider the administration's proposal to repeal the overlapping laws, officials from the Department of Defense, Department of Energy, and the National Aeronautics and Space Administration testified about the problems that the Procurement Integrity Act of 1988 had caused in their efforts to recruit and retain highly qualified personnel (summarized in Appendix C). Despite this testimony, no agreement was reached on revising or repealing the suspended laws, and they came back into effect in December 1991 and June 1992.

Recurring scandals remind us that rules against unethical conduct

are needed to protect the government's integrity and assure public confidence, but care must be taken to see the value of additional restrictions is weighed against their negative effects on the recruitment and retention of highly qualified federal officials and employees. The panel discussed at length at each of its meetings the extent to which postemployment restrictions go too far in limiting career choices and thus unnecessarily deter highly qualified experts from serving in important S&T leadership roles. We concluded that, with the addition of legislation protecting procurement-sensitive information, the current restrictions in 18 U.S. Code §207 and adjacent, related sections are reasonable and appropriate in protecting the public's interest in assuring ethical conduct of former and current federal officials and at the same time in assuring a refreshing flow of top scientific and technical talent from the private sector and back. The other provisions affecting specific departments or officials can, in our judgment, be repealed.

Postemployment restrictions have three purposes (President's Commission, 1989:53). First, they should prohibit improper influence by former officers and employees. Former officials should not be able to "switch sides" on the same matter and use their influence with former colleagues to secure an advantage for their new employers. Second, they should not disclose sensitive government information gained in the course of government service to benefit themselves and their new employer. Third, they should not curry favor to increase their employment prospects by using their official capacity while in government to benefit a prospective employer.

18 U.S.C. §207 includes several prohibitions against switching sides and use of influence, including the lifetime ban on representation with respect to particular matters involving a specific party, such as a contract or claim, in which the former official participated personally and substantially. Section 207 also contains a one-year ban on communications by former officials at level GS-17 or above made with intent to influence their former agencies and a one-year ban on any communication by former cabinet secretaries or high White House officials made with intent to influence their former agency or any executive-level officials. Section 208 of 18 U.S.C. requires federal employees negotiating for other employment to disqualify themselves from participation in procurements or other particular matters affecting the prospective employer.

Several of the statutes recommended for repeal impose additional restrictions to discourage improper influence and use of inside information—the Procurement Integrity Act, the DOD revolving door laws, and

the DOE act. Under the procurement integrity law, for example, former federal employees are prohibited from assisting behind-the-scenes as well as by personal representation in the negotiation or modification of contracts they were involved in as federal employees, and they are prohibited from performing any work under such contracts. Under 10 U.S.C. §2397b, certain mid-and high-level DOD officials are prohibited from working for contractors at all for two years if they were involved in certain procurement-related functions with those contractors during their last two years in government.

The intent of these laws is to prevent the use of inside information by former officials, but the public interest would be better met by a new statute that identified the types of sensitive information that should be protected from unauthorized disclosure or receipt. This direct approach is preferable to an indirect attempt to prevent unwanted behavior by broad bans on postgovernment employment or activities. Although such bans may reduce the opportunities to disclose source-selection or bid and proposal information, they also prohibit a broad range of activities based on knowledge and skills that are not related to involvement with particular procurements while in the government. Former federal officials who are highly qualified scientists and engineers are therefore prevented from undertaking perfectly legitimate activities in the course of practicing their professions. As a result, the government's ability to recruit and retain highly qualified personnel for tours of duty in top S&T positions is unduly restricted, and the public interest suffers.

The flat ban on performing any work under a contract for two years is also overly restrictive and may deprive the government of expertise needed to fulfill contract goals. The panel opposes even wider application of broad approaches to such an important and difficult set of issues, for example, extending the two-year postgovernment employment ban from DOD to the entire government.

Consolidation and Periodic Review of Ethics Laws

The government's conflict-of-interest and other ethics laws should be fair, clear, and consistent. Currently, the laws—especially those concerning postemployment restrictions—are overlapping and inconsistent in content and in their application to comparable agencies, making them hard to understand or enforce. The resulting uncertainty makes it difficult for the Office of Government Ethics, designated agency ethics

officials, or personal legal advisors to tell appointees what restrictions and bans they will be subjected to. This uncertainty often deters candidates from agreeing to be nominated.

There is no mechanism for periodic review of ethics laws to see if they work or are worth their cost and whether they need to be updated in response to changed conditions. This situation perpetuates the existence of multiple ad hoc measures that are inconsistent with each other and create unnecessary hurdles in the appointment process.

Recommendation A-2. To ensure clear understanding and more effective enforcement, the federal ethics laws should be streamlined and clarified as soon as possible, and they should be contained in a single comprehensive section of the U.S. Code. They should then be evaluated periodically for their impact and effectiveness in ensuring ethical conduct with as little negative effect on recruitment and retention of scientific and engineering personnel as possible. Overlapping laws should be repealed immediately. Clear and consistent ethics laws would let appointees know what is expected of them. This would increase compliance and improve any enforcement that is needed. This consolidation, which could be based on the work of the 1989 President's Commission on Federal Ethics Law Reform, should commence immediately. Subsequently, periodic evaluations should be carried out with—and needed revisions suggested by—a commission appointed by the President, Senate, and House of Representatives. The commission should consist of representatives from the executive and legislative branches and the private sector (academia, industry, nonprofit), and it should report publicly every ten years (or more often if necessary).

There is a natural tendency to react to each government scandal by adopting a specific law or executive order, which has resulted in the maze of rules and regulations that are difficult to understand, administer, and enforce and that deter candidates for federal positions. New laws should be considered not only for their specific purpose but also for their net effect on the overall ethics system, including their impact on the quality of the public service.

The bipartisan President's Commission on Federal Ethics Law Reform performed a valuable service in proposing a comprehensive revision and consolidation of executive branch ethics laws and rules, which was largely implemented in the Ethics Reform Act of 1989 (the first comprehensive update since the Ethics in Government Act of 1978). While not perfect, the Ethics Reform Act is a workable law that on

balance imposes a set of reasonable standards and procedures, especially if it is revised in accord with Recommendation A-1 and if conflicting laws are repealed. Federal ethics laws should be periodically evaluated, however, and, if necessary, revised through a careful and deliberative process that involves the affected parties. If an ethics commission were created that met periodically, say, every ten years, the pressure to react hastily to each new scandal with a new law would be alleviated.

Reasonable Resolution of Substantive Conflicts of Interest

Some candidates for presidential appointments own stocks and other assets that pose a potential conflict of interest if the candidates's official actions may affect or appear to affect the value of such an asset. This situation is more likely to pertain to individuals recruited from industry to fill top S&T positions in the energy, defense, and space areas than to those recruited to fill executive positions in many other program areas. Many industry scientists and engineers have stock and stock options in the companies they come from, and the companies, in turn, are probably competing for federal contracts. In these cases, which are few in number but important, divestiture of assets is common because it automatically eliminates the possibility of a conflict of interest.

In some cases, appointees are required not only to divest assets in a former employer before taking a federal position, but also to recuse themselves from all involvement with that company while holding the position. Normally, recusal after full divestiture should not be necessary (unless the appointee retains pension or similar rights with the former employer). In many cases, recusal alone should be a sufficient remedy. We believe that the public interest is better served if the least drastic—and least costly—remedy is used in each case, because it would improve recruitment of needed personnel.

Recommendation A-3. In applying the conflict-of-interest laws, divestiture of assets should not be considered the primary remedy and therefore required routinely. Recusal, coupled with full public financial disclosure, should be considered the primary remedy in most cases by the Senate, Office of Government Ethics, and designated agency ethics officials. The panel believes that more reasonable resolutions of substantive conflicts of interest would avoid unnecessary discouragement of prospective appointees. Divestiture has been used

more often to cure conflicts of interest since legislation allowing "roll-over" of the proceeds from divested assets into a neutral investment vehicle was passed in 1989. Asset rollover does not help in all cases, however. Some assets have no present value that can be realized (e.g., stock options), and others cannot be divested all at once without major harm (e.g., a family-owned firm). If divestiture is necessary, it should not be coupled with recusal unless the appointee retains some interest, such as pension rights.

Federal officials should not allow conflicts of interest arising from financial or other personal interests in matters relating to their official duties or activities of their agencies to influence their conduct in the public service. Federal officials are expected to serve the public interest, and they should not abuse their positions to enrich themselves, their families, or any organization in which they have a financial or personal interest (NAPA, 1988:26–34).

The basic conflict-of-interest law is in 18 U.S.C. §208. It says that no "officer or employee" of the government may participate "personally and substantially" in a "particular matter in which, to his knowledge, he, his spouse, minor child, partner, organization in which he is serving as officer, director, trustee, partner or employee, or any person or organization with whom he is negotiating or has any arrangement concerning prospective employment, has a financial interest...." Some departments and agencies have conflict-of-interest restrictions in their organic statutes. The Department of Energy Act, for example, bars "supervisory" employees from holding any financial interests in an "energy concern" and also requires them to recuse themselves from participating in any matters affecting a former employer for a year (42 U.S.C. §7212 and §7216).

Procedurally, potential conflicts of interest are handled in two steps. First, the nominee files a public financial disclosure statement that lists all relevant financial holdings and associations. Second, there is consultation between the nominee, the designated agency ethics official, and perhaps the Office of Government Ethics (OGE) and Office of the White House Counsel about potential conflicts of interest and how they may be resolved. The options include:

- A written recusal statement;
- Waivers in cases where the financial interest is considered "not so substantial as to be deemed likely to affect the services which the

government may expect from an officer or employee";
- Qualified blind and diversified blind trusts; and
- Divestiture of assets.

Since the 1978 Ethics in Government Act, OGE attorneys and the designated agency ethics officials have tried to help nominees comply with the conflict-of-interest laws so they can accept presidential appointments. Divestiture has usually been used as a last resort in curing conflicts of interest, because it often incurred large capital gains taxes. On recommendation of the President's Commission on Federal Ethics Law Reform, the law was changed in the Ethics Reform Act of 1989 to eliminate this major disincentive to the acceptance of high-level positions (President's Commission, 1989:25). Capital gains caused by divestiture required to resolve conflicts of interest may now be rolled over into a neutral investment vehicle, such as a diversified mutual fund, and not be taxed until later.

