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KILBY, JACK

See Solid-State Electronics.

KILLIAN, JAMES RHYNE, JR.

(1904–1988), science and education administrator, was best known for his service as president of the Massachusetts Institute of Technology (MIT) from 1948 to 1959 and as the first special assistant to the president for science and technology, or science adviser, under Dwight D. Eisenhower while on leave from MIT from 1957 to 1959. In both positions he helped shape American science, technology, and educational policy during the Cold War despite his lack of advanced training in science or technology.

Born in Blacksburg, South Carolina, Killian went to MIT and received a bachelor's degree in management in 1926. He started his career at the MIT magazine *Technology Review* after graduation, becoming editor in 1930. In 1939 he became executive assistant to the institute's physicist president Karl Compton, worked as the liaison between the institute and the radar-making Rad Lab during World War II, and eventually succeeded Compton in 1948, a remarkable recognition of his management skills.

In 1953–1954, Killian played his first major national policy role when he chaired the Technological Capabilities Panel of the Science Advisory Committee of the Office of Defense Mobilization (ODM-SAC) in the Executive Office of the President. With Eisenhower's approval, the panel's recommendations resulted in a decisive acceleration of the U.S. missile programs and the launching of

reconnaissance satellites and the U-2 spy planes. This performance also led Eisenhower to tap Killian to head the influential President's Board of Consultants on Foreign Intelligence Activities.

Killian was thrust onto the national stage in 1957 when Eisenhower appointed him as the White House's first full-time science adviser to help coordinate American science, technology, space, and defense policy in the aftermath of the Soviet launching of the satellite *Sputnik*. Killian was also elected chairman of the newly reconstituted President's Science Advisory Committee (PSAC) on the basis of the old ODM-SAC. He soon wore a third hat as chairman of the new Federal Council for Science and Technology that consisted of representatives from major federal agencies. With vital support from the PSAC, Killian played a key role in the establishment of the National Aeronautics and Space Administration, the reorganization and centralization of the Department of Defense, and the launching of the negotiations that would eventually lead to the Limited-Test-Ban treaty in 1963. A political moderate and an adroit interlocutor at the interface between science and government, Killian gained Eisenhower's trust and helped open the golden age of presidential science advising.

Killian returned to MIT in 1959 as chairman of its board but remained active in Washington as a member (and later consultant) of the PSAC and as chairman of the President's Foreign Intelligence Advisory Board under John F. Kennedy. In the 1960s and 1970s, Killian, as chairman of the Carnegie Commission on Educational Television and then of the Corporation for Public Broadcasting, devoted much of his energy to the establishment of public broadcasting in the United States. In 1973, after President Richard Nixon abolished the PSAC over policy disagreements, Killian chaired a "blue ribbon" committee of the National Academy of Sciences, whose report was in part responsible for the establishment of the White House Office of Science and Technology Policy in 1976.

[See also Compton, Karl Taylor; Higher Education and Science; Journals in Science, Medicine, and Engineering; Military, Science and Technology and the; Missiles and Rockets;

National Academy of Sciences; National Aeronautics and Space Administration; Nuclear Weapons; Office of Science and Technology Policy; Physics; President's Science Advisory Committee; Satellites, Communications; Science; Space Program; Space Science; Technology; and Television.]

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Zuoyue Wang

KING, CLARENCE RIVERS

(1842–1901), geologist, explorer, writer, and the first director of the U.S. Geological Survey (USGS). A magnetic personality with wide-ranging intellectual interests, he impressed contemporaries as one of the foremost talents of his day. King was born in Newport, Rhode Island, to parents with deep New England roots. His father, who hailed from a merchant family that thrived in the China trade, died when King was six. At 18, King enrolled in Yale's Sheffield Scientific School. In 1863, he joined the California Geological Survey headed by Josiah Dwight Whitney, an experience that formed the basis of his classic book *Mountaineering in the Sierra Nevada* (1872).

While still in his twenties, King persuaded Secretary of War Edwin Stanton to back his proposal for a survey of the Great Basin, the arid region between the Sierra Nevada and Rocky Mountains. In 1867, Congress authorized funding for the King-led Fortieth Parallel Survey under the auspices of the War Department. King made scien-

tific research a top priority, selecting an expedition team that included geologists, a zoologist, and a botanist, among others. Fieldwork for the Fortieth Parallel Survey resulted in the publication of highly regarded studies on geology, mining, paleontology, ornithology, and the region's flora, and advanced the science of microscopic petrography. King's influential *Systematic Geology* (1878) offered an account of the formation of the North American Cordillera. Challenging the prevailing uniformitarianism of his era, King described the forces—some “catastrophic,” others more gradual—that forged Western landscapes from the Precambrian to the Quaternary period.

The Fortieth Parallel Survey set new standards for expeditionary science and topographical mapping of the U.S. West, while making pioneering use of photography. King and colleagues earned further accolades for uncovering a diamond hoax that nearly cost investors millions of dollars. Most importantly, the survey marked a key transition from military to civilian control of Western exploration. In 1879, Congress passed a measure creating the USGS to consolidate Western surveys in a single, civilian office. President Rutherford B. Hayes nominated King to lead the agency. As USGS director, King emphasized “economic geology” in the service of mining, while continuing to support basic research. He resigned in 1881 to pursue private mining interests, allowing explorer John Wesley Powell to take charge of the USGS.

A legendary raconteur, King was a fixture in the social worlds of New York, Washington, and London. However, his mines and other business ventures faltered, leaving him on the edge of insolvency. In the late 1880s, he began a clandestine relationship with Ada Copeland, an African American nursemaid in New York City. The couple had five children. Fearing a scandal, King took pains to conceal the relationship and did not reveal his true name to Ada until just before his death from tuberculosis in 1901.

Historian Henry Adams had predicted that his friend Clarence King “would die at eighty the richest and most many-sided genius of his day.” Despite precocious successes in science, literature, and government, King spent his final decades in pursuit of a fortune that eluded him.

[See also *Bo Surveys; Geontology; Ph Science; and*

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**THE HISTORY OF
AMERICAN SCIENCE,
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Hugh Richard Slotten
EDITOR IN CHIEF

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