

Alvin William Trivelpiece

An outstanding leader, physicist, and administrator, Alvin William Trivelpiece died on 7 August 2022 in Rancho Santa Margarita, California.

Born on 15 March 1931 in Stockton, California, Al put himself through California Polytechnic State College and graduated in 1953 with a degree in electrical engineering. He earned a PhD in electrical engineering in 1958 from Caltech under the guidance of Roy Gould. His dissertation was titled "Space charge waves in cylindrical plasma columns."

After spending a year in the Netherlands as a Fulbright scholar, Al became a professor of electrical engineering at the University of California, Berkeley. In 1966 he became a professor of physics at the University of Maryland, College Park, where he supervised 19 doctoral candidates and published more than 40 papers on plasma physics. Al also wrote, with Nicholas Krall, *Principles of Plasma Physics*, which remains a classic textbook 50 years after publication.

Taking a leave of absence from the University of Maryland in 1973, Al served for two years with the Atomic Energy Commission as an assistant director for research in the division of controlled thermonuclear research. Among his achievements was the establishment of the national Controlled Thermonuclear Research Computer Center (CTRCC), which provided fusion researchers across the country with remote access to leading-edge computing resources. The idea was met with considerable skepticism, but it became a model used by other science agencies.

In 1976 Al became vice president for engineering and research at Maxwell Laboratories, and in 1978 he was appointed corporate vice president of Science Applications Inc. Three years later Al was nominated by President Ronald Reagan and confirmed by the Senate as director of the Department of Energy's Office of Energy Research (now the Office of Science), where he had responsibility for 5 research programs and 10 of DOE's laboratories. He also served as the energy secretary's science adviser.

As director, Al developed a plan for construction of five major scientific research facilities: the Advanced Light Source, the Advanced Photon Source, the Relativistic Heavy Ion Collider, the Con-

tinuous Electron Beam Accelerator Facility, and the Spallation Neutron Source (SNS). Those facilities continue to sustain US leadership in many fields of science today. Al's planning was informed by federal advisory committees that he established and the National Academy of Sciences, an approach that continues to serve DOE's Office of Science well.

Al and Charles DeLisi in 1986 initiated the Human Genome Project, which has had an enormous impact on the life sciences and medical research. Al was masterful in obtaining support for the project from DOE management, the Office of Management and Budget, and the US Congress. The National Institutes of Health joined the project two years later.

Al expanded the scope of the CTRCC to form the National Energy Research Scientific Computing Center, which continues to serve the research programs in the Office of Science as well as other DOE programs.

In 1987 Al became the executive officer of the American Association for the Advancement of Science and publisher of *Science*. Then in January 1989, he became director of Oak Ridge National Laboratory, where he was responsible for several initiatives. He created the Office of Laboratory Computing to enhance Oak Ridge's ability to meet complex scientific challenges. Al led the development of a successful proposal for the Center for Computational Sciences, which brought together computational-science teams, computer scientists, and the hardware vendor Intel. It was designated as one of two DOE high-performance computing research centers in 1993.

A second major achievement was the SNS. The lab had been designing a reactor-based neutron source. When the cost became unacceptable, Al took the lead in shifting to the accelerator-based SNS and gathered a multilab consortium to execute design and construction and broaden the project's base of support. The SNS returned the US to a world-leading position in neutron-scattering research.

Al was an advocate for international cooperation in science. His work behind the scenes with Evgeny Velikhov led to an agreement between the US and the Soviet Union on developing a magnetic-fusion demonstration model, which laid the groundwork for the ITER project.

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Al's outstanding achievements extend across research, education, science administration, and national security. He was an innovator in the positions he held. Many of his accomplishments resulted from his understanding of science and politics and his ability to guide projects through government processes.

Those of us who worked closely with Al have been fortunate to have had the opportunity. Al was a continuous source of ideas and wisdom. He had a great sense of humor and was quick to generate puns. He enjoyed playing poker, chess, and golf and was an avid runner. He piloted his own airplane to the age of 85. His wisdom, leadership, and friendship will be missed.

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