As a result of the new rollover provision, divestiture has become somewhat more common. OGE has approved rollovers in 196 cases since the law took effect in early 1990, of which 30–40 percent are estimated to affect PAS positions (Ley, 1992). Such cases have a special impact on scientists and engineers coming from industry, who are likely to have stocks and stock options as part of their compensation packages. Care should be taken to see that divestiture does not become an unnecessary deterrent to public service by this group when less drastic alternatives such as recusal are available.

Nonprofit Job Tenure

Leaves of absence have proved to be an effective way to recruit top scientists and engineers from academia, tax-exempt medical and research institutions, and the national laboratories for important presidentially appointed positions, and we recommend below that these institutions grant them freely since they have an important stake in the quality of the government's S&T leadership. The current practice of making appointees sever all ties with industrial employers should not be inappropriately extended to candidates from the academic and nonprofit sectors. There may be occasional instances where resignation is necessary, but if requirements to resign tenured positions became common, the chilling

effect on government's capacity to recruit from the nonprofit sector, including colleges and universities, national laboratories, and research institutions, would be large and very damaging.

Recommendation A-4. College and university faculty, and scientists and engineers from nonprofit medical institutions, national laboratories, and other nonprofit research organizations, normally should not be forced to give up tenure in their home institutions. In fact, leaves of absence for tenured faculty, and other nonprofit personnel, should be encouraged to increase the government's capacity to recruit and retain well-qualified scientific and engineering personnel in high-level positions. Resignation is only called for in those few instances where major decisions affecting the home institution are pending and are too central to the job for recusal to be practical. In those rare cases where resignation may be justified, there should be no implicit arrangements for the appointee to return.

REDUCING THE COSTS OF SERVING

The panel believes that the costs of entering the government service and staying there for an effective period of time, say, four years, should be reasonable. This does not mean that appointees should make as much as they would if they stayed in the private sector, but they should be able to pay their living costs. This principle is more important for midcareer scientists and engineers than for other professionals, because they are not as likely to have accumulated much wealth and their government service will probably not boost their salaries as much after they leave government.

Compensation

Until recently, low pay was a major disincentive to serve, even in presidentially appointed executive-level positions. It was not only uncompetitive with pay for comparable positions in the private and non-profit sectors, but it was also not enough to live on in the high-cost Washington, D.C., area. Although the executive pay situation has eased in the short term, it will not be adequate in some cases and will deteriorate again unless there are regular cost-of-living adjustments.

Recommendation A-5. Executive salaries should be at levels that enable appointees and their families to live on their government pay in the high-cost Washington, D.C., area without having to borrow money or dip unduly into savings and assets. Now that executive-level salaries have been increased substantially, Congress and the President should ensure that there are regular salary reviews and pay increases, when justified by cost-of-living data, in order to avoid the large lapse in adequacy of executive pay that developed in the mid-1980s.

The quadrennial commissions on executive, legislative, and judicial salaries have consistently noted that executive salaries are still lower in real terms than they were in 1969. The last quadrennial commission report presented data showing that, after adjustment for inflation, the 1988 salary for level II positions was about 65 percent of what it was in 1969 (which was a substantial improvement over 1982, when level II salaries were only 55 percent of what they were in 1969) (Commission on Executive, Legislative, and Judicial Salaries, 1988: Chart 2). Executive salaries have been raised significantly in recent years, however. For example, the top salary, executive level I, has increased from $99,500 in 1988 to $143,800 in 1992. The salary for executive level II positions has increased from $89,500 to $129,500 over the same period. Because of the cumulative pay increase of nearly 45 percent since 1988, level II salaries are now up to 80 percent of what they were in 1969, after adjustment for inflation (see Figure 2-1).[1] Pay for executive level IV, the level of most S&T-related PAS positions, has also increased 45 percent since 1988, from $77,500 to $112,100.

Officials in the Office of Presidential Personnel and the Assistant to the President for Science and Technology told the panel that the increases have eased recruitment problems a great deal. While adequate pay is not sufficient by itself to motivate high-quality scientists and engineers to serve, lack of it has often been a deterrent to serving. It is especially important, therefore, to ensure that salary levels are increased regularly to keep up with the cost of living.

[1] If the level II salary in 1969 had increased with inflation, it would be more than $160,000 in 1992. It should be noted, however, that executive pay levels, which were established in 1965, were increased greatly in 1969. Using 1969 as the base year therefore makes the pay gap larger than using, say, 1968. If the current pay for executive level II is compared with 1968's in constant dollars, the gap is 10 percent rather than 20 percent.

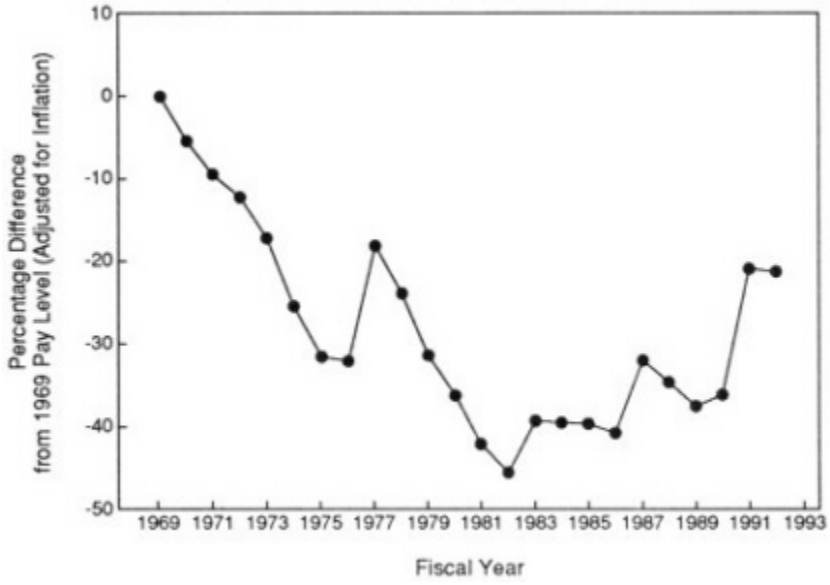

Figure 1-1.
Purchasing Power of the Executive Level II Salary Since 1969 (adjusted for inflation). The actual salary for each year was calculated as a percentage of what the 1969 salary would have been if it had been adjusted regularly for inflation over the years, using the Consumer Price Index (CPI-U). In 1982, purchasing power reached a low point of 55 percent of what it was in 1969. Recent pay hikes have increased that figure to nearly 80 percent in 1992.

In addition to the most comprehensive revisions in the government's ethics laws since the 1978 Ethics in Government Act, the 1989 Ethics Reform Act included the pay increases just described, prescribed a new method of determining and implementing automatic annual cost-of-living adjustments, and created a new quadrennial pay commission process to review the pay situation for top federal officials (McGrath, 1990). Previously, top federal officials were eligible to receive the same cost-of-living adjustment as General Schedule federal employees, based on surveys of comparability with the private sector. Beginning on January 1, 1992, congressmen and federal executives are eligible for cost-of-

living adjustments tied to the annual change in the Employment Cost Index (ECI), a quarterly index of private wages and salaries published by the Bureau of Labor Statistics. The rate of adjustment is the same as the percentage of change in the ECI for the year ending a year before the adjustment, less one-half of one percent (Gressle, 1991). For example, the ECI for private wages and salaries between December 1989 and December 1990 was 4.0 percent. The cost-of-living adjustment effective January 1, 1992, therefore, was 3.5 percent.

In most years in the 1980s, Congress denied annual comparability adjustments for itself and therefore for executive level officials. Although the new annual cost-of-living adjustment process established by the Ethics Reform Act does not require recorded votes, it remains to be seen whether Congress will allow full increases to go into effect without reducing or eliminating them, as they often have in the past.

Pay increases for top federal officials and members of Congress will also be based on a new quadrennial pay-setting system. Congress revamped the quadrennial commission process because it was not working well; only three of the seven commissions since 1968 had their recommendations passed, and the amounts were less than recommended in each case. The new quadrennial commission, called the Citizens' Commission on Public Service and Compensation, will consist of 11 members, six chosen by the President, Congress and the judiciary, and five chosen by lot from registered voters in different regions of the country. The next commission will be appointed in fiscal year 1993 and will report its recommendations on December 15, 1993. The President will then consider them and make recommendations to Congress in January 1994. The pay recommendations can take effect only if both Houses of Congress pass a resolution of approval on a recorded vote and after an intervening congressional election takes place, that is, no earlier than January 1995.

Whether the new quadrennial system will make it politically easier for Congress to pass pay increases for itself remains to be seen. The National Commission on the Public Service (Volcker Commission) recommended development of a process that would trigger salary increases in a more timely fashion. They suggested that, if Congress' inability to act on its own salaries remained an obstacle, the President should make separate pay recommendations for top executive officials and Congress should act separately on them (National Commission on the Public Service, 1989a).

Outside Income Exceptions

The law allows outside earned income, from appropriate sources, totaling no more than 15 percent of an appointee's government salary. A 1989 Executive Order, however, bans all outside earned income. This new regulation can have the unfortunate effect of cutting appointees off from continuing professional activities that are part of their scientific or engineering careers.

Recommendation A-6. The Executive Order prohibiting outside earned income for presidential appointees should be revised to permit appointees to continue activities that are normally part of a professional research career, such as textbook editorships. Such exceptions should be carefully considered and approved by the department or agency head if the time demands will not interfere with the appointee's official duties, which are primary.

Using New Pay Flexibilities

Recommendation A-7. The pay-related flexibilities authorized by the Federal Employees Pay Comparability Act of 1990 (FEPCA) could and should be used where necessary to recruit and keep top candidates for presidentially appointed positions. These include recruitment bonuses and retention allowances, special pay categories, and reimbursement for moving expenses.

FEPCA's pay-related flexibilities apply to presidential appointees and should be used to advantage by recruiters. Recruitment bonuses of up to 25 percent of base pay (but only up to a total pay cap of $143,800 in 1992) could be used to offset some of the costs of moving to Washington; retention allowances of up to 25 percent of base pay (also capped at $143,800) could be used to offset the costs of living in Washington for especially hard-to-retain scientists, engineers, and health professionals. Authority to designate certain positions as "critical" and pay them up to executive level I ($143,800) can also be used, as was done in the case of the new NIH director. These authorities should not be used generally but selectively, to enable the administration to recruit for certain key positions.

