Everett Donald Markwardt, Emeritus Professor of Agricultural Engineering at Cornell University, passed away December 11, 2021 at Schuyler Hospital in Montour Falls, New York at age 100. He was born September 5, 1921 in forever windswept Bisbee, North Dakota, the son of Albert and Annie Oakland Markwardt.

Affectionally known as Ev, he graduated from Bisbee High School, and attended North Dakota Agricultural College in Fargo where he received his B.S. degree in June 1943. Fortuitously, there he met Robert T. Lorenzen who would become a future colleague with him on the faculty of the Agricultural Engineering Department at Cornell University in 1959.

In 1943 – 1946, during World War II, Ev served as Group Armament Officer in the U.S. Army Air Corps as a Second Lieutenant, stationed at Edwards Air Force Base ("Army Air Base, Muroc Lake") in California where final combat training for bomber and fighter aircrews was made just before their overseas deployment. Upon discharge from the Air Corps, he farmed 960 acres in Bisbee for a short time with his father.
He was appointed a District Agricultural Engineer in the Agricultural Engineering Department at Cornell in 1946 which placed him in the field and eventually brought him into contact with Velma E. Nice whom he married on June 4, 1949 in Akron, New York. Their loving partnership lasted 72 years. He was appointed Instructor in Agricultural Engineering and entered the Graduate School at Cornell University in September 1949, received his M.S. degree in September 1951, and was appointed Assistant Professor in the Department of Agricultural Engineering in the College of Agriculture with primary responsibilities in irrigation systems and agricultural machinery. Ev was promoted to Associate Professor with tenure in July 1955, and to Professor in July 1961. He retired in December 1981 and was appointed Professor Emeritus.

Ev’s principal responsibilities lay in Extension and research, but he also participated in teaching special topics as an invited lecturer in the departments of Vegetable Crops and Pomology. With respect to Extension, in 1947 there were 12 District Agricultural Engineers supported by six Extension faculty based in Ithaca in the Department and Ev saw the need for a shift from direct service through farm visits to moving to a program with educational emphasis, including integrating the engineering into commodity-based programs of the counties. By 1956 it became evident that a staff of college-based specialists in specific discipline areas would better serve the Engineering Extension program and the county agent staff. Consequently, Department Head Orval C French (yes, the letter C was Orval’s middle name, with no period!) and Ev reorganized the department Extension staff into 12 specialized program areas and reassigned some of the District Engineers to Specialist positions. Markwardt was named Extension Project Leader, a position he held for over 27 years until his retirement in 1981, making him the longest serving project leader in the history of Cornell Cooperative Extension. He also recognized the need for regional cooperation and promoted the establishment of a Northeast Regional Agricultural Engineering Service (NRAES). This avoided duplication of effort, reduced costs, centralized the publication and distribution process, and provided a vehicle for increased regional
program cooperation. The NRAES headquarters was designated to be at Cornell University. Ev served as the first chairman of the Executive and Operating committees, and leadership was rotated among the states. NRAES became a major source of engineering educational materials for the member states, while requiring minimal staff and facilities to produce them. In 1998, the name was changed to the Natural Resource, Agriculture, and Engineering Service, and the acronym NRAES remained. NRAES is now known as Plant and Life Sciences Publishing (PALS). Eight universities are members of the cooperative effort -- a real tribute to Markwardt’s vision. He also originated the departmental publication *Agricultural Engineering* in 1956 to bring a variety of engineering-related information to as broad an audience as possible on a regular and timely basis.

In addition to his work on the design and management of efficient irrigation systems, Ev was the leading figure in the Department’s efforts to mechanize the harvesting of fruits and vegetables, eventually including apples, cherries, grapes, cabbage, and lettuce, beginning in 1959. He obtained funding from a variety of sources to develop techniques and mechanical equipment to harvest cherries utilizing a special collecting frame and determined the optimal frequency and stroke length for mechanical tree shakers for effective fruit removal; colleague Professor J. Robert Cooke later confirmed the frequency requirements mathematically. Within a few years, 95% of cherries were mechanically harvested. It took about four seconds to harvest the fruit mechanically, a great saving in time and labor.

Ev was also the leader of a team that designed and developed a mechanical harvester for processing apples. He raised funds from processors, growers, apple associations, and State and Federal sources, and developed tree shaking, fruit catching and collection techniques and design parameters that were adopted by commercial equipment manufacturers. In 1972, approximately 25% of apples harvested for processing was performed mechanically.

He was also involved in numerous studies and educational programs
to improve potato planter and harvester performance, vegetable seeders, tomato harvesters, grape brush choppers, pruning and brush removal in orchards, pesticide applicator performance for fruits, vegetables, potatoes, and field crops, as well as apple grading and packing equipment.

Ev authored scores of articles, bulletins, reports, and papers related to his Extension and research efforts. He was recognized nationally for his contributions to Extension by the American Society of Agricultural Engineers (ASAE, now ASABE - American Society of Agricultural and Biological Engineers) with four Blue Ribbon Awards. In 1980, he received a Special Citation from the New York State Association of County Agricultural Agents, and in 1981 received a Recognition Plaque from the Directors of Cooperative Extension. He was a member of ASAE, Epsilon Sigma Phi, Sigma Xi and Blue Key. He served on numerous subject matter committees across the College, as well as regional Extension committees, and College hiring reviews. Simply put, he was absolutely outstanding in his work.

Ev was an active member of St. Luke Lutheran Church, serving on the building committee during renovations, and on the church Council as Treasurer. He was a founding member of the Ithaca Swim Club and was the longtime head of the New York Southern Tier Swim Officials with certification for NCAA, High School, YMCA and AAU meets. He was also active with local Boy Scout Troops and the Cayuga Heights Fire Company, serving as a Captain.

It was always a great pleasure to be invited to a gathering at the Markwardt home. Ev and Velma were gracious hosts, great cooks and made guests welcome and at ease. Ev specialized in barbecuing, and who could resist Velma’s homemade rolls! They lived on the edge a golf course and one could but wonder why a window hadn’t been broken by an errant golf ball that entered their yard. Ev would proudly display his backyard year ‘round fishpond and tell about his recent attempts to keep deer from consuming the neatly manicured vegetation around the yard, including his dwarf Japanese Maple tree. The Markwardts made their guests feel like part of a family -- a real
treat and greatly appreciated. In his retirement, Ev also dabbled in homemade wine making in his basement and produced a tasty product with his own label.

A video about the legacy of Everett D. Markwardt, conducted by Norman R. Scott can be found on the ecommons website.

Everett is survived by his beloved wife, Velma Nice Markwardt; son, Douglas (Marcia) Markwardt; son, Kevin (Laura Cuomo) Markwardt; daughter, Carol (James) Wood; grandson, Dustin (Mindy) Markwardt; grandson, Kyle Markwardt; grandson, Jakob Markwardt; granddaughter, Kayla Markwardt and great grandson, Cedar Allen Markwardt. In addition to his parents, he is predeceased by his brother, Stan Markwardt and sister, Ruby Markwardt Bishop.

Written by Ronald B. Furry (chair), Norman R. Scott, and Howard A. Longhouse