ELMER L. GADEN JR.

1923–2012

Elected in 1974

“For contributions to fermentation technology and leadership in the field of bioengineering.”

BY ARTHUR HUMPHREY

ELMER L. GADEN JR., Wills Johnson Professor Emeritus of the University of Virginia, widely regarded as the “father of biochemical engineering,” died on March 10, 2012, in Charlottesville, Virginia. He is survived by Jennifer, his wife of 48 years, a daughter, two sons, and their families.

Elmer was born and raised in Brooklyn, New York. He attended Columbia University where he earned his BS, MS, and PhD in chemical engineering. As an undergraduate at Columbia, he was enrolled in the V-12 program and, as a result, served from 1944 to 1946 in the US Navy as a radar officer with the Pacific Fleet during World War II. After the war he returned to Columbia University for graduate studies. His PhD work was a seminal piece of research that enabled the initial large-scale manufacture of antibiotics. For this and other bioengineering-related contributions, Professor Gaden was awarded in 2009 the Fritz J. and Delores H. Russ Prize and Gold Medal, considered the Nobel Prize of Bioengineering.

After graduating, Elmer engaged in research and development on microbial processes for the manufacture of antibiotics and fine chemicals at Pfizer Inc. In the fall of 1949 he returned to the Columbia University faculty to establish in the Chemical Engineering Department the first North American academic program in biochemical engineering. During his association

In the fall of 1974 Elmer went to the University of Vermont, where he served as dean of the College of Engineering, Mathematics, and Business Administration. Then, in 1979, he was appointed the Wills Johnson Professor in the Chemical Engineering Department at the University of Virginia, from which he retired in 1994.

While at Columbia University and the University of Vermont, Elmer held joint appointments in their history departments and taught courses in military and Civil War history, a lifelong interest. He also wrote short publications for historical journals on the “Iron Boats of the Civil War” and conducted Civil War battlefield tours for students and friends. Virginia was an inspiring environment for these tours.

Dr. Gaden’s primary technical focus was biotechnology, especially bioprocesses. He was the founding editor of the international research journal *Biotechnology and Bioprocesses* and served as its editor for more than 25 years. After his election in 1974 to the National Academy of Engineering, he served as a member or chair of a number of NAE and National Research Council committees.

In 1986 he received Columbia University’s Egleston Medal for distinguished engineering achievements and in 1987 was awarded an honorary doctor of engineering degree by the Rensselaer Polytechnic Institute. In 1988 he received the AIChE Founders Award, and in 1970 was the first recipient of AIChE’s Food, Pharmaceutical, and Bioengineering Award. Among his many other honors are the Chemical Engineering (Union Carbide) Lectureship Award (ASEE), the Harold C. Urey Phi Lambda Upsilon Award (Columbia University), and the ACS David Perlman Memorial Lectureship and Marvin J. Johnson Award in Microbial and Biochemical Technology, Division of Biochemical Technology. He was also proud to receive the Great Teachers Award from Columbia University (given by the Society of Columbia Graduates) and the Mac Wade Award from the University of Virginia (from the students of the School of Engineering and Applied Science).
Both awards recognized his exceptional capacity as a teacher and were based on nominations from the student body.

Elmer shared a deep concern for the environment with his wife. In particular, they loved birding. He spent countless hours observing the birds and other wildlife from the deck of their home, which is surrounded by woods, in the Charlottesville countryside. In his later years this interest in the environment spilled over into his research as he focused on the creation of alcohol-based fuels and foods by biotechnology (fermentation) processes.