ADMINISTRATIVE STREAMLINING

The appointment process itself has become too elaborate and long, which unnecessarily deters some potential candidates and thus slows an administration in filling the top leadership positions in the government. The next two recommendations call for ways to reduce the sheer length and paperwork burden of the appointment process itself.

Standardize Forms and Coordinate Procedures

Recommendation A-8. Categories and time periods used in financial disclosure and other nomination forms used by executive and legislative branches should be simplified and made compatible (a) with each other and (b) with the categories and time periods used for taxation purposes, to reduce cost and delay in the appointment process. Also, higher minimum thresholds for reporting financial interests would eliminate some of the paperwork without unduly threatening the integrity of government.

At the present time, candidates for PAS positions fill out a series of separate, complicated, and incompatible financial disclosure and personal data forms, for the Office of Personnel Management, OGE, the FBI, and the White House, and for the relevant Senate committee. This slows the process, imposes unnecessary legal and accounting costs on candidates, and multiplies the chance of error. All the parties in the process should agree to use a common core data set, if not a common form, to which each could add any questions of particular interest.[2] It would be most useful to adopt the accounting time periods and categories already prescribed by the Internal Revenue Service.

Update Previous FBI Background Investigations

Recommendation A-9. The security clearance by the FBI should only cover the time period since the last FBI background investiga

[2] The President's Commission on the Federal Appointment Process recommended that the Senate adopt one basic form for all committees and accept the SF-278—the executive branch's financial disclosure form—as an alternative net worth statement (1990:5).

tion, if one was ever conducted, to reduce this significant source of delay in the nomination process.

Background investigations by the FBI add weeks and even months to the appointment process. Some of this time could be saved if the FBI only had to investigate the time period since a previous investigation. This would be especially helpful in recruiting scientists and engineers because some of those nominated for important PAS positions have already been investigated by the FBI before appointment to such science advisory boards as the President's Council of Advisors on Science and Technology and the National Science Board.[3]

[3] The President's Commission on the Federal Appointments Process made a similar recommendation that the FBI only investigate the years since the last FBI background check that was based on a full field investigation, to "avoid time-consuming reinvestigations of old information" (President's Commission, 1990:9).

3

Improving Recruitment and Expanding the Pool of Candidates

Recruiting outstanding individuals for presidential appointments is always a challenging task. Finding first-rate scientists and engineers willing to serve in an administration presents special problems because they do not usually consider a tour as a political appointee to be a normal step in their careers. The White House needs to undertake special measures to ensure that efforts to recruit scientists and engineers are successful. However, because the Office of Presidential Personnel is overburdened with a large number of placements to make, especially at the beginning of an administration, it is unable to conduct the type of active search needed to find the best talent for positions in highly specialized areas. As a result, the current system too often fails to identify and recruit the best available talent for presidentially appointed positions involving scientific or technological expertise. In addition, the criteria used by the OPP to screen candidates are too frequently misunderstood in the science community, leading to damaging perceptions that political and ideological factors are overemphasized in the selection process. We conclude, therefore, that it is necessary to find ways to improve the White House's outreach to the science and engineering community and for the White House, industry, academia, and scientific societies to work together in expanding the pool of potential talent.

RECRUITING TOP SCIENTISTS AND ENGINEERS

While a presidential appointment is very attractive to many people, there are a number of deterrents confronting those invited to work for the President. The pay is often less, sometimes considerably less, than what many successful professionals could earn in the private sector. The public financial disclosure process with its arcane forms, legal complexity, and publicity can discourage potential appointees. Post-employment restrictions often limit future career opportunities. A presi

dential appointment means living in a public fishbowl. For those not already living in the Washington area, a move can be disruptive to families with children in school, and it is costly to find a home in the expensive Washington housing market.

Public esteem for government, especially the federal government, has declined in recent years, which has reduced the prestige of the public service and lowered its morale (National Commission on the Public Service, 1989a,c). This stems in part from perceptions that the government is less effective. While the problems government faces are more complex and difficult to solve—which is why the government's need for highly qualified dedicated scientists, engineers, and other experts in leadership positions is greater than ever—Congress and the executive have become more fragmented and divided and therefore less able to agree on decisive action. This in turn reduces one of the major incentives for public service—the opportunity to make a contribution.

Although these factors affect all potential recruits for presidential appointments, the consequences are especially serious in the case of technical personnel because of the critical importance of S&T judgment and advice in national policymaking and program management. Some of the factors discouraging potential recruits for presidentially appointed positions may affect scientists and engineers to a greater degree than candidates from the legal or other professions, or from the business sector.

For many scientific and technical positions, the people most needed to be effective are those who are at the peak of their technical expertise, at the cutting edge of technology. These professionals are likely to be at midcareer, earning somewhat higher salaries than the government pays. They are less likely to have accumulated wealth that would allow them more easily to forgo a higher salary to take a government appointment, and they are more likely to have children in college. While mid-career scientists and engineers may be the most desirable from the perspective of the government because they are energetic, creative, and on top of the latest research developments, they are among the hardest to recruit. Past presidential personnel directors have often written them off as impossible to recruit. Thus the career-stage factor makes the pool of scientists smaller than other professions.

Also, presidential appointment to a policy position will not necessarily enhance scientists in their scientific careers in the same way that it would help lawyers or business professionals who gain from the prestige, contacts, and experience of a presidential appointment. In a time of rapid scientific and technological change and progress, time away

from research is costly because a scientist quickly loses touch. Federal service may, however, help those pursuing administrative career paths in science, business, or academia. Thus it is often necessary to find a person who is ready to make a career shift out of research science into the more administrative aspects of the profession.

Scientists are also less likely to be located in the Washington area and are thus more likely to have to move their families in order to accept a presidential appointment. In other professions such as law, business, economics, or foreign policy, Washington-area think tanks are likely professional homes for those who want to have an influence on public policy. Some say this amounts to a "shadow government" in the various policy organizations and law firms in Washington. But the major centers for nongovernmental research and development are not in the Washington area. This makes many of the best-qualified scientists and engineers less visible to presidential recruiters and makes it more burdensome for them to accept a presidential appointment.

OFFICE OF PRESIDENTIAL PERSONNEL

Compounding the problems created by the relatively small pool of potential presidential appointments with science and technology expertise is the strained capacity of the Office of Presidential Personnel. Each new administration is inundated with applications and nominations from those seeking government jobs working for the new President. By June 1989 the new Bush Administration had received more than 45,000 applications for positions. Quality control over this flurry of paper poses a major problem for the OPP, with its limited resources.

The strain provided by volume is matched by the pressure to staff each new administration in a timely fashion. The transition period between election and inauguration amounts to only about 11 weeks, and most of the time must be devoted to cabinet selection and preparation for confirmation hearings. But the second tier of appointees must be on board early in the administration or crucial programs will slip because of lack of leadership. Attention to science and technology appointments must be shared with attention to all other appointments. The whole personnel operation is going on concurrently with the other important activities of the transition period, including budgeting, policymaking, international affairs, congressional relations, White House staffing, and inaugural celebrations.

These volume and time pressures might be mitigated by early prep

aration, but political realities and sensitivities do not allow much in the way of planning. Presidential campaigners are reluctant to divert resources from the campaign to devote to transition or personnel planning. If the candidate is not elected, there will be no transition to worry about. Even if resources are available, no campaign wants to give the impression that its candidate is so confident of victory that it is already dividing the spoils of victory. The current President, for example, did not let his future personnel recruiter open an office or recruit a staff until after the election. The search for scientists and engineers is part of the larger personnel operation, which can only be begun in earnest after the election.

The capacity of the OPP is also under strain because of the large number of appointments with which it must deal. As the government has grown and political control has been extended deeper into the executive branch, the number of appointments that Presidents make has increased. The number of presidential appointments requiring the consent of the Senate (PAS) has grown from 152 in 1965 to more than 550 in the 1990s.[1] In addition, other nonpresidential appointments (about 650 noncareer SES and 1,700 Schedule C), have increasingly come under White House control and thus the responsibility of OPP. In addition, the OPP must handle more than 500 PAS and more than 1,500 PA appointments to part-time boards and commissions.[2]

These pressures on the OPP are intensified by additional pressures exerted by the political party and congressional supporters of the President on behalf of their own candidates for political appointments. Thus, in searching for nominees with the best substantive qualifications to lead the executive branch, the OPP must fend off intense pressures for appointments from sources that may be more concerned with political rewards than with the need for expertise.

The pool of potential scientific nominees is also narrowed by self-imposed criteria for presidential appointments, that is, loyalty to the new President. While political loyalty is certainly a legitimate criterion for presidential appointments, construing the evidence of that loyalty too

[1] This total does not include some 165 ambassadors, 187 U.S. attorneys and marshalls, 930 U.S. judges, or representatives to international organizations.

[2] PA positions are appointed by the president without the advice and consent of the Senate. These include the president's assistants and other executive office staff (about 338) and one of the S&T-related positions included in this report—Director of the National Cancer Institute (Appendix B).

narrowly can severely constrain the pool of people considered for appointments. Certainly a sophisticated appreciation of the politics of science and public policy is an essential criterion for potential nominees for PAS positions, but experience in partisan campaign activity is less likely to be found among scientists and engineers.

Since scientists are less likely to engage in the usual sorts of political activism that makes them visible to presidential recruiters, the OPP should not expect the same level of partisan political activism by potential scientist nominees as they would expect of candidates from other professions. Rigid application of the usual political criteria will quickly eliminate from the pool many qualified scientists who should be given further consideration.

GREATER RELIANCE ON DEPARTMENT AND AGENCY RECRUITING

The locus of decisionmaking for subcabinet political appointments should be with the cabinet secretaries and agency heads. We believe that shifting the balance toward the departments and agencies will improve the chances of recruiting and keeping first-rate scientists and engineers in presidentially appointed positions. The OPP faces too many demands to conduct the active search and negotiation process needed to fill the nearly 80 S&T positions among the 550 full-time PAS jobs, along with nearly 2,350 additional full-time positions and several thousand part-time appointments to boards and commissions that must be made at the beginning of each administration. While the OPP is likely to be under intense pressure to fill positions for political reasons, department and agency heads have a large stake in filling S&T positions with people of high expertise. They are also in a better position to match the person with the job, and they are more likely than the OPP to be connected to the professional networks in which technical experts operate.

