David D. Clark

February 10, 1924 — December 22, 1997

David Delano Clark, Professor of Nuclear Science and Engineering, died at age 73 on December 22, 1997, at the Ward Laboratory of Nuclear Engineering. The memorial plaque in the lobby succinctly records his remarkable career at Cornell.

IN MEMORY OF

DAVID DELANO CLARK

1924 – 1997

FOUNDER OF WARD LABORATORY

AND ITS FIRST DIRECTOR

1961 – 1996

CORNELL UNIVERSITY FACULTY MEMBER

COLLEGE OF ENGINEERING

1955 – 1997

CHAIRMAN OF NUCLEAR SCIENCE AND ENGINEERING

1977 – 1996

David was born in Austin, Texas. His undergraduate education at the University of Texas was interrupted by service in the U.S. Army Air Force in World War II. After the war, he enrolled at the University of California at Berkeley where he earned the B.S. degree in 1948 and the Ph.D. degree in 1953 under the supervision of Nobel Laureate, Owen Chamberlain. David was a post doctoral research associate at Brookhaven National Laboratory before joining the faculty of Cornell University in 1955.

David's most prominent contribution to Cornell is that he planned and oversaw the design and construction of the Ward Laboratory of Nuclear Engineering, and served as the laboratory director for 35 years. The Ward Laboratory houses the University's pulsing TRIGA Mark II nuclear research reactor. The formal program in Nuclear Science and Engineering at Cornell grew out of the Department of Engineering Physics in 1977, and David was its chairman for twenty years, 1977-96. The Ward Laboratory has contributed to the research of scores of faculty members and

students at Cornell since its completion, and thanks to David's leadership in the five years prior to his death, is playing a role in an increasingly broad range of research around the campus.

David was a Euratom fellow at Ispra, Italy in 1962; a Guggenheim fellow at the Niels Bohr Institute in Copenhagen in 1968-69; a Visiting Professor at the Technical University, Munich in 1976; a Visiting Scientist at Brookhaven National Laboratory in 1982; and a Guest Scientist at the Center for Analytic Chemistry of the National Institute of Standards and Technology, Maryland in 1990.

In 1996, David was elected a Fellow of the American Nuclear Society in recognition of

> *"the conception, design, and development of a succession of novel experimental facilities and instruments for the performance of unique research in nuclear science and engineering, including estimation of reactor physics parameters under isothermal conditions, determination of short-lived isomer decay schemes, measurement of delayed neutron energy spectra, and utilization of cold neutrons."*

He was also a member of the American Physical Society, Phi Beta Kappa, and Sigma Xi.

David was an outstanding teacher and helped develop graduate and undergraduate courses in nuclear science and in nuclear laboratory techniques. In 1964, he was a member of the College of Engineering committee that changed the five-year Bachelor of Engineering curricula to four-year Bachelor of Science curricula followed by fifth-year professional Master of Engineering degrees. Shortly before his death, David led the development of a multidisciplinary course, Art, Architecture, and Analysis, that was taken by a broad group of students from physics, classics, archeology, art, and engineering. The course showed scientists and non-scientists alike how nuclear techniques are applied. This course is a model of modern interdisciplinary science education.

In 1993, he led a successful petition by eleven universities to reverse the Nuclear Regulatory Commission decision to charge annual license fees ($62,000 per year) for educational non-power reactors. This led to his realization of the importance of Cornell's research reactor to the rest of the university, and to the establishment in 1996 of the Ward Center for Nuclear Sciences, which took over the Ward Laboratory from the College of Engineering. David saw this as the correct direction for service-oriented laboratories in large, diverse universities.

David's research was extremely broad. He developed a fast rabbit system synchronized with the TRIGA reactor pulse to study nuclear isomers with half-lives from 25-milliseconds to several seconds; he conceived and developed the inner-shell vacancies; he developed a cold neutron source to be used with a totally reflecting neutron guide for

doing prompt gamma-ray analysis; and he invented a portable cold neutron irradiator for doing prompt gamma-ray analysis without the use of a reactor.

Using the pulsing capability of the Cornell TRIGA reactor, David and his students discovered or studied a number of nuclear isomers. He discovered the 24.6-second ground sate of Ag-110, the 0.29-second isomer of Xe-134, and the 10.6-millisecond isomer of Sm-153. He measured properties of eleven other isomers: In-114m, In-116m, Xe-125m, Xe-127m, Ba-136m, Gd-155m, Dy-157m, Ta-182m, Ir-194m, Pa-235m, and U-236m.

In addition to all else, David was a great colleague. As director of Ward Laboratory and the Nuclear Science and Engineering Program, he listened to what others had to say about important issues. He also served as a quality control officer, reminding us what our responsibilities to students in nuclear science and engineering are. He always carried his teaching load even with his administrative duties. Finally, David tried to enable the rest of us in the program to accomplish our own research and teaching goals, no matter how different they were from his own. A commemorative plaque honoring this wonderful teacher, creative researcher, and great friend, is currently on display at the Ward Center for Nuclear Studies and will be moved to the Applied and Engineering Physics Lounge in Clark Hall.

David is survived by his wife of 48 years, Gladys Clark; two daughters; a son; and seven grandchildren.

David Hammer, Val Kostoun, Bing Cady