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## OFFICE OF SCIENCE AND TECHNOLOGY POLICY

The Office of Science and Technology Policy (OSTP) in the Executive Office of the President was established in 1976 as a result of the National Science and Technology Policy, Organization, and Priorities Act that President Gerald Ford signed into law that year. Since that time, it has functioned as the institutional focal point through which presidents have coordinated and implemented national science and technology policies or policies in areas with strong technical components such as the economy, education, energy, environment, health, national security, and space.

The Office of Science and Technology Policy had its predecessor in the nonstatutory office of the Special Assistant to the President for Science and Technology in the White House, which was established in 1957 when President Dwight D. Eisenhower appointed James R. Killian Jr. as the first such assistant or science adviser in the wake of the Soviet launching of the satellite *Sputnik*. Because the science adviser also chaired the President's Science Advisory Committee (PSAC), a group of science advisers mainly from outside of the federal government, as well as the Federal Council for Science and Technology (FCST), which consisted of technical representatives from federal agencies, his office provided staff support for these organizations as well and quickly grew to be one of the largest offices in the White House. Concerns about its size and congressional demands for accountability in executive science policy led President John F. Kennedy to establish,

with the consent of Congress, the statutory Office of Science and Technology (OST) in the Executive Office of the President in 1962. The president's science adviser always held the position of director of the OST but now could be called on to testify in Congress in his latter capacity. The office and much of the rest of the presidential science advisory system were, however, abolished in 1973 by President Richard M. Nixon, who was antagonized by the opposition of many scientists, including some associated with PSAC, to his Vietnam War and technology policies and was convinced that the science advising system served more the interests of the scientific community than his.

Prodded in part by a report of the National Academy of Sciences in July 1974 that advocated the reestablishment of a science advising system in the White House, Gerald Ford, who took over the presidency from Richard Nixon following the Watergate scandal in August 1974, set in motion a process that led to the passage of the 1976 act that established the OSTP. Created thus by a specific congressional act, the OSTP enjoyed a more secure position in the federal bureaucracy than the earlier OST. The act also formalized the Federal Council for Science and Technology in the form of a Federal Coordinating Council for Science, Engineering, and Technology, which was upgraded under President Bill Clinton to the National Science and Technology Council, with the president as chairman. PSAC, however, was not revived until President George H. W. Bush established the President's Council of Advisers on Science and Technology (PCAST) in 1990.

As in the OST/PSAC days, the president's science adviser always headed the OSTP and chaired or co-chaired the PCAST after it was established. Starting with H. Guyford Stever under Ford, OSTP directors have included Frank Press under Jimmy Carter, George Keyworth and William Graham under Ronald Reagan, D. Allen Bromley under George H. W. Bush, John Gibbons and Neal Lane under Bill Clinton, John Marburger under George W. Bush, and John Holdren under Barack Obama.

[See also **Environmentalism**; **Killian, James Rhyne, Jr.**; **National Academy of Sciences**;

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## OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT

Established in June 1941, the Office of Scientific Research and Development, always referred to by its initials, OSRD, quickly became the most famous and effective organization at harnessing academic American science for World War II. Identified with its director, Vannevar Bush, a prominent administrator from the Massachusetts Institute of Technology (MIT) as well as a pioneering analog computer designer, the OSRD embodied the assumptions of the interwar political economy of science and technology. Far from seeing the OSRD as a test bed for a future in which the military would become the dominant patron of the physical sciences and engineering disciplines, Bush and his colleagues, especially James Bryant Conant, then Harvard University president, created an institution that would preserve and protect the boundaries separating science from politics. OSRD's mode of operation was part of this larger goal. First, OSRD decided whenever possible to use existing university and industrial facilities rather than establish new government

laboratories as the main sites for research. Second, OSRD used the contract rather than the grant for funding investigation. By the war's end, Bush understood that the very world he had created the OSRD for no longer existed, in large measure because of the OSRD's success in forging connections among academic researchers, industrialists, and the armed services.

OSRD incorporated Bush's first attempt at organizing science, the National Defense Research Committee (NDRC), established in June 1940 and the nascent Committee for Medical Research, a new organization under the direction of Alfred N. Richards of the University of Pennsylvania that attempted to manage medical research. Although the NDRC had proved successful at bringing American academic researchers to bear upon problems of military interest, it possessed one original defect—an inability to provide a mechanism for the actual development of devices invented by researchers. It is one thing to make a weapon that works on a laboratory bench; it is an entirely different affair to design a device that workers without advanced degrees might manufacture in quantity. OSRD acquired the legal authority as part of the Office of Emergency Management, under the president, to authorize and fund development work in both universities and corporations.

Rather than create new institutions, the OSRD sought to use existing university facilities whenever possible, although this sometimes involved the creation of new laboratories on university campuses. Among the most famous were the MIT Radiation Laboratory, the preeminent Allied radar research facility, and the Harvard Radio Research Laboratory, the site of Allied work on radar countermeasures. The MIT laboratory quickly became a hotbed of research in which physicists from around the country toiled to take radar from the laboratory to the battleship, the bomber, and the night fighter. Radiation Laboratory researchers worked with industrial scientists and designers to develop weapons that American firms might mass produce. At the Harvard laboratory, researchers devised measures to block Axis radar, including chaff, strips of aluminum foil, each of which reflected Axis radar and confused German radar operators.

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