Recommendation B-1. Without giving up their exclusive right to make executive appointments, Presidents should place greater reliance on cabinet secretaries and agency heads for active identification and recruitment of candidates for subcabinet positions involving S&T expertise. The White House cannot hope to fill the thousands of PAS and other political positions that must be filled at the beginning of an administration in a timely fashion or adequately supervise them thereafter. In any case, most appointed S&T positions are level IV or V, are

primarily specialized in nature, and work primarily with department leadership, not the White House. We believe, therefore, that the departments and agencies should play a larger role in identifying and recruiting candidates.

KEY PERSONNEL ROLE FOR THE PRESIDENT'S ASSISTANT FOR SCIENCE ANDTECHNOLOGY

In attracting the best scientists and engineers for leadership positions in the executive branch, the importance of presidential leadership cannot be overemphasized, even where cabinet secretaries and agency heads take the lead in identification and recruitment. The President must be perceived in the research community to value science and respect first-rate science personnel. The selection and role of the Assistant to the President for S&T is crucial to this perception. An important message is sent to the science and engineering community by the quality and stature of the President's appointee as the Assistant for S&T. If the Assistant is perceived to be distinguished in his or her field, it will encourage other first-rate scientists and engineers to consider joining the administration.

One of the key roles of the Assistant for S&T is to assist the President in recruiting the best scientific and engineering talent in the country for top positions in the S&T-intensive agencies (Trattner, 1992:19). In recent decades, however, presidential science advisers have been chosen too late to participate in the all-important initial recruitment effort of new administrations, and they have too seldom played a strong role in recruitment once they were on board.

The President can signify the importance of science and technology to the administration by designating the Assistant to the President for S&T early in the transition along with cabinet secretaries and other top White House staffers.[3] The President should direct that the Assistant for

[3] Initially, presidential science advisors had the rank of special assistant to the President. After President Nixon abolished the position, Congress established the Office of Science and Technology Policy (OSTP) in 1976 to ensure that a capacity for science and technology advice existed in the Executive Office of the President. Until 1989, Presidents named the Directors of OSTP—who are confirmed by the Senate—also to be their science advisors. President Bush not only named his science advisor to be OSTP director but also restored the title and rank of Assistant to the President for S&T. While this precise arrangement may not last, the panel's recommendations are aimed at the functionally

S&T be actively involved and work cooperatively with the departments and agencies, and with the Assistant to the President for Presidential Personnel, in the recruitment of talented scientific and technical personnel for the President's team. It is important that the Assistant to the President for S&T be someone of high stature in the research community, and if he or she helps with presidential recruiting, the acceptance rate of the most qualified scientists and engineers for presidentially appointed leadership positions can be increased.

Recommendation B-2. The President should designate the Assistant to the President for S&T early in the transition and instruct him or her to work closely with department and agency heads and with the Office of Presidential Personnel in an active effort to identify and recruit outstanding scientists and engineers for presidential appointments. The President's Assistant for S&T also should help recommend changes, whether in personnel or in the authorities, location, reporting relationships, and staff and budgetary resources of key S&T positions that may be required to make the positions more effective and attractive.

SPECIALIZED CAPACITY OF THE OFFICE OF PRESIDENTIAL PERSONNEL FOR S&T RECRUITMENT

The Office of Presidential Personnel must make special efforts to recruit technical personnel. OPP is a small office that is faced with processing an unsolicited flood of thousands of applications, especially at the beginning of an administration. However, the most qualified scientists and engineers are probably not looking for appointed positions in the government. They are less likely to be living in the Washington area already or be involved in partisan politics than are capable individuals outside the S&T community. Active outreach to this special, limited pool of potential appointees is therefore essential.

Although some of the best scientists and engineers do not think of seeking a presidentially appointed position and have to be actively recruited, the OPP does not have adequate capacity for identifying and assisting in recruiting them, that is, a separate unit with specialized

equivalent individual who is providing personal advice and judgment to the President on S&T matters, including executive-level staffing.

personnel. Also, in some cases, initial contacts with prestigious scientists and engineers have not been handled sensitively, leading them to believe that inappropriate criteria are being used or that political criteria, while appropriate to some degree, are being overemphasized relative to technical qualifications.

Recommendation B-3. The Office of Presidential Personnel should have a special unit charged with assisting in the recruiting of outstanding scientists and engineers, and it should be given sufficient resources to ensure a high level of professionalism in recruitment. The new unit for scientific and engineering recruitment should work closely with the Assistant to the President for S&T and with the department and agency heads in identifying and approaching potential nominees for the administration, and special outreach efforts should be undertaken in conjunction with professional associations of scientists and engineers. We believe that specialized and experienced staff, working in conjunction with the Assistant to the President for Science and Technology and concerned department and agency heads, will better perform the recruitment function.

COOPERATION AMONG THE DEPARTMENTS, THE PRESIDENT'S ASSISTANT FOR SCIENCE AND TECHNOLOGY, AND THE OFFICE OF PRESIDENTIAL PERSONNEL

The success of these recommendations aimed at improving the out-reach and recruitment process depends critically on close cooperation among the departments and agencies, the Assistant to the President for S&T, and OPP staff. It is necessary and appropriate for the OPP to manage the appointment process because these are presidential appointments. OPP is a small staff agency, however. Therefore, it must and should rely on the department and agency heads for much of the work in identifying and recruiting prospective appointees, especially for lower-level executive positions within the departments—e.g., assistant secretaries and bureau heads. Finally, the Assistant to the President for S&T should play a key role in identifying and recruiting candidates for certain positions considered key to the President's program and to the government's major S&T efforts, and the President's Assistant for S&T should monitor for the President the overall effectiveness of the recruitment process where it counts—namely, in successful S&T policies and programs.

OTHER RECRUITING RECOMMENDATIONS

While the federal government should improve its recruitment process as much as possible, the other partners in the national S&T enterprise also have an interest and an obligation to encourage their most qualified members to serve in top government policy and management positions. The following recommendations are aimed at increasing the involvement of the industrial, academic, and nonprofit sectors and of the professional scientific societies in encouraging talented scientists and engineers to serve in the government.

Greater Involvement and Support of Nongovernmental Sectors

Not all of the responsibility for a high-quality cadre of scientists and engineers in the federal government should fall on the President. It should be accepted as the obligation of the research community to educate its members about the importance of government S&T policy to the future of the country. Members of the scientific, engineering, and health professions should be encouraged to serve in policy positions.

Business corporations and universities should facilitate the exchange of scientific personnel with the government. At a minimum, they should not discourage employees from taking leave to engage in public service. Business and university policies should be reviewed to remove impediments and to encourage public service. For instance, rigid limits on the number of years faculty members can take leave without resigning their positions should be relaxed for those accepting presidential appointments. Current law permits the federal government to make payments to university pension funds on behalf of faculty members on leave to serve in the government, but a university's personnel benefits program may or may not be structured in such a way as to make this possible. Company policies may or may not be written in such a way that those resigning to take a government position are able to receive severance pay due them.

Businesses and academic institutions should not only remove impediments to public service, they should actively encourage their promising members who are scientists and engineers to serve in the government and consider such service as a desirable part of career development. This approach may require a reorientation of attitudes toward such outside service on the part of universities and firms, but the long-term

viability of the nation's S&T enterprise depends in part on the quality and energy of the scientific and technical personnel available for public service.

Recommendation B-4. Academia, industry, and professional societies should establish and participate actively in programs that encourage especially talented scientists and engineers in midcareer to take leadership positions in the federal government. They should review their policies and procedures to ensure that they do not unduly penalize or restrict employees who leave for government service.

Although there may be occasional frustrations and conflicts with government, the business sector has a major stake in maintaining the quality of government's S&T-related policymakers, regulators, and program administrators. It should—through the Business Roundtable or similar cooperative body—explore ways to encourage government service on the part of its most talented personnel. Academic institutions should similarly review their policies and procedures.

There are a number of areas in which properly conceived and drafted policies would make it easier for midcareer employees to spend several years in a government position—for example, leaves of absence that are not just permitted but encouraged; pension plans that are constructed to permit government contributions; general policies for earned severance pay that are set up so appointees may take them without running afoul of conflict-of-interest provisions.

Increasing the Interest of Scientists and Engineers in Government Service

Few physical and biological scientists or engineers actively involved in research or technology development have any experience with the public policy process or exposure to government work. Some who are interested seek out opportunities to become involved, for example, by applying for a Washington fellowship or serving as a "rotator" in an NSF program office, but most devote themselves to their research careers and never find out whether they have the interest or aptitude to serve in the government. Some of the professional societies and science associations support young members early in their careers as congressional and executive branch fellows for one year. Some White House

fellows are scientists or engineers. These programs should be expanded to provide a cadre of politically sophisticated scientists and engineers who are interested in serving on federal advisory committees and, perhaps eventually, in serving in top S&T jobs in the government.

The existence of such a cadre would also be helpful to recruiters in the Office of Presidential Personnel and the departments and agencies who must fill S&T-related positions. They would be a source of candidates themselves, and they could serve as a network of people who could help evaluate colleagues not only for their professional credentials but also for their suitability in a federal executive position.

Federal agencies could also increase the early experience of scientists and engineers with government work by recruiting a greater proportion of promising midcareer scientists and engineers to technical advisory committees. Again, some would discover a keen interest in science and technology administration, and the agency could gauge their suitability for government service.

Recommendation B-5. The Washington fellowship programs of the professional and disciplinary societies and scientific associations should be expanded to expose more up-and-coming scientists and engineers to S&T issues and program administration at the national level, and the White House Fellows program should make a special effort to acquaint promising young scientists and engineers with S&T decisionmaking at the national level.

