IN MEMORIAM

An Tzu Yang
Professor of Mechanical and Aeronautical Engineering, Emeritus
Davis
1923 — 2003

An Tzu (Andy) Yang died on Friday, November 21, 2003 at the Woodland Memorial Hospital. Born in Shanghai, China, Andy came from an academic family. His father, the late Pei- Feng Yang, was professor of civil engineering and his sister, the late An- Jing Yang, was professor of material science, both at Jiao- Tong University in Shanghai. He is survived by his wife of fifty years, Ambassador Linda Tsao Yang, a former U.S. Executive Director to the Asian Development Bank in Manila, and two sons and daughters- in law: Yuelin T. and Trina Chin Yang of Singapore and Eton Y. and Jenny Wang Yang of Davis.

In 1942, Andy escaped from Japanese occupied Shanghai to Free China, making the more than thousand-mile journey on foot, by oxcart, mule, train, and whatever mode of transportation he could find. He enrolled at the Northwestern College of Engineering in Xi'an, China, where he received his B.Sc. in mechanical engineering in 1946. He came to the United States in early 1949 to study at the Ohio State University where his father had earned his graduate degree in 1918. Andy graduated with a master's degree in mechanical engineering from the university in 1950. Andy held several engineering positions in mechanical design, analysis, and research in industry between 1950 and 1964. In addition, during this time, he was named a visiting professor at the Institute of Mathematics at the University of Rio Grande do Sul in Porto Alegre, Brazil in 1959. He completed his doctor of engineering science degree at Columbia University in 1963 under the guidance of Professor Ferdinand Freudenstein.

Andy's dissertation was titled, "Application of Quaternion Algebra and Dual Numbers to the Analysis of Spatial Mechanisms." Within two years, his dissertation was adopted by Columbia, Yale, and MIT as a text for graduate courses in spatial kinematics and was considered a landmark contribution that opened up the use of the so- called screw theory for researchers in mechanism design, robotics, biomechanics and computational geometry. Forty years after its publication, the dissertation remains one of the highly cited works in kinematics.

Andy joined the young College of Engineering at UC Davis, in 1964 as an assistant professor and was a founding member of the Department of Mechanical Engineering when it was established in 1965. His analytical work was quickly recognized nationally and internationally. Within five years of arriving at UC Davis, he was a renowned researcher and considered a leading figure in the field of mechanisms, kinematics, and dynamics. He accelerated through the ranks, becoming a full professor in 1971. Andy retired in 1991.

Andy mentored many undergraduate and graduate students, post- docs, and young faculty members throughout his career and afterward. He was always available to assist a student in whatever way he could, whether the student was his or not and whether they needed academic or personal help. He also readily gave advice to young faculty members starting out in their own careers, whether here at UC Davis or at other institutions. His graduate students have gone on to academic, industrial, and government laboratory careers.

During Andy's tenure at UC Davis he served as a member of the Department of Mechanical Engineering's Graduate Study and Personnel Committee, a member of the College of Engineering's Graduate Study, Undergraduate Study, and Library Committees, and the campus' Physical Plant Advisory Committee. He held visiting positions at Columbia University, Stanford University, and Jiao- Tong University, Shanghai, China.

Andy also provided short courses here in the United States and in Asia throughout his career.

Andy served the American Society of Mechanical Engineers (ASME), the International Federation for the Theory of Machines and Mechanisms, and the National Science Foundation throughout his career as a technical editor, organizing technical conferences, and as a peer reviewer. He also served the State of California by being named to advisory subcommittees for two legislative committees: the Assembly Committee on Economic Development and New Technologies and the California Legislature's Joint Committee on Science and Technology. In addition, Andy was a consultant to the GM Research Center in Dearborn, Michigan for many years.

Andy received several awards, including a service award from the ASME's Applied Mechanics Review, ASME's Design Division Mechanisms Committee Award, Life Fellow status in ASME, and an election into the New York Academy of Science.

In 2002, at ASME's Design Technical Conference in Montreal, Canada, a special technical session was dedicated to his research. His former doctoral students, colleagues, and friends honored him at a pre-conference dinner for his 80th birthday. Both occasions brought him much joy and pleasure.

Andy was a humble, quiet man who loved to tell stories from his interesting, colorful life. Andy's legacy will live long in the technical field he help move forward, amongst his students, colleagues, and friends, and, especially, in the hearts of his devoted family.

James A. Schaaf, Chair
Warren Giedt
Allan McKillop
Melvin R. Ramey
Bahram Ravani