

Robert P. Merrill

November 17, 1934 — September 20, 1996

Robert Perkins Merrill, the Herbert Fisk Johnson Professor of Industrial Chemistry since January 1977, died quietly just two months before his 62nd birthday at his home in Ithaca, New York. Merrill was an active member of the Cornell Faculty for 19 years (1977-96). He was an outstanding academic colleague in chemical engineering and physical chemistry and a distinguished religious leader. He was deeply committed to excellence in his profession, in his religious commitments and in his family life.

The record of his experiences honors a great person and a man of many talents. He pioneered in the development of undergraduate and graduate instruction in both chemical engineering and applied surface science, was an outstanding mentor of graduate students, participated strongly in industrial consultation and made vital contributions to the scientific research literature.

Robert Merrill was also a product of his pioneer Mormon heritage. As a member of the Church of Jesus Christ of Latter-day Saints (Mormons), he served during his life as a teacher, High Priest, Bishop of the Ithaca Ward and President of the Owego Stake. He was a builder of his community, unswervingly devoted to emulating his Mormon beliefs in his daily living. It was said by a colleague that he lived life with an eternal perspective.

His concern for his family was a dominant part of his life. He loved them deeply and foremost but also respected every person he met, not esteeming one above another. He was a devoted husband, a caring father, a committed grandfather and, all-in-all, a caring human being to every individual with whom he came in contact.

Merrill was born November 17, 1934 in Salt Lake City, Utah of the late Olonzo David and Ruth Perkins Merrill. He attended public school there until they moved to Richland, Washington. His family subsequently moved to Wilmington, Delaware in 1946 where he attended the P.S. DuPont High School and worked summers at the DuPont Company, where his father was employed as a mechanical engineer. In 1953, Bob entered the mechanical engineering program at Cornell but soon transferred to the School of Chemical Engineering. He completed his B.ChE degree in Chemical Engineering at Cornell in 1960 and his Sc.D degree in Chemical Engineering at the Massachusetts Institute of Technology in 1964. As a new graduate student at MIT, Bob joined some like-minded fellow students to meet together each day over lunch to read and discuss holy scripture. In addition to his spiritual commitments, after completing his degree studying the surface chemistry and physics of gas-solid interactions,

he taught there. Subsequently, he moved on to the University of California at Berkeley, where he served as vice-chairman of the Department of Chemical Engineering from 1974-77.

He was brought back to Cornell in 1977 through the insight of Professor Emeritus of Chemical Engineering, Julian C. Smith, to strengthen the research base of the Chemical Engineering Department. In this, he succeeded admirably, playing important roles in recruiting sixteen new faculty members in the department and serving as a trusted and impartial advisor to departmental chairs. One of whom commented, "Right away I could count on him to provide insight into complex issues free of biases from any personal stakes". Another colleague stated that, "Chemical Engineering is today quite a different department than it would have been if he had not been there. He never pushed his own agenda". A third colleague observed that, "Merrill would never receive the recognition he deserved, because he was never selfish".

He taught graduate courses in fundamental chemical kinetics, undergraduate courses with an emphasis on reactor design and the unit operations laboratory, and he coordinated the capstone design course in chemical engineering for many years. His industrial experience was a great asset in the last-named effort. He was an outstanding mentor of graduate students. Many of his Ph.D. students have gone on to spectacularly successful careers in academia and industry.

He had a great zest for scientific inquiry and incubation of new ideas. He liked to think about new concepts and to impart his own enthusiasm to the students under his supervision. He stood for quality and integrity in many ways both intellectual and spiritual. Even when slowed down by failing health in latter years, he never compromised his standards of quality and integrity in his scientific and personal relationships. He was particularly effective in bridging professional gaps not only in the field of chemical engineering but in interdisciplinary interactions with colleagues in physics, chemistry, applied physics and engineering, with whom he had substantial scientific collaborations and cooperations.

At Cornell, he pursued a broad program of research centered on studies of the structure and chemistry of solid surfaces and the interactions of surfaces with gas molecules. A unique aspect of this research was the use of atomic and molecular beam scattering techniques to probe the structure and reactivity of atoms at surfaces and to study gas-solid collision dynamics. He also pioneered in the use of synchrotron radiation beams to study oxidation of metals, properties of oxides and heterogeneous catalytic processes on surfaces as well as the unique properties of aluminas and related materials. He realized that understanding these interactions and materials had important

practical implications in such processes as catalysis, corrosion, corrosion inhibition and the aerodynamics of flight in rarefied atmospheres.

As an academician and an engineer, Bob loved not only to pursue new knowledge but to apply it with useful impact on human life. In addition to conducting his university-based research and serving as co-director of the Cornell-Sandia synchrotron radiation beamline facility at the Brookhaven National Laboratories, Merrill was active as an industrial consultant. This was in keeping with his commitment in relating fundamental understanding to practical application, admirably fulfilling his responsibility as holder of the Johnson Chair of Industrial Chemistry. Companies he worked with included Universal Oil Products, Gulf General Atomics, Stauffer Chemical, Lockheed Missile and Space Corporation, Abcor Corporation, Raytheon Corporation, and Mobil Research and Development Laboratories.

The Herbert Fisk Johnson Professorship of Industrial Chemistry was established by Mr. Johnson, a petroleum industrialist, and head of one of the nation's largest privately owned companies at the time. The Johnson Chair was previously held by Fred H. Rhodes and by Charles C. Winding, both former directors of the School of Chemical Engineering.

Bishop of the Ithaca Ward of the Church of Jesus Christ of Latter-day Saints, Robert Merrill had a strong spiritual side to his life. He lived his life with an eternal perspective and believed that living is finite and temporary, a trial period whose duration is insignificant when compared to the eternal existence extending infinitely both into the past and on to the future. As he became a leader in the knowledge profession of the university, his teachings gained eminence through reinforcement from his personal qualities and spiritual integrity. The following from, "Ode on Intimations of Immortality" by William Wordsworth, epitomizes the spirit underlying Bob's life:

Our birth is but a sleep and a forgetting;
The soul that rises with us, our life's star
hath had elsewhere its setting
And cometh from afar;
Not in entire forgetfulness,
But, trailing clouds of glory do we come
From God, who is our home.
The homely nurse doth all she can
To make her foster-child, her inmate, man,
Forget the glories he hath known,
And that imperial palace whence he came.

Robert Merrill is survived by his wife, Jeanne Cluff Merrill; his sister, LuAnn Merrill Sorensen; his five children, Ellen Merrill Fluckiger, Laurie Merrill Grimsman, Lydelle Merrill Rumsey, David Keith Merrill and Paul Robert Merrill; and eleven grandchildren, Vanessa, Gordon, Breanna and Eleesa Fluckiger, David, Brian and Leisel Grimsman, Gregory and Christopher Rumsey and Isabeau and Hannah Merrill.

Joseph Ballantyne, Paul Houston, William Olbricht, Thor Rhodin