4

Making the Jobs Themselves More Attractive

The recommendations in the preceding chapters are aimed at finding the most talented individuals and reducing impediments to their appointment. The panel is also concerned with making the positions themselves more attractive, chiefly by ensuring that incumbents, once appointed, can see that their expert knowledge and judgment are heard and coupled effectively with S&T policymaking and management decisionmaking. Unfortunately, there is a growing belief in the scientific and engineering communities that the PAS jobs are becoming more difficult to do well. This belief stems in part from a perception that technical expertise and judgment are not given their due weight in making policy—or, sometimes, in making the appointments themselves. There is also a perception that some positions have been pushed down too many layers in the decisionmaking structure to be effective.

The panel wishes to emphasize that, in making the following recommendations, it does not imply that politics can or should be removed from the top S&T jobs. S&T appointees should be willing and able to support an administration's policy positions. But their basic function is to bring technical knowledge and informed judgment to the policy arena and to foster policies that are defensible on both political and technical grounds.

It follows that political considerations should not be permitted to prevail—in reality or perception—without the scientific and technical considerations being carefully considered. Unfortunately, there have been too many reports in recent decades (especially those associated with ideological or "litmus test" rejections of qualified potential nominees) that send a message that an incumbent's technical integrity may be compromised. We therefore present some strategies for improving the attractiveness of S&T positions.

APPROPRIATE RECLASSIFICATION AND RESTRUCTURING OF POSITIONS

Over time, many federal S&T positions have changed as the world has changed, national priorities have shifted, and the governmental structure has grown. Some positions have become more politicized in relation to their technical content, and others have been distanced from final decision authority by intervening layers in the bureaucracy. Because government is best served if the best technical judgment on difficult public policy issues is heard, considered, and balanced with political and other considerations by decisionmakers, the S&T executive leadership structure should be carefully designed to ensure that unbiased and accurate technical judgments can be made and directly applied to relevant policy choices. For example, although they should not be removed from politics, certain positions whose incumbents are expected to act primarily on long-term scientific or technical grounds should be insulated from day-to-day partisan pressures and, in selected cases, from automatic removal with changes in administration.

More generally, there is little overall logic to the structure of positions in terms of levels, political status, or organizational location. The structure has a historical rather than a logical basis. Therefore, functionally equivalent programs may be organized as a bureau in a department or as an independent agency. Otherwise similar positions may be presidentially appointed in one agency and career SES in another.

Because S&T activities are fast-growing and constantly changing, there should be a mechanism for ongoing or periodic evaluations and adjustments of the government's S&T structure in line with changed circumstances and priorities. The Office of Science and Technology Policy should monitor the S&T structure, in support of the roles in policymaking and in recruiting played by the Assistant to the President for S&T. It would also be beneficial for an independent organization to undertake periodic reviews of the status of presidentially appointed S&T positions. The Prune Book on the "Science 60" just published by the Council for Excellence in Government, although produced for a different purpose, provides an excellent first step in such an overall assessment (Trattner, 1992).

Recommendation C-1. The political status, responsibilities and authorities, and reporting relationships or the government's top S&T positions should be reviewed periodically—and restructured as

necessary—to ensure that the unbiased scientific and engineering judgment of incumbents is preserved and is directly introduced into the policy process. Such a process will maintain the effectiveness and relevance of these important positions, which in turn will ensure that highly qualified and capable individuals will want to serve in them. The reviews should be a responsibility of the Assistant to the President for S&T, with staff assistance from the Office of Science and Technology Policy. Independent reviews should also be conducted periodically by a private organization or set of organizations concerned with the government's effectiveness in carrying out its scientific and engineering missions.

Suitable restructuring strategies that might apply to particular positions include fixed terms, reorganizing to reduce layering of authority, and removing some positions from the Senate confirmation process.

Fixed terms, which can be structured in several ways. A few PAS positions already have fixed terms for the purpose the panel endorses—that is, to make them one step more insulated from day-to-day pressures of partisan politics. The positions covered now include the Surgeon General of the Public Health Service, the Director of the Bureau of Labor Statistics, the Director of the National Science Foundation, and the Chief Medical Director of the Department of Veterans Affairs.

Fixed terms have been suggested for other positions. For example, an advisory committee to the Secretary of the Department of Health and Human Services (HHS) recommended that the NIH Director be appointed for a renewable six-year term (Singer, 1990).

Such terms can vary in length, be renewable or not, and have more or less strict terms of removal, depending on the degree of insulation desired. In all cases, to be constitutional, the President must retain the power of removal. Incumbents of term appointments should be accountable and subject to removal by the President. But being a term appointment changes the terms of removal to some extent. It creates a presumption that individuals in these positions should stay rather than be automatically removed with every change in administration, and it requires an administration to give good reasons for such a removal. On the other hand, the use of terms also indicates that there should be periodic turnover —not for partisan reasons but to ensure new blood and fresh ideas.

Reorganization to reduce "layering." Certain positions should be considered for elevation in level and status to make them more effective in carrying out their responsibilities and thus more attractive to outstanding candidates. The Advisory Committee on the NIH recommended that the NIH Director be designated the chief advisor on science policy and biomedical research program planning to the Secretary of HHS or, alternatively, NIH be made an independent agency in order to attract an outstanding biomedical scientist as the Director (Singer, 1990). Similarly, the Advisory Committee on the Food and Drug Administration called for a major increase in the status and authority of the FDA Commissioner to enable the Commissioner to report directly to the Secretary and to issue regulations and manage the daily operations of the agency without having to go through multiple layers of higher-level review within the Department of Health and Human Services (Advisory Committee on the FDA, 1991:24).

Removal from the Senate confirmation process altogether, in the case of some positions (see also the next recommendation). Some positions would be more attractive to highly qualified scientists and engineers if they were not subject to the presidential appointment process at all, but were filled through merit procedures. This was done successfully in the case of the assistant directors of the National Science Foundation because political recruitment was taking too much time of the Director, and promising candidates were put off by the ordeal of the confirmation process in order to fill what they considered to be a professional position.

REDUCING ADMINISTRATIVE "OVERBRUSH"

The number of presidential appointments in the executive branch requiring Senate confirmation has increased from about 150 in 1965 to about 550 today. In addition, the number of other political appointments processed through the OPP has increased greatly. The number of Schedule C appointments has nearly doubled since 1976 to 1,700.[1]

[1] Schedule C positions are at the GS-15 or lower level, but are excepted from the competitive civil service because they are policy determining or involve a close and confidential relationship with a key official who is politically appointed. There were 1,665 Schedule C appointees in 1986, compared with 911 in 1976 (Ingraham, 1987). Traditionally these positions were held by

There are now more than 650 "noncareer" Senior Executive Service positions. The primary problem is the greatly increased number of political assistants to higher-level officials overseeing S&T agencies, a phenomenon the National Commission on the Public Service labeled "administrative overbrush" (1989b:169). These appointees—e.g., noncareer members of the Senior Executive Service holding deputy assistant secretary or similar positions and Schedule C staff assistants—tend to dilute decisionmaking authority held by line agency and bureau heads. This hampers the ability of S&T leaders to manage their programs and encourages second-guessing or "micromanagement" of decisions that are made by the highly qualified officials who are in the best position to reach informed judgments involving scientific and engineering as well as political and economic considerations.

There has also been an increase in the number of political appointees at lower levels within the line agencies. These positions take extra time to fill through the political appointment process in the first place and then they are subject to high turnover. Although they are political appointees, they are not necessarily known to the President personally and may divide their loyalty to the President with loyalty to the legislators or constituency groups that sponsored them. The National Academy of Public Administration has pointed out that "the advantages of an appointive process do not multiply in direct proportion to the number of appointments. Indeed, quite the opposite may be true—that as the system grows in scope, some of its benefits are converted into costs" (NAPA, 1985:29). The National Commission on the Public Service concluded that excessive numbers of presidential and other political appointees may undermine presidential control of the executive branch; the commission therefore called for an overall reduction from the current 3,000 politically appointed positions to no more than 2,000, with most of the cuts coming at the lower levels (Schedule C and noncareer SES) (National Commission on the Public Service, 1989a: 18).

We have already recommended that the department and agency heads should take the lead in recruiting for such positions (Recommendation B-1). We also believe that a smaller overall number of such positions would increase the stature and responsibilities—and therefore the effectiveness—of presidential appointees heading key S&T agencies and

personal secretaries and staff assistants to political appointees, but in recent years the number of political special assistants in the offices of assistant secretaries and of similar political appointees has increased greatly.

programs. This in turn will increase the likelihood that the government will succeed in recruiting and keeping the talent it wants, because one of the main incentives for outstanding individuals to accept a presidential appointment is the nature of the job itself, the opportunity to make a difference and accomplish something important. As it is, a perception has developed in the research community that many of the top government positions for which outstanding scientists and engineers might be recruited have become subject to inappropriate ideological screens, overlaid with hierarchy, and stripped of the resources and authority necessary to carry out the mission.

Recommendation C-2. Congress and the President should carry out an overall reduction in political appointees (especially in Schedule C and noncareer SES jobs, but also in PAS positions), as recommended earlier by the National Commission on the Public Service. Restricting somewhat the number of PAS positions and reducing greatly the number of overlying political assistants would improve the governmental S&T enterprise by increasing the accountability and authority of the key leadership positions, which in turn would improve recruitment of top candidates.

The panel fully realizes that this recommendation may seem unrealistic, because politically it would be difficult to achieve. We believe, however, that it is important to point out that the proliferation of political appointees is part of the problem in effective governance. Political layering and excessive interference from Schedule C and political SES appointees who work for higher level officials constitute important disincentives to serve. This is especially a problem in the S&T policy and administration area, because too much layering of authority affects the input of technical considerations in decisionmaking.

Another disincentive for those considering appointment to an S&T leadership position is the time it takes to recruit candidates for PAS and other politically appointed positions under them and get them through the confirmation process. This reduces the time and energy they have to devote to carrying out the substance of their jobs.

At the very least, even if it is impossible to reduce the overall number of political appointments at this time, there should be a presumption against creating additional positions without considering the negative effects on the recruitment and retention of highly qualified officials as well as effective decisionmaking and accountability.

