ROBERT CLARK REID

1924–2006

Elected in 1980

“For contributions to methods of computing physical properties and the understanding of boiling heat transfer between immiscible liquids.

BY P. L. THIBAUT BRIAN

ROBERT CLARK REID, who died on May 18, 2006, in Winchester, Massachusetts, was Professor Emeritus of Chemical Engineering at Massachusetts Institute of Technology (MIT), where he spent his entire professional career. Bob was renowned in the chemical engineering community for his contributions to methods of teaching thermodynamics, estimating physical properties, and a variety of complex physical-chemical phenomena, including the phase behavior of supercritical fluids and boiling heat transfer at the interface between two immiscible liquids. An inspirational teacher and a warm and generous mentor, Bob was beloved by generations of students who studied under him during his many years at MIT.

Bob Reid was born in Denver, Colorado, on June 11, 1924. He was active in scouting, attaining the rank of Eagle Scout. After graduating from East High School in Denver in 1942, he enrolled in the Colorado School of Mines, but he left in December 1942 to enlist in the U.S. Army Air Corps. In May 1943, he was diagnosed with rheumatic fever, and the Air Corps gave him a medical discharge. He then entered the U.S. Merchant Marine Academy at Kings Point, Long Island, New York, and graduated in 1945. He served in the Merchant Service and was licensed as third assistant engineering officer in January 1946. At that time, he was also commissioned an ensign in the U.S. Naval Reserve, in which he served until his discharge in February 1952.
Bob returned to the Colorado School of Mines in 1946 and majored in petroleum engineering. In 1948 he transferred to Purdue University to study chemical engineering and was awarded a B.S. in 1949 and an M.S. in 1950. The Merchant Marine Academy also awarded him a B.S. in 1950. In 1951, he enrolled as a graduate student at MIT, where he received a Doctor of Science degree in chemical engineering in 1954.

When he joined the MIT faculty as assistant professor of chemical engineering, he was appointed director of the Oak Ridge Engineering Practice School at Oak Ridge, Tennessee. In 1956, he returned to the main MIT campus in Cambridge and was named overall director of the School of Chemical Engineering Practice, a post he held until 1963. Under his leadership, the Practice School was rejuvenated, as several of the old industrial stations were closed down and more modern ones were added. Bob was promoted to associate professor in 1958 and full professor in 1965. He was named Chevron Professor in 1981 and professor emeritus in 1985.

Professor Reid’s professional interests included a variety of areas in chemical engineering. In 1958, he co-authored the legendary reference book Properties of Gases and Liquids with Tom Sherwood (McGraw-Hill Book Company). Over the next 40 years, three more editions were published with revised texts, and John Prausnitz, Bruce Poling, and John O’Connell were added as co-authors. In 1974, Bob and Michael Modell co-authored Thermodynamics and Its Applications; for 23 years, this was the textbook for the basic course taken by all MIT graduate students in chemical engineering. The 1997 revision by Jeff Tester is still the textbook for that course. Bob authored two more books, Modeling Crystal Growth Rate from Solution (Prentice Hall, Engelwood 1973), with Makoto Ohara, and Creativity and Challenges in Chemical Engineering (Board of Regents of the University of Wisconsin System, 1982).

Professor Reid supervised the research of 35 doctoral students and published about 150 papers describing important contributions to a variety of new fields, including boiling heat transfer at the interface between immiscible liquids, heat transfer with frost formation on cold surfaces, heat transfer to
chemically reacting gases, kinetics of oxidation reactions, crystal
growth, estimation of physical properties, extraction with
supercritical fluids, liquid natural gas and liquefied petroleum
gas safety, and many others.

Professor Reid was a consultant for Arthur D. Little Inc.,
Nestlé S.A., Cabot Corporation, E.I. du Pont de Nemours & Co.,
and Technology and Management Systems, Inc. Many of his
research interests were based on his consulting experiences,
and he brought this industry perspective into his research
laboratory and his classroom. As a teacher, he was interested
in each of his students and devoted to their development, both
professionally and personally.

Bob Reid gave generously of his time and talent to his
profession. He served on advisory committees at Princeton
University, Brookhaven National Laboratory, the National
Science Foundation, National Bureau of Standards, and National
Academy of Sciences. He was a member of the Editorial Board
of the Journal of Chemical Engineering Data and Industrial and
Engineering Chemistry Fundamentals. He was a visiting professor
at the University of California, Berkeley, in 1978 and the
University of Wisconsin in 1980–1981. He served as a director
of the American Institute of Chemical Engineers (AIChE), was
a member of the Publications Committee, and was vice chairman
of the Awards Committee of AIChE. As editor of AIChE Journal
from 1970 to 1976, he reinforced its reputation as the leading
scientific publication on chemical engineering.

Many honors were bestowed upon Professor Reid during
his illustrious career. He was a Research Fellow in physics at
Harvard in 1964–1965. He received the Distinguished Alumnus
Award from Purdue University in 1972. He was a distinguished
lecturer at du Pont, Newark College of Engineering, University
of Delaware; University of Texas; University of Wisconsin; and
Oklahoma State University. In 1977, he held the Chemical
Engineering Lectureship of the American Society for Engineering
Education. AIChE honored him with the Institute Lectureship
in 1967, the Warren K. Lewis Award for Chemical Engineering
Education in 1976, and the Founders Award in 1986. He was
elected to the National Academy of Engineering in 1980.
In 1950, Bob Reid married Anna Marie Murphy, known to her family and friends as Nancy. The couple settled in Lexington, Massachusetts, where Nancy still lives. They had two children, a son, Donald M. Reid, and a daughter, A. Christine Reid. Donald and his wife Holly live in Chapel Hill, North Carolina, where Donald is a professor at the University of North Carolina. Christine and her husband, Donald C. Weber, live in Arlington, Virginia, where Christine works in the science office of the Arlington county school system. Bob and Nancy Reid were also blessed with four grandchildren, Otis R. Reid, Hadley W. Reid, Sarah R. Weber, and Rebecca N. Weber.

Bob enjoyed hiking, woodworking, and drawing, first still lifes and later portraits. He also liked to bake bread and cakes. In his later years, he became interested in botany and took on the task of identifying unnamed trees in Mount Auburn Cemetery, Cambridge, Massachusetts, and on the MIT campus. He was also a Lexington Conservation Land Steward and a member of the Chemical Advisory Team for the Lexington Fire Department.

Bob Reid will be long remembered and sorely missed by his many friends and colleagues and by scores of students who benefited from his wisdom and guidance.