



## *IN MEMORIAM*

Robert E. Feeney  
Professor of Food Science and Technology, Emeritus  
UC Davis  
1913 – 2006

Robert E. Feeney, world-renowned professor and protein chemist, was born on August 30, 1913 in Oak Park, IL and died on September 21, 2006 at the age of 94 at his Davis home. On graduation from high school, he enrolled at Northwestern University in 1932, where he survived as a student in the midst of the Great Depression by delivering milk and later working as a waiter at several sorority houses—employment that he remembered with great fondness. He excelled academically, receiving his bachelor's degree in chemistry from Northwestern University in 1938. He then went to the University of Wisconsin where he obtained a master's degree and then a Ph.D. in biochemistry in 1942. He also attended Harvard Medical School as a research associate, before enlisting, in the early days of World War II, in the medical department of the U.S. Army where he served as Captain of the Wound Research Team in the Southwest Pacific.

At war's end he joined the Western Regional Research Laboratory of the U.S. Department of Agriculture in Albany, California. In 1953, he was invited to join the University of Nebraska at Lincoln where he was a professor of chemistry and chairman of the Department of Biochemistry and Nutrition. In 1954 he married Mary Alice Waller from Nebraska.

Bob and Mary Alice moved to Davis in 1960 where he was appointed professor in the Department of Food Science and Technology. His excellent research on proteins won him national program funding for his entire academic career from the National Institutes of Health and the National Science Foundation. On one of his field trips to the Antarctic to collect penguin eggs, he noticed the survival of small fishes in the sub-zero

Antarctic Ocean. This seminal observation led to the discovery that the ability of these fishes to survive is due to the presence of unique proteins, which he called antifreeze proteins. Subsequently, many years of research were devoted to the mechanisms by which antifreeze proteins suppress and modify ice-crystal growth. This work received worldwide attention and led to unsuspected applications in food and agriculture, for example, the physics of ice formation on airplane wings, and in clinical medicine.

He conducted five more field trips to the Antarctic, collecting many species of fish that exhibit this sub-zero survival characteristic. This work also led him to explore the Arctic Ocean from Norway to Japan. His longtime laboratory assistant, David Osuga, was his constant right-hand man.

“He was very proud of his six research trips to Antarctica,” said his devoted wife Mary Alice. Those trips not only resulted in his successful research career, but he wrote two enlightening books depicting life on the sea ice and continent: “Professor on Ice” and “Polar Journeys: The Role of Food and Nutrition in Early Exploration.”

The insightful observations and subsequent research on antifreeze proteins continued long after his retirement in 1984. In collaboration with his associates, Professors John Crowe, William Fink, and Yin Yeh, more than 60 papers were published post-1984. These three colleagues sponsored an “International Symposium on Stress Proteins: From Antifreeze to Heat Shock” in 2003, honoring Professor Feeney, the founder of this field, on the occasion of his 90th birthday. Nearly 100 internationally renowned experts attended this event.

Another longtime colleague, Professor John Whitaker, referred to Professor Feeney as “one of the last great protein chemists” in another special ceremony at UC Davis in 2002. This CIFAR-sponsored symposium honored Professor Feeney for his scientific accomplishments and brought together many of his former graduate students from across the country and around the world. Dr. Sharon Shoemaker, director of the CIFAR program at UC Davis, was deeply impressed by the scientific breath and depth of his former students and by how pleased they were to collectively celebrate the special educational experiences they had under his mentorship.

During his UC Davis tenure, he also was a visiting professor at universities in Japan, Canada, Germany, England, Norway, and Switzerland.

“He was a great reader. He read everything, and he loved art and music, as well as, the outdoors,” said his wife. “He was a devoted family man and a wonderful father.”

Survivors, in addition to his wife, include two daughters, Elizabeth Lindemann of Davis, and Jane Baker of Carmichael, and a son-in-law, Steve Baker. Grandchildren include Sean Lindemann, Michelle Baker, and Lauren Baker.

Sharon Shoemaker  
John Whitaker  
John Crowe  
Yin Yeh