A

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B

Presidentially Appointed Science and Technology-Related Positions

The following list of 78 positions illustrates the set of positions addressed in the report. They are presidentially appointed, Senate-confirmed (PAS) positions that are deemed to have important functional responsibilities in science and technology policymaking or program management. They are not all held by scientists or engineers. Other specialized skills may be equally important. For example, regulators like the Administrator of the Environmental Protection Agency and the Commissioner of the Food and Drug Administration have been lawyers. James Webb, a lawyer and businessman, was a very effective Administrator of the National Aeronautics and Space Administration (1961–1968) even though he was not himself a scientist or engineer (the Deputy Administrator and Associate Administrator—the latter the agency's general manager for day-to-day operations—were always technically qualified scientists and engineers) (Levine, 1982:Ch.3).

Not surprisingly, however, given the types of positions involved and their responsibilities, many of the appointees to these positions have scientific or engineering training. The Director of Defense Research and Engineering has always been an engineer with a background in weapons development. The Director of the National Institutes of Health has traditionally been a leading biomedical researcher with a Ph.D. or M.D. or both. The Director of Energy Research is usually a physicist or chemist with a distinguished research record. Those that have other backgrounds usually have long experience in the relevant policy arena. Accordingly, the report addresses the problems of attracting and keeping highly specialized personnel—especially scientists and engineers—in presidentially appointed positions that are subject to the Senate confirmation process.

The importance of the list is not that it is exact—it is not and never can be—but that a significant proportion of politically appointed leadership positions in the federal government, at least 78 of about 550, are heavily involved in science and technology functions important to the

effectiveness of the government and that many of them are held by individuals with advanced science, engineering, or health professional training, education, and experience.

POSITION	EXECUTIVE LEVEL
Executive Office of the President	
Office of Science and Technology Policy	
Assistant to the President for Science and Technology*	**II**
Associate Director for Policy and International Affairs*	**III**
Associate Director for Life Sciences**	**III**
Associate Director for Physical Sciences and Engineering**	**III**
Associate Director for Industrial Technology**	**III**
Council of Economic Advisors	
Chairman*	**II**
Council on Environmental Quality	
Chairman*	**IV**
Departments	
Agriculture	
Assistant Secretary for Science and Education*	IV
Commerce	
Under Secretary, Technology*	**III**
Assistant Secretary, Technology Policy	**IV**
Director, Census Bureau*	**IV**
Assistant Secretary/ Administrator, National Telecommunications and Information Administration*	**IV**
Director, National Institute of Standards and Technology*	**IV**

* One of the 50 PAS positions also profiled in the Council for Excellence in Government's *The Prune Book: The 60 Toughest Science and Technology Jobs in Washington* (Trattner, 1992).
** These OSTP associate director positions are not separately profiled in *The Prune Book* because the job of the Associate Director for Policy and International Affairs represents all four of them in a general way.

POSITION	EXECUTIVE LEVEL
Under Secretary/Administrator, National Oceanic and Atmospheric Administration (NOAA)*	III
Assistant Secretary, Oceans and Atmosphere	IV
Chief Scientist, NOAA	V
Defense	
Director, Operational Test and Evaluation*	IV
Under Secretary for Acquisition	II
Principal Deputy Under Secretary for Acquisition	III
Assistant to the Secretary of Defense (Atomic Energy)	V
Director of Defense Research and Engineering*	IV
Assistant Secretary (Command, Control, Communications, and Intelligence)*	IV
Assistant Secretary (Health Affairs)*	IV
Air Force	
Assistant Secretary (Acquisition)*	IV
Army	
Assistant Secretary (Research, Development and Acquisition)***	IV
Navy	
Assistant Secretary (Research, Development and Acquisition)***	IV
Education	
Assistant Secretary for Educational Research and Improvement*	IV
Energy	
Director, Civilian Radioactive Waste Management	IV
Assistant Secretary for Environment, Safety and Health	IV
Assistant Secretary for Conservation and Renewable Energy	IV
Director, Office of Alcohol Fuels	IV
Director, Office of Energy Research*	IV
Assistant Secretary for Defense Programs*	IV
Assistant Secretary for Nuclear Energy*	IV
Assistant Secretary for Fossil Energy	IV
Administrator, Energy Information Service	IV

(continued)

* One of the 50 PAS positions also profiled in the Council for Excellence in Government's *The Prune Book: The 60 Toughest Science and Technology Jobs in Washington* (Trattner, 1992).

*** The assistant secretary for R&D positions in the Army and Navy are not described separately in *The Prune Book* because they are similar and the description of the Assistant Secretary of the Air Force for Acquisition position is representative.

POSITION	EXECUTIVE LEVEL
Health and Human Services	
Assistant Secretary for Health*	**IV**
Surgeon General, Public Health Service*	**PHS**
Administrator, Alcohol, Drug Abuse, and Mental Health Administration	**IV**
Director, National Institutes of Health*	**IV**
Director, National Cancer Institute*	**PA**
Commissioner, Food and Drug Administration*	**IV**
Housing and Urban Development	
Assistant Secretary for Policy Development and Research*	**IV**
Interior	
Assistant Secretary—Fish and Wildlife, and Parks	**IV**
Director, U.S. Fish and Wildlife Service	**V**
Assistant Secretary for Water and Science*	**IV**
Commissioner, Bureau of Reclamation	**V**
Director, Bureau of Mines	**V**
Director, U.S. Geological Survey*	**V**
Justice	
Director, Bureau of Justice Statistics	**IV**
Labor	
Commissioner of Labor Statistics*	**V**
Assistant Secretary for Occupational Safety and Health*	**IV**
Assistant Secretary for Mine Safety and Health	**IV**
State	
Under Secretary for International Security Affairs*	**III**
Assistant Secretary, Oceans and International Environmental and Scientific Affairs*	**IV**
Under Secretary for Economic Affairs*	**III**
Transportation	
Administrator, Federal Aviation Administration*	**II**
Deputy Administrator, Federal Aviation Administration	**IV**
Administrator, National Highway Traffic Safety Administration	**III**

* One of the 50 PAS positions also profiled in the Council for Excellence in Government's *The Prune Book: The 60 Toughest Science and Technology Jobs in Washington* (Trattner, 1992).

POSITION	EXECUTIVE LEVEL
Veterans Affairs	
Chief Medical Director	**III**
Independent Agencies	
Agency for International Development	
Assistant Administrator, Science and Technology*	**IV**
Consumer Product Safety Commission	
Chairman*	**III**
Environmental Protection Agency	
Administrator	**II**
Deputy Administrator	**III**
Assistant Administrator for Water	**IV**
Assistant Administrator for Solid Waste and Emergency Response	**IV**
Assistant Administrator for Air and Radiation*	**IV**
Assistant Administrator for Pesticides and Toxic Substances*	**IV**
Assistant Administrator for Research and Development*	**IV**
National Aeronautics and Space Administration	
Administrator*	**II**
Deputy Administrator	**III**
National Science Foundation	
Director* II Deputy Director*	**III**
National Transportation Safety Board	
Chairman	**III**
Nuclear Regulatory Commission	
Chairman*	**II**

* One of the 50 PAS positions also profiled in the Council for Excellence in Government's *The Prune Book. The 60 Toughest Science and Technology Jobs in Washington* (Trattner, 1992).

POSITION	EXECUTIVE LEVEL
Tennessee Valley Authority	
Chairman*	**III**
U.S. Arms Control and Disarmament Agency	
Assistant Director, Verification and Implementation*	**IV**
Assistant Director, Nonproliferation Policy*	**IV**

* One of the 50 PAS positions also profiled in the Council for Excellence in Government's *The Prune Book. The 60 Toughest Science and Technology Jobs in Washington* (Trattner, 1992).

NOTE: The list includes the 50 PAS positions profiled in the Council for Excellence in Government's new publication, *The Prune Book: The 60 Toughest Science and Technology Jobs in Washington* (Trattner, 1992). It does not include 17 positions in *The Prune Book* that are Senior Executive Service or equivalent nonappointed. positions (e.g., the Director of the Defense Advanced Research Projects Agency) or that are in the legislative branch (e.g., Director of the Office of Technology Assessment). Neither list includes cabinet secretaries (executive level I) or deputy secretary positions (level II).

Our list also includes 34 PAS positions beyond those listed by the CEG. In most cases these are positions *under* those profiled in the Prune Book. For example, *The Prune Book* includes the Under Secretary /Administrator of the National Oceanic and Atmospheric Administration (NOAA) in the Department of Conunerce (level III) but not the Assistant Secretary for Oceans and Atmosphere (level IV) or the Chief Scientist of NOAA (level V) positions, which are included here. Thus the list has a higher proportion of level IV-assistant secretary and level V-commissioner/director positions than the CEG's group.

In some cases, *The Prune Book* described a single position as representative or a composite of several. For example, the responsibilities and activities of the Associate Director of the Office of Science and Technology Policy for Policy and International Affairs are considered parallel to those of the other three associate directorships. Finally, CEG left some positions out that are included here, such as the Under Secretary of Defense for Acquisition, because they were already included in the CEG's earlier publication, *The Prune Book. The 100 Toughest Management and Policymaking Jobs in Washington* (Trattner, 1988).

C

Postgovernment Employment Restrictions

This appendix reviews the major conflict-of-interest laws governing the postgovernment employment activities of federal officials and forms the basis for the panel's conclusions and recommendations in chapter 2: (1) that a comprehensive, uniform law be adopted and periodically updated that carefully balances the government's twin needs to ensure ethical behavior by public officials and to secure the services of highly qualified and experienced scientists, engineers, and other professionals; and (2) that overlapping and conflicting statutes be repealed, especially those affecting particular employees of the departments of Defense and Energy and those affecting a specific class of employees involved in procurement governmentwide.

THE MAZE OF POSTEMPLOYMENT RESTRICTIONS

In response to recommendations of the President's Commission on Federal Ethics Law Reform (1989:Ch. 4), the Ethics Reform Act of 1989 (P.L. 101–194) made major revisions in the criminal postemployment statute that applies to every former officer or employee of the executive branch (18 U.S. Code §207). Section 207 was revised to establish a comprehensive, uniform, and reasonable postemployment statute covering former personnel of the legislative and executive branches.[1] Also, to encourage enforcement by making a range of graduated sanctions available, the act established a new class of misdemeanor violations and added civil penalties and injunctive relief to

[1] Section 207 was itself the result of a codification in 1962 of a maze of postemployment. restrictions that had developed piecemeal since the Civil War, and it had been updated in 1978 by the Ethics in Government Act (Perkins, 1963; Roberts, 1988).

postgovernment employment restrictions.

