

Charles Calvert Winding

August 12, 1908 — March 17, 1986

Charles C. (Chuck) Winding died on March 17, 1986, after a lifetime of dedicated teaching and service to Cornell. With Fred H. (“Dusty”) Rhodes he was a founder of the School of Chemical Engineering, and over a fifty-year period he saw it prosper, grow, and change. For thirteen of those years he was the director of the school, leading it successfully through some very difficult times.

Chuck was born in Minneapolis and received his B.S. and Ph.D. degrees from the University of Minnesota. In 1935 Dusty Rhodes asked him to join, with the rank of instructor, in the development of chemical engineering at Cornell. Chuck accepted and moved to Ithaca, where he spent the rest of his life. In 1936 he married Katharine (Kay) Cudworth, who survives him; he had met her at the University of Minnesota. In 1938 he was appointed assistant professor of chemical engineering. He became an associate professor in 1941, a professor in 1948, and the Herbert Fisk Johnson Professor of Industrial Chemistry in 1957. That year he also became the director of the School of Chemical Engineering, a position he held until 1970.

Professionally Chuck’s first love was teaching. Always friendly and helpful to students, he nonetheless demanded hard work, correct answers, and an appreciation of the breadth and diversity of chemical engineering practice. His weekly quizzes, graded 0 or 10, created near panic among fifth-year students in the 1940s. “An engineering answer has to be right,” he said. “A bridge that’s *almost* long enough isn’t worth anything.” He taught courses in chemical process design and organized several more in the developing field of polymer technology. Shortly before he retired, he restructured and modernized the undergraduate process design course and continued teaching it, on a part-time basis, for three years after he became a professor emeritus.

He was a strong proponent of the five-year bachelor’s degree program in engineering, believing that four years was not sufficient to give students adequate preparation for professional practice. But when the college abandoned the five-year program in 1965, he adapted well to the situation and saw to it that the strength and vitality of the chemical engineering program was not lost in the new curriculum. He had previously developed a professional engineering program in chemical engineering at the master’s level, which in large measure replaced the fifth year of the old program.

Chuck carried a heavy teaching load, especially early in his career, when he and Dusty Rhodes taught most of the courses in chemical engineering. In 1940-42, while Rhodes was occupied with the construction of Olin Hall,

Chuck taught nearly all the courses by himself while still contributing to the plans for the new building. During the war years his load increased still further, for under the accelerated schedule there were three terms each year and all courses were given each term. There were no vacations. When asked about that he merely said dryly, "I was glad when it was over."

As a researcher, he was meticulous and thorough, skilled in asking the right questions and in devising experimental techniques to answer them. He never spared himself time or effort in his research work and was equally demanding of his graduate students. His fundamental studies of heat transfer featured truly innovative techniques, and in polymer studies, starting with his Ph.D. thesis on cellulose acetate, he was one of the pioneers. During World War II his group studied non-Newtonian flow and degradation of rubber latexes and solutions. The course he offered in synthetic plastics, beginning in 1943, was one of the first courses on polymers given in a chemical engineering school. For years he wrote the annual review of polymerization for *Industrial and Engineering Chemistry*. He also wrote two books on polymer technology—one with Leonard Hasche of Tennessee Eastman (1947), the other with Gordon Hiatt of Eastman Kodak (1961). His biographical profile was included recently in "Polymer Pioneers" in *Polymer News*.

In 1957 he became the director of the school, following Dusty Rhodes's colorful career. He was more conservative than his predecessor but maintained Rhodes's policies of concern for the professional development of his students. He did not favor the growing emphasis on research in the engineering college, despite his own prowess in research, since he believed it would inevitably reduce the attention paid to undergraduate education. Chuck led the school through the turbulent 1960s. He battled successfully against the forces that would have significantly reduced the amount of chemistry in the chemical engineering curriculum, modified and shortened the bachelor's program from five to four years, and held everything together during the student disruptions of 1968-70. During that difficult period he established several new and much-needed options in the chemical engineering curriculum.

For almost twenty years he wrote the *Olin Hall News*, a newsletter to the alumni. He knew virtually all of the graduates personally and kept in close touch with many of them through the newsletter and at annual meetings of various technical societies. He was a fellow of the American Institute of Chemical Engineers and a distinguished member of the Society of Plastics Engineers. In 1983 he was named Educator of the Year by that society, and a few days before he died he received a certificate celebrating fifty years of membership in the American Chemical Society.

During World War II Chuck was a consultant to the Office of the Rubber Reserve. Later he consulted with Rome Cable and a number of other companies. For many years he was a director of the Cowles Company of Skaneateles. He was an avid sailor, competing with great success in meets and regattas on Seneca and Cayuga lakes. His sailboat, a Thistle, was appropriately named *Poly-Mer*. He was a past commodore of the Ithaca Yacht Club, a longtime member of the Seneca Yacht Club, and for many years secretary-treasurer of the Central New York Yacht Racing Association.

Chuck was a dedicated, sincere, conscientious, and caring gentleman with a host of friends. In 1973 a dinner organized by chemical engineering alumni was held in Philadelphia to recognize his many contributions to the School of Chemical Engineering and to the education and welfare of his students. Announced at that dinner was the establishment of the Charles C. Winding Scholarship Fund, made possible by contributions from alumni and friends. Over the years additional gifts have swelled this fund considerably. It will continue to keep his memory alive as it supports graduate students in the program he liked best of all—the professional master’s degree program in chemical engineering.

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