

George Keyworth II, 77, Science Adviser To Reagan and 'Star Wars' Advocate, Dies

By WILLIAM J. BROAD

George A. Keyworth II, a science adviser to President Ronald Reagan who strongly backed the antimissile plan known as Star Wars and came to see it as an important factor in the Soviet collapse, died on Wednesday in Monterey, Calif. He was 77.

Bruce Abell, a longtime aide, said the cause was prostate cancer.

Reagan's proposed antimissile system "offers a way to stop an attack," Dr. Keyworth said in a 1983 talk. Two years later, he told military contractors that federal research might soon offer "unequivocal proof" of the nation's ability to destroy enemy missiles.

The administration's vision of weapons in space — a projected five-year, \$26 billion project (almost \$60 billion today) — met stiff opposition from specialists and Congress, and the plan never got beyond the research stage.

Even so, conservative historians say Moscow became so unnerved at the prospect of a daunting new rivalry that the threat helped end the Cold War and decades of nuclear buildups.

Dr. Keyworth, a physicist, came to this watershed of history not from social prominence, political experience or high technical standing, but rather from an unassuming role he had played between warring factions of the scientific community.

In the 1970s he worked at the Los Alamos weapons lab in New Mexico, where J. Robert Oppenheimer had presided over the birth of the atom bomb during World War II. One of Oppenheimer's rivals, Edward Teller, had lobbied for the hydrogen

bomb — roughly a thousand times more powerful — and had clashed bitterly with Dr. Oppenheimer over his initial opposition to the H-bomb's development.

Oppenheimer was dead by the 1970s, but Teller remained a persona non grata at the lab. So the lab's director asked Dr. Keyworth to host Dr. Teller and his wife to help bridge the old divide.

The Tellers stayed at Dr. Keyworth's home, and the two men — one boyishly enthusiastic, the other an elderly force of nature — hit it off. Thoughtfully, Dr. Key-

Support for a defense system originated from a friendship with Edward Teller.

worth arranged for Dr. Teller, an amateur pianist, to play with musicians from Santa Fe.

In May 1981, not long after, Dr. Keyworth was installed as a senior White House official advising President Reagan on matters of science and national security.

"Bluntly," Dr. Keyworth said in 1986, shortly after leaving the post, "the reason I was in that office is because Edward first proposed me, and the president very much admires Edward."

George Albert Keyworth II, known as Jay, was born on Nov. 30, 1939, in Boston, the son of a furniture factory president, Robert Allen Keyworth, and his wife Leon-tine Briggs Keyworth. He went to

Yale and graduated in 1968 with a doctorate in physics from Duke University.

He took a job at Los Alamos upon graduation and rose to head the lab's physics division. While there, he grew fond of Western belt buckles and developed an easygoing style.

In Washington, Dr. Keyworth was initially seen as naive and inexperienced. "I was absolutely apolitical," he told The Times for a 1982 profile. "I really didn't understand how things worked."

But he did understand his mentor's drive to reshape history. At White House meetings, Dr. Teller argued that the time was ripe for perfecting technologies that could finally defeat Soviet missiles. In a dark twist, the arms threatening to ruin the United States were tipped with Dr. Teller's own invention, hydrogen bombs.

On March 23, 1983, it was Dr. Keyworth who greeted Dr. Teller at the White House for President Reagan's announcement of a crash program of antimissile research. Known as the Strategic Defense Initiative, it focused on weapons in space because their range would greatly exceed that of ground-based arms. It especially sought ones that could flash at the speed of light across the heavens to smash rising missiles.

Top scientists quickly questioned the plan's feasibility, some calling it dangerous. They feared that the idea, while ostensibly defensive, actually lent itself to offense, since a leaky shield would never protect the nation but could mop up a ragged retaliation if Washington struck first. They argued that Reagan's initiative could, for the first time, make nu-



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George A. Keyworth II at the White House in 1981. He had led the physics division at Los Alamos.

clear war thinkable.

Dr. Keyworth, as the nation's highest scientific official, helped lead the federal hunt for ways to bring Reagan's dream to life. Candidate weapons included chemical lasers, particle beams and — Dr. Teller's favorite — the X-ray laser, powered by a hydrogen bomb. The idea was tested 10 times in underground detonations, with mixed results.

Dr. Keyworth became one of the most visible champions of the president's vision, giving it, for all its futuristic dimensions, a veneer of scientific credibility.

The goal, he told The Times in 1985, was to make each unit of defense much less expensive than a corresponding unit of offense, undermining the economic logic of nuclear buildups. "Missiles are

expensive," he said. "Pulses are cheap."

After leaving the White House, Dr. Keyworth was a board member at General Atomics and Hewlett-Packard, where he became the company's longest-serving director. He lived in Carmel, Calif.

He is survived by his wife, Marion (formerly Schwartz); a son, George; a daughter, Deirdre Hernandez; a sister, Linda Davis; a brother, Rick; and four grandchildren from his marriage to Polly Lauterbach Keyworth, who died in 2004. He is also survived by his stepchildren Doug Schwartz, Bryan Schwartz and Mike Schwartz, and 10 step-grandchildren.

In decades of private life, Dr. Keyworth concerned himself more with issues of business inno-

vation than with reflections on Dr. Teller, or on his Washington experiences, or on the global impact of Reagan's antimissile crusade.

"He believed that the president's determination to devalue the threat of nuclear weapons was an important factor in the unraveling of the Soviet Union," Mr. Abell, his longtime aide, wrote in a remembrance.

In contrast, liberal historians tend to say that internal weaknesses caused the Communist state to implode.

A tech enthusiast throughout his life, Dr. Keyworth occasionally displayed his old antimissile fervor long after it had fallen off the public agenda. He told an audience in 2000, "One can begin to think realistically of a defense that goes beyond nuclear weapons."