As amended in 1989, section 207 strictly limits former government employees in representing private parties before their former agencies and in participating in matters in which the former employee were involved personally and substantially while in government. The basic restrictions are:

- A lifetime ban against acting as a representative on particular matters in which an individual participated "personally and substantially" as a government officer or employee (18 U.S. Code §207(a)).
- A two-year ban on representing anyone on particular matters that were under the former employee's "official responsibility" during his or her last year of government service (18 U.S. Code §207(b)).
- A two-year ban on certain former "senior employees" prohibiting their representation by personal presence in particular matters in which they participated personally while in the government (18 U.S. Code §207(c)).
- A one-year ban on communications by former employees at level GS-17 or higher made with intent to influence their former agencies in any particular matter pending before that agency (18 U.S. Code §207(d)).

In addition to the comprehensive governmentwide postemployment and other conflict-of-interest provisions of the 1999 Ethics Reform Act, at least four other sets of statutes affect former (and current) personnel involved in procurement-related activities:

1. The Procurement Integrity Act of 1988 added a new provision, section 27, to the Office of Federal Procurement Policy Act, which prohibits for two years participation of any former federal officer or employee (a) in negotiations with the government on behalf of a competing contractor concerning a procurement action or subsequent contract they participated in personally and substantially while in the government and (b) in the performance of such contract (41 U.S. Code §423) (Maskell, 1989);
2. 10 U.S. Code §2397 through 2397c, passed in 1985 and 1986,

which (a) prohibit certain former high-level Department of Defense (DOD) officers and employees from working in any capacity for particular major defense contractors for two years if they participated in specified procurement-related functions with those contractors during their last two years of service in DOD and (b) strictly regulate employment-related contacts of those same officials with contractors with which they are participating in procurement activities while the officials are still in the government;

3. Military "selling" statutes at 37 U.S. Code §801(b) and 18 U.S. Code §281, respectively a civil statute prohibiting retired officers of the armed services, National Oceanic and Atmospheric Administration, or the Public Health Service from selling goods (but not services) for three years to the service from which they retired and a criminal statute prohibiting retired regular officers of the armed services for two years from representing any person from selling goods or services to the service from which they retired; and
4. Section 605 and related sections of the Department of Energy Act, which prohibit for one year a former "supervisory employee" from appearing before or communicating with DOE with the intent to influence a pending department action.[2]

PROBLEMS POSED BY OVERLAPPING AND CONFLICTING LAWS

These provisions were all adopted before the 1989 Ethics Reform Act (some before the 1978 Ethics in Government Act) to address specific abuses or create civil remedies for behaviors prohibited by criminal conflict-of-interest statutes. In 1989, recognizing that they overlapped and conflicted with the new and expanded governmentwide

[2] The DOE Act also requires supervisory employees (defined as anyone above GS-15 or deemed to have important decisionmaking or regulatory authority) to divest themselves of all assets or other interests in energy concerns and to recuse themselves for one year from any proceedings involving a former employer (and for five years from any matter over which they had direct responsibility or were personally and substantially involved while working for a private employer).

ethics law, Congress suspended these additional laws to allow time to study them and consider their repeal or revision. The Office of Government Ethics and the Office of Federal Procurement Reform conducted a study and submitted draft legislation to Congress in June 1990 (resubmitted in February 1991) that would have repealed the statutes overlapping or conflicting with the Ethics Reform Act and enacted a new statute prohibiting release or receipt of procurement-sensitive information. Hearings on the administration's proposal were held before the Senate Committee on Governmental Affairs in February 1991, at which officials from the Department of Defense, Department of Energy, and the National Aeronautics and Space Administration presented testimony about the adverse effects that the Procurement Integrity Act (section 27 of the Office of Federal Procurement Policy Act) was having on their ability to recruit and retain highly qualified technical personnel (the testimony is summarized in the next section below) (U.S. Congress, 1991).

The current conflict-of-interest statutes create three kinds of postemployment problems. The first two, which result from the multiplicity of statutes and the excessive administrative burdens imposed by the laws, are described in this section. The third problem, the overly broad reach of the postemployment restrictions, is discussed in the next section.

Overlap and Confusion

First, the multiplicity of related statutes has added unnecessary uncertainty and complexity to the effort to protect the integrity of government. Federal personnel are subject to overlapping, inconsistent, and sometimes conflicting rules. This creates confusion for the vast majority of federal employees trying to act ethically and makes it difficult for federal ethics officers to provide clear and effective ethics training and counseling. Uncertainty about postemployment restrictions and their application and interpretation several years hence is also a major disincentive for experts in the private sector who are asked to serve in top federal positions for a limited period before returning to their professional careers.

According to Stephen Potts, Director of the Office of Government Ethics:

> In administering the executive branch ethics programs, we at OGE face one unavoidable fact: In certain areas, the ethics rules have become so complicated that, frankly, I don't believe anyone can really understand them. Little by little, rule by rule, we have addressed a problem here, another problem there, with a quick statutory fix, stacked one on top of another until we have reached the point that even an employee who sincerely wants to follow the rules doesn't have the remotest chance of understanding them so that he can follow the rules (U.S. Congress, 1991:8).

Potts went on to document the overcomplexity in the postemployment area. According to an OGE analysis, every government employee is subject to five postemployment restrictions under section 207, not counting the one-year cooling-off period for Cabinet and top White House officials (see Figure C-1).

The Procurement Integrity Act of 1988 (section 27) adds two more for procurement officials concerning particular procurements they were involved in, for a total of seven:

- They cannot assist anyone for two years in negotiations leading to the award or modification of the contract; and
- They cannot perform any work under the contract for two years.

If they have a supervisory role in procurement at the Department of Energy, they are subject to an eighth restriction:

- A one-year, no-contact ban similar to the one under section 207(d), except the latter applies only to higher-level officials.

If they are involved in procurement at the Department of Defense, they are subject to three additional restrictions under 10 U.S. Code §2397b, for a total of ten. They are prohibited from employment with a particular contractor if, during their last two years of service, they were:

- Stationed more than fifty percent of their time at the contractor's plant;

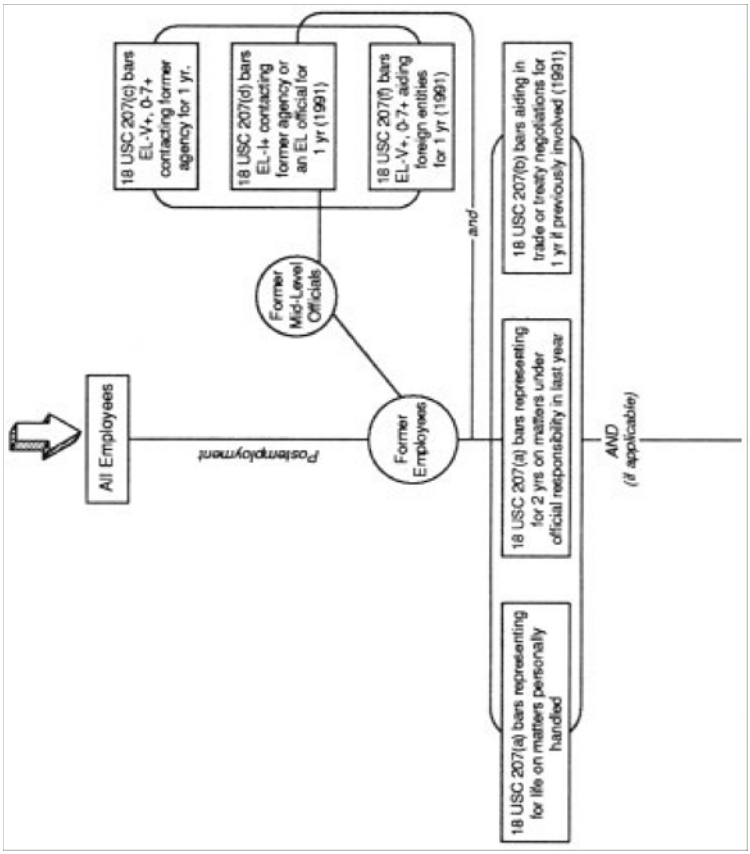
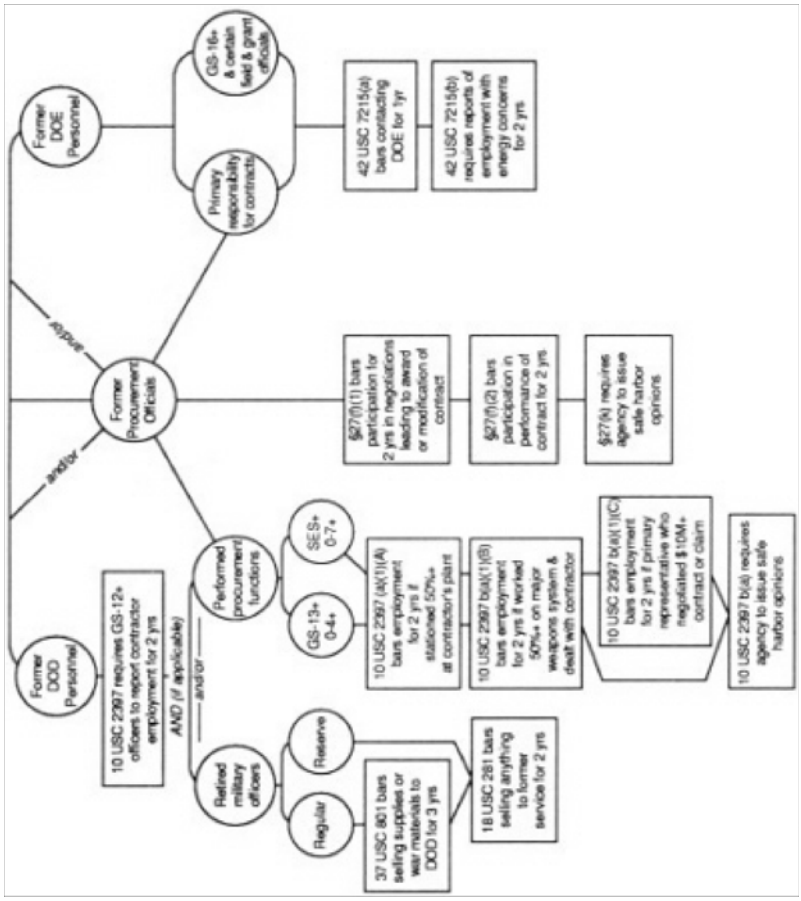


Figure C-1.
The Postemployment Maze.
SOURCE: Office of Government Ethics



- Performed a procurement function relating to a 82 major weapons system more than 50 percent of the time and had decision-making contact with a major weapons contractor; or
- At the Senior Executive Service level or above and served as a primary representative of the government in negotiating a contract or claim worth more than $10 million.

