Science Advice: Back to the Future?

As the change of Administration approaches, many scientists are eager to see science advice raised to a higher level; is PSAC a model or a relic of a bygone era?

ONCE again, the presidential election season finds many members of the scientific establishment looking ahead to the next administration with one eye on the late 1950s and early 1960s. Those were the days when science advisers were close confidants of the presidents they served and a powerful President's Science Advisory Committee (PSAC) provided a direct conduit for advice from scientists into the White House.

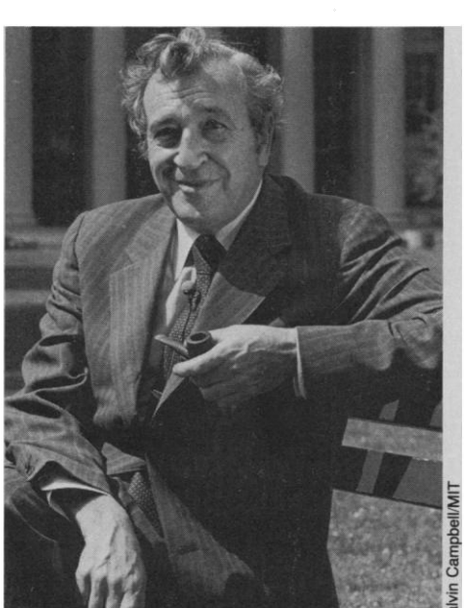
Arguments in favor of resurrecting a similar arrangement have made their quadrennial appearance in recent weeks, with a congressional hearing, an all-day session at the AAAS annual meeting in Boston, and the publication of a collection of essays* devoted to the topic of science advice to the federal government. The discussion this election year is more intense than usual, however, because for the first time in 20 years a change of administration is guaranteed. The next president will have a new chorus of advisers and a free hand to organize the White House power structure—and scientists would evidently like a place in the top echelon.

"There is no question that in this day and age, when science and technology are such an important part of almost everything in front of the President, that there should be a science person at a high-level position in the White House," says Frank Press, president of the National Academy of Sciences and former science adviser to President Carter.

Much of the recent flurry of interest in presidential science advising can be traced to the efforts of William T. Golden, who pulled together the collection of essays, persuading 83 veterans and close observers of past and present science policy regimes to air their thoughts. Golden, who authored a report in 1950 that provided the blueprint for the science advisory apparatus eventually adopted by Presidents Eisenhower and Kennedy, also helped arrange the AAAS session at which some of the authors discussed their papers. Many of the same cast of characters flew to Washington a few days later, in what one participant termed a "traveling road show," to testify before the House subcommittee on research and technology.

One theme that runs through many of the essays and the testimony is the perception that the science advisory apparatus is now so attenuated in scope and influence that scientific matters are not getting their due consideration in national policy-making. In perhaps the most acerbic essay in Golden's book, for example, Jerome Wiesner, science adviser to President Kennedy, claims that "Vital decisions that will not only shape the long-range future of the U.S. but of the world are being deferred or undertaken without adequate debate." He cites lack of action on environmental issues and the Strategic Defense Initiative (SDI) as cases in point. Wiesner also lays the blame for an array of problems, including the Challenger disaster and the decline in American industrial competitiveness, on "the absence of a Presidential [science] advisory group."

The status of the science adviser in fact began to wane in the mid-1960s. It suffered badly during the Vietnam War, when many in the academic community opposed the policies of the Johnson Administration, and reached its nadir in 1973, when President Nixon abolished PSAC and erased the post of science adviser from the Executive Office's organization chart. Nixon was particularly upset because some members of PSAC had gone public with their opposition to the Administration's policies on the development of supersonic aircraft and antiballistic missile defenses.



Calvin Campbell/MIT

Jerome Wiesner. *"Vital decisions . . . are being deferred or undertaken without adequate debate."*

Three years later, President Ford put a science adviser back on the payroll and Congress that year approved legislation making it a legal requirement for Ford and subsequent presidents to establish an Office of Science and Technology Policy (OSTP) in the Executive Office. But in recent years, the science adviser has not been a senior presidential assistant. Instead, he has functioned more as an adviser to the President's assistants.

George Keyworth, President Reagan's first science adviser, was not appointed until well into the first year of the Administration. He reported to, and derived his influence from, Edwin Meese, who was then Reagan's chief of staff. Keyworth departed at the end of 1985, a year after Meese left the White House for the Justice Department, and it took 5 months for the Administration to name his successor. After several scientists turned the job down, William R. Graham, then the acting director of the National Aeronautics and Space Administration, took the appointment.

Both Keyworth and Graham defend the current arrangement. Keyworth argues, for example, that "the science advisory mechanism is most active—and most important—when it advises whoever the President places most trust in on issues involving science and technology." Graham testified that "the working relationship between OSTP and the Office of Management and Budget, the National Security Adviser and his staff, the Council of Economic Advisers, and the White House office are today excellent."

They received support from Solomon Buchsbaum, an AT&T executive who chairs the White House Science Council, an advisory body established by Keyworth and maintained by Graham. "OSTP has been performing a vital job and doing it with

**Science and Technology Advice to the President, Congress, and Judiciary*, William T. Golden, Ed. (Pergamon Press, New York, 1988).

skill," Buchsbaum testified, noting that budgets for basic research have doubled during the Reagan years, a measure he called the "ultimate test" of OSTP's effectiveness.

Few others seem happy with the current status of the science adviser, however. For example, James Beggs, the former head of NASA, testified: "I do not believe that the OSTP has been very effective in carrying out its statutory mandate. . . .The science adviser. . .has in most cases not had the direct ear of the President, so the operating departments and agencies, knowing that his advice will be just one of a number of different inputs to the President, have tended to bypass him." Beggs is said to have been particularly adept at this in winning presidential support for the space station.

