Fred H. Kulhawy, Professor Emeritus of Civil and Environmental Engineering, died in Ithaca on May 12, 2015. He was born in Topeka, Kansas on Sept. 8, 1943. He received both his B.S.C.E. and M.S.C.E in 1964 and 1966, respectively, from Newark College of Engineering (NCE, now part of New Jersey Institute of Technology), where he was a part-time instructor and researcher. In September 1966, Fred and his wife, Gloria, began their graduate studies at the University of California, Berkeley, where he specialized in geotechnical engineering, geology and geomechanics. He finished his doctorate in September 1969. His dissertation on Oroville Dam in California was one of the early applications of the finite element method in nonlinear, geotechnical construction problems. After completing his doctorate, Fred joined Syracuse University as an assistant professor of civil engineering where he was promoted to associate professor in 1973.

In 1976 Fred joined the faculty of the School of Civil and Environmental Engineering at Cornell as an associate professor. In 1980 he joined Cornell’s graduate faculty in geological sciences. By 1981, he had become a full professor. In 2009, Fred retired from Cornell University as Professor Emeritus. Fred was a registered Professional Engineer in New York, New Jersey, and Pennsylvania, and as both Civil and Geotechnical Engineer in California.

During his 40-year academic career, Fred taught a wide range of courses in geotechnical engineering, including basic to advanced soil mechanics, engineering geology, basic to advanced foundation engineering, retaining structures and slopes, rock mechanics and engineering, embankment dam engineering, tunnel engineering, case studies and reliability-based foundation design. His courses emphasized engineering fundamentals and the development of basic and advanced analytical skills, and always focused on design and professional practice. At Cornell, Fred supervised the annual Master of Engineering geotechnical design project 17 times. He also supervised 21 Ph.D. and 33 M.S. and M.S.C.E theses.
Fred was an internationally acclaimed educator, consultant, and researcher widely recognized for his contributions to foundation engineering, development of reliability-based geotechnical design, mechanics of soil-structure interaction, and evaluation of soil/rock behavior. In recognition of his contributions, an American Society of Civil Engineers (ASCE) Geo-Institute Geotechnical Special Publication 229 was prepared in his honor. This 2013 tribute is titled “Foundation Engineering in the Face of Uncertainty.” Notable reliability papers, authored by Fred and republished in the proceedings, include the Sixth Casagrande Memorial Lecture “From Casagrande’s ‘Calculated Risk’ to Reliability-Based Design in Foundation Engineering” and the 5th Peter Lumb Lecture “Uncertainty, Reliability, and Foundation Engineering.” He had a profound impact on reliability-based design in foundation engineering, among other areas, and was honored by the ASCE Geo-Institute as the 2014 GeoHero during its annual congress in Atlanta, Georgia.

Fred was a prolific researcher, who received support from various government agencies and private companies. His research on transmission line structure foundations sponsored by the Electric Power Research Institute is now recognized as classic work, which was fundamentally important in developing the Institute of Electrical and Electronics Engineers standard for transmission structure foundation design and testing. He authored/co-authored more than 380 publications and made 1440 presentations in 102 cities in 36 states and the District of Columbia, within the U.S., and in 70 additional cities in 26 other countries around the world. Fred also contributed extensively to professional societies and their activities through his participation on National Academies, ASCE, American Society of Testing and Materials, and International Society for Soil Mechanics and Geotechnical Engineering committees. Among his many awards, Fred was honored as Distinguished Member of ASCE, the highest accolade of ASCE for acknowledged eminence in engineering, and reception of the Norman Medal, the oldest and most prestigious technical award of ASCE, the Karl Terzaghi Award, the ASCE Geo-Institute career accolade for eminence in geotechnical engineering, and the Canadian Geotechnical Society G. Meyerhof Award for outstanding contributions to foundation engineering.

Fred’s expertise was sought on numerous engineering projects worldwide. After his retirement, Fred maintained an active consulting practice. He travelled extensively to give lectures, provide consulting services, and indulge one of his passions, opera. He is survived by his wife, a brother, brother-in-law and sister-in-law, nieces, a nephew and several cousins.

Philip Li-Fan Liu, chair; Thomas D. O’Rourke, Harry E. Stewart
With input from James L. Withiam and Kok-Kwong Phoon