If they are retired military officers, they are subject to two more restrictions under the military "selling" statutes, for a total of twelve different superimposed restrictions (U.S. Congress, 1991:45–50):

- A two-year prohibition on the sale of anything, including services, to the service from which they retired; and
- A three-year prohibition on the sale of supplies or war materials to any DOD component.

Administrative Burden

The second postemployment problem caused by current ethics rules is the excessive administrative burden involved in counseling individuals on legal postemployment conduct and in providing them with written legal opinions about the propriety of their postemployment arrangements. Two of the laws, the Procurement Integrity Act (section 27 of the Office of Federal Procurement Policy Act) and the DOD statute (10 U.S. Code §2397b), give employees the right to obtain "safe-harbor" opinions. Although the DOD law applies only to a small number of employees, less than 2 percent, industry has come to insist that they ensure that their employment cannot be questioned later and thus embarrass the company. Each opinion must be written by a lawyer to address the propriety of employment with a specific contractor based on the particular procurement duties the individual employee performed. OGE reported in June 1990 that DOD had provided 4,400 safe-harbor opinions over the previous two and half years, of which only 200 (41/2 percent) were actually affected by section 2397b (*Congressional Record*, June 21, 1990: S8547). The burden of providing safe-harbor opinions under the Procurement Integrity Act, which applies across the government, is expected to be proportionately larger, since industry will no doubt expect them from all personnel involved in procurement activities.

Safe-harbor opinions are made necessary by the uncertainty stemming from the complicated and conflicting provisions of the several overlapping conflict-of-interest laws governing postemployment activities. Therefore, the committee recommends that they be made available generally to federal officials subject to such laws. The need for them, and the resulting administrative burden, would be much reduced, however, if our recommendation that the laws be simplified and codified in one place in the statutes is adopted (Recommendation A-2).

Adverse Effects on Federal S&T Agencies

The third problem, which is more substantive and difficult to address, concerns the extent to which postemployment restrictions go too far in limiting career choices and thus unnecessarily deter highly qualified experts from serving in important S&T leadership roles and deprive the government of the talent it needs. In testimony on the effects of the Procurement Integrity Act, Terrence O'Donnell, General Counsel of the Department of Defense, reported that two former Under Secretaries of Defense for Acquisition had cited postemployment restrictions in section 27 as factors in their resignations (U.S. Congress, 1991:116–118). John Tuck, Under Secretary of Energy, testified that postemployment restrictions in section 27 and in section 605 of the Department of Energy Act were "particularly problematical" for DOE, because much of the expertise required by DOE resides in its system of government-owned but contractor-operated national laboratories (U.S. Congress, 1991:140–142):

> It has been our experience that postemployment restrictions have discouraged senior National Laboratory employees from considering employment with DOE, and have deprived the Department of the technological and managerial know-how of National Laboratory employees whose career paths logically would have them wish to return to a senior Laboratory position after service in a senior DOE position. While existing post-employment restrictions would prohibit only certain communications with, or appearances before, the Government, the post-employment restrictions of the Procurement Integrity Act would prohibit certain officials who have been involved in the award, modification, or extension of a Laboratory contract from working for that National Laboratory at all for a period of two

> years after participating in the procurement process. Thus, section 27(f) of the Procurement Integrity Act would deprive the Department of the expertise of those senior officials who seek to continue their careers in the National Laboratories....

Stuart Evans, Assistant Administrator for Procurement of NASA, cited the negative impact of new procurement integrity law on recruitment and retention of top scientists and engineers (U.S. Congress, 1991:189):

> Highly motivated and skilled engineers and scientists from both industry and educational institutions have cited the burdens, complexities, and ambiguities of the procurement integrity law as principal reasons for not wishing to devote part of their career to government service, or even "pro bono" as a public service.
>
> The most damaging impact of the procurement integrity law has been in the loss to the agency of key senior technical and managerial officials, many of whom, by virtue of their long tenure with the agency have contributed so dramatically to many of NASA's achievements. Many of these individuals have stated that they are unable to remain with NASA until a planned retirement, and have in fact left federal service early.

The Augustine Commission, which assessed the future of the space program, reported in December 1990 that, along with inadequate compensation,

> recent postemployment restrictions on individuals—and particularly the future uncertainty of those restrictions and their interpretation—have been a deterrent to the recruitment of talented technical and managerial personnel into NASA. Key managers with extensive industrial experience in technical programs are particularly reluctant to commit to government service in areas where their talent could be effectively and immediately utilized—again because of concern over postemployment restrictions. These restrictions were, of course, imposed to preclude possible conflicts of interest, but have been found extremely difficult to draft with precision and balance. Last year, five individuals from industry were approached concerning one key executive level position at NASA. All declined,

> primarily because of inadequate compensation and postemployment restrictions (Advisory Committee on the Future of the U.S. Space Program, 1990:44).

Meanwhile, many of the agency's most talented and experienced senior executives have also left:

> The space station, to cite one prominent example, has had four managers in three years. During that same period, some three dozen of NASA's most senior executives have left, many to escape new ethics restrictions that limited their career choices (Goldstein, 1991; also, Marshall, 1989).

Waivers

The conflict-of-interest laws contain several limited provisions for waivers and exceptions to postgovernment employment restrictions. These provisions are intended to enable the government to take advantage of the expertise of exceptionally qualified former employees to deal with special situations.

The Ethics Reform Act of 1989, for example, continued a provision that allows department and agency heads to exempt a former official from the postemployment restrictions in section 207 of 18 U.S.C., if they certify in the *Federal Register* that the former official has outstanding qualifications in a scientific, technological, or other technical discipline that are specifically needed by the government in the national interest.[3] Similarly, the Secretary of Energy may grant limited waivers from the postemployment restrictions of the DOE act to former officials with outstanding scientific or technological qualifications if the Secretary certifies in the *Federal Register* that contact with the government that is otherwise prohibited would serve the national interest.

In 1989, Congress added a provision in the Defense Authorization Act (P.L. 101–189) that waives the postemployment restrictions of the

[3] The Senate Judiciary Committee added the provision when section 207 was created in 1962 because it recognized in its report that the section "would certainly and adversely affect recruitment by scientific agencies of the government of top-flight personnel," and it did not want to cut the agency off from the benefits of permitting the appearance of a former employee with "outstanding scientific qualifications" (quoted in Manning, 1964:210).

Procurement Integrity Act and section 207 for up to 25 federal officials at a time who come from and go directly back to a government-owned, contractor-operated national laboratory. This was in response to the effects of the Procurement Integrity Act, which makes such movement of personnel virtually impossible because it prohibits for two years not just dealing with the government but also advising behind the scenes and working under contracts the individual was involved with personally while in the government. Since the national laboratories are operated mostly by government contract, individuals who expect to return to them because they are the best or only place to exercise certain kinds of expertise—for example, nuclear weapons construction and disposal—are very reluctant to take a government position. Although the 1989 law is unique in permitting a prospective waiver that lets the individual know beforehand their exact status, the process is so cumbersome it has never been used. Use of the waiver requires elaborate and time-consuming process of justification and must be granted by the President personally.

Authority to grant conflict-of-interest and postemployment waivers is intended for special cases, however, not for general use. It cannot counteract the general effects of overly broad postemployment restrictions, although it is useful in specific instances.

CONCLUSION

The panel discussed the issue of appropriate postemployment restrictions at length at each of its meetings and concluded that, with the addition of legislation protecting procurement-sensitive information, the current restrictions in 18 U.S. Code §207 and related sections are a reasonable and appropriate basis for protecting the public's interest in assuring ethical conduct of former and current federal officials and at the same time for assuring a refreshing flow of top scientific and technical talent from the private sector and back (see Recommendation A-1). Section 207 of 18 U.S.C. includes several prohibitions against switching sides and improper use of influence, including the lifetime ban on representation with respect to particular matters involving a specific party, such as a contract or claim, in which the former official participated personally and substantially. Section 207 also contains a one-year ban on communications by former officials at level GS-17 or above made with intent to influence their former agencies and a one-year ban on any communication by former cabinet secretaries or high White House officials made with intent to influence their former agency or any

executive-level officials. Section 209 of 18 U.S.C. requires federal employees negotiating for other employment to disqualify themselves from participation in procurements or other particular matters affecting the prospective employer.

Several of the statutes recommended for repeal impose additional restrictions to discourage improper influence or use of procurement-sensitive information. Under the Procurement Integrity Act, former federal employees are prohibited from assisting behind-the-scenes as well as by personal representation in the negotiation or modification of contracts they were involved in as federal employees, and they are prohibited from ever performing any work under such contracts. Under 10 U.S.C. §2397b, certain mid-and high-level DOD officials are prohibited from working for contractors at all for two years if they were involved in certain procurement-related functions with those contractors during their last two years in government.

The underlying purpose of these laws is to prevent the use of inside information by former officials, but the public interest would be better met by a new statute that identifies the types of sensitive information that should be protected and prohibits their disclosure or receipt. This direct approach is preferable to an indirect attempt to prevent unwanted behavior by broad bans on employment or activities. Although such bans may reduce the opportunities to disclose source-selection or bid or proposal information, they also prohibit a broad range of activities based on knowledge and skills that are not based on involvement with a procurement while in the government. Thus, former federal officials who are highly qualified scientists and engineers are prevented from undertaking perfectly legitimate activities in the course of practicing their professions. As a result, the government's ability to recruit and retain highly qualified personnel for tours of duty in top S&T positions is unduly restricted, and the public interest suffers. The flat ban on performing any work under a contract for two years is also overly restrictive and may deprive the government of expertise needed to fulfill contract goals.

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