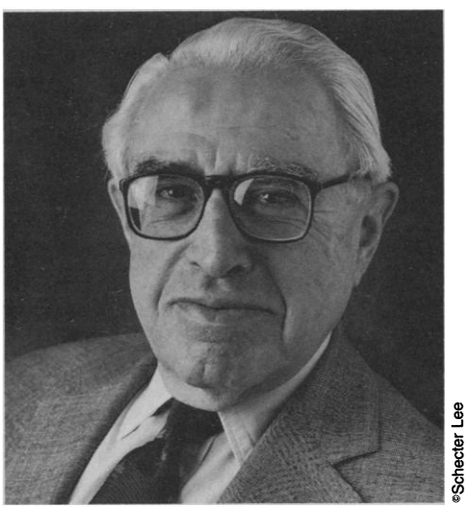
Press, drawing on his own experience in the Carter Administration, said "being in the Executive Office but not on the immediate White House staff does not afford sufficient involvement or influence in presidential policy-making." Press's solution is straightforward: "The President's science adviser should be named as an Assistant to the President," a cabinet-level position on a par with the National Security Adviser and with direct access to the President. Failing this, Press suggests that the science adviser be given a position in the Cabinet without portfolio. Variations on this theme are repeated by many other authors in the Golden volume, although a few, notably Keyworth and Representative George Brown (D–CA), go one step further by calling for the establishment of a new Department of Science and Technology.

There appears to be broad agreement that the resources available to the science adviser are inadequate. Both Keyworth and Graham have had to cope with a shrinking budget for OSTP. It now stands at $1.89 million, which supports a professional staff of 20, including 12 who are on detail from other federal agencies and four on short-term fellowships from professional organizations. The budget request for next year would trim another $100,000 from OSTP. Donald Hornig testified that he had a full-time staff of about 35 professional people and a budget of over $2 million when he was science adviser to President Johnson in the mid-1960s.

Press argues for a professional staff of 25 to 35 people, who should be "full time, not begged and borrowed from other agencies." He also recommends a budget "of a few million dollars" to cover the cost of special analyses and independent research. "The science adviser should not have to depend on funds from agencies with a vested interest in the outcome of White House decisions," as it is now forced to do, he says.

One other topic on which there is general agreement is that the science adviser must function first and foremost as a member of the President's staff and not a representative of the scientific community. Edward E. David, Jr., President Nixon's science adviser, for example, testified that PSAC lost credibility in the Nixon White House because it was seen as "a special pleader for the academic community."

Press, noting that "the position of science adviser embodies tension between its functions and the expectations of the scientific community," says "the perception that the incumbent regards himself or herself as the resident advocate of particular interest groups. . .will almost certainly be fatal to his or her influence in the long run."



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William Golden. *Persuaded most former science advisers to air their views.*

As for resurrecting PSAC, there is a good deal of sentiment for this among veterans of the old system, including Wiesner and Hornig. In its glory days, PSAC served as a high-level source of technical analyses and often provided a counterweight to the studies done by federal agencies. Wiesner grumbles that the Reagan Administration "depends more on the agencies that sponsor individual programs to evaluate them, and on an inchoate collection of informal advisers."

The White House Science Council, a committee of scientists who are generally in political tune with the Administration, has functioned as the chief channel for outside advice to the science adviser in the Reagan Administration. It meets once a month and conducts occasional studies, including an influential report on the health of the universities written by a panel chaired by David Packard, the Packard of Hewlett-Packard.

Those who would like to see PSAC reincarnated generally want a more independent body. Keyworth, however, derides the idea, arguing that "much of the real motivation. . .is the barely-concealed desire of the science community to tell the President what it thinks is important—and if he won't heed their advice, to tell the Congress or the media or anyone else who will listen."

Ashton Carter, a physicist at Harvard's Kennedy School of Government, offers a different objection. "PSAC belongs to a bygone political era," when there were fewer sources of technical analysis of major policy issues, he noted. Now, there is an abundance of independent studies—"the problem is not the strength of the signal, but the signal-to-noise ratio"—and it is far better to rely on the published analyses of organizations with a proven track record than on the opinions of a high-level committee of insiders whose deliberations are not open to public scrutiny.

Press, who used informal panels of scientists convened on an ad hoc basis to study particular issues when he was head of OSTP, notes that the next administration will establish whatever mechanism for drawing in scientific expertise best suits its operating style. However, he argues for a system in which outside advisers devote a considerable fraction of their time to the cause. "A pro forma 2 or 3 days a month is barely sufficient to become thoroughly briefed, let alone to formulate and render considered judgments," he says.

One oft-repeated refrain is that the next administration would do well to appoint its science adviser early on, so that he or she could assist in the selection of people to head key scientific agencies. An early appointment would also help the adviser establish a niche in the White House power structure as it coalesces.

However, the early appointees in a new administration tend to be people who have participated in the political process and are already well known to the new president. Scientists and engineers seldom fit the bill. As David points out, the fact that previous administrations have been tardy in appointing a science adviser reflects "the lack of rapport between new presidents and *any* competent scientist or engineer."

John McTague, who filled in as acting science adviser in the long interregnum between Keyworth and Graham, agrees. "The long-term solution," he says, "is for the technical community to become more involved in the political process, in which they are woefully absent—except when they wish to appear as special pleaders, and then it's usually too late." ■ **COLIN NORMAN**

Information for this article from the AAAS meeting was supplied by Eliot Marshall.