

# Myunghwan Kim

*February 8, 1932 — December 23, 1991*

Myunghwan Kim was born in Seoul, Korea on February 8, 1932. After completing his secondary education in Seoul, he served in the Republic of Korea Army from 1950 to 1954, and was honorably discharged with the rank of Lieutenant. Because of his excellent command of English, Kim (as he preferred to be called by his colleagues) had been assigned to the U.S. Army as an interpreter. During this tour of duty he became acquainted with an officer on leave from the faculty of the University of Alabama, who persuaded him to come to the United States as an exchange student after he was done with his army service. Kim received a B.S. degree in Electrical Engineering, with distinction, from the University of Alabama in 1958, and entered graduate study at Yale University, where he was a Danforth Fellow. He received the M.Eng. degree in Electrical Engineering in 1959, worked as an electrical engineer for the Tennessee Valley Authority (TVA) in Chattanooga, Tennessee for a year, and returned to Yale where he obtained the Ph.D. in 1962. In the same year Kim joined the faculty of the School of Electrical Engineering and was associated with Cornell for the remainder of his career.

Professor Kim began his career in the Electrical Engineering School in the field of control theory with concentration on applications to electromechanical systems. During his early years his teaching activities were confined to this area with principal attention given to the courses in Feedback Control Systems and in Random Processes in Control Systems. Soon after joining the Electrical Engineering Faculty he developed an interest in the electrical aspects of biological processes, the field that eventually became the basis for his major contributions to the School. Following a sabbatical leave at the California Institute of Technology where he was a Visiting Associate in biology and a Senior Postdoctoral Associate at the Jet Propulsion Laboratory in Pasadena, California, he began research on the application of control theory to biological systems. In 1970 he established a Bioelectric Systems Laboratory in the Electrical Engineering School that attracted several young faculty members and a number of graduate students. The research of that group concerned the application of instrumentation, control theory, computer engineering, and integrated circuit technology to biomedical problems, particularly in learning how information is coded and processed in the nervous system. Special instrumentation was developed to help decipher the behavior of complex interconnections of neurons, both in the peripheral and central nervous systems. Kim and his group also studied the feasibility of employing optimal control techniques in the problem of administering chemotherapy to treat cancer. Activity in this area centered on the development of a very large-scale integrated (VLSI) circuit chip that would be able to track the growth of many individual cells and to monitor the concentration of a particular drug

in their vicinity. During this period Kim taught undergraduate courses in Digital Systems and Theory of Linear Systems, and graduate-level courses in Bioelectric Systems and Bioinstrumentation. He also conducted frequent graduate seminars in Bioelectric Systems.

The presence of a bioelectronic laboratory in Phillips Hall created some unusual occurrences in the normal course of events in an electrical-engineering building. One day, for example, a large wooden crate marked FRAGILE-SEA WATER-HANDLE WITH CARE appeared on the loading dock. Eventually the crate was unpacked in Kim's lab. It contained a glass aquarium, indeed filled with sea water, that was to be the home of *Aplysia*, a sea snail popular with neurophysiologists because of the simple organization of its nervous system and the large size of many of its neurons. Kim delighted in showing his "pet" to visitors, and with characteristic enthusiasm would describe the bioelectric studies that his group could perform with the aid of the creature. In later years, when interest in biological studies declined in the School, Kim returned to control-system theory, but his research on the application of VLSI techniques to biological systems stimulated a strong interest in computer technology. In this period he taught course EE 230, Introduction to Digital Systems, served as a class advisor, and was a member of the EE Faculty Committee. During a leave of absence in 1984, he began an association with the Korean Advanced Institute of Science and Technology (KAIST) in Seoul as an Adjunct Professor of Electrical Engineering. He taught courses there in computer engineering and control theory and worked on VLSI system designs applied to advanced computers. On his return to Cornell, he taught again in the areas of control theory and in the electrical machine laboratory. Following his retirement he returned to KAIST and directed development of a Korean version of a supercomputer until his death in 1991.

At Cornell Professor Kim was also a member of the National Nanofabrication Facility (NNF), the Engineering and Theory Center, and the Applied Mathematics Center. He held a National Institute of Health Special Research Fellowship in 1970-71. He was a Senior Member of the Institute of Electrical and Electronic Engineers, a member of the New York Academy of Sciences, and a member of the Cell Kinetic Society. Kim had 52 formal publications and 33 conference papers, with the majority being in the bioelectronics and bioscience fields. His friends and colleagues at KAIST held a special memorial service in Seoul, and arranged to collect and publish his papers in a memorial volume.

While Kim was a student at the University of Alabama he attended an ecumenical conference at Ohio State University in Columbus, Ohio and met Young Sook Susan Hyun. They were married on Tennessee when he was with the TVA. He is survived by his wife who resides in Ithaca, New York; a son, Eugene of Ithaca, New York; a son

and daughter-in-law, Erwin and Tina of Rutherford, New Jersey; a son, Edward of Cortland, New York; a daughter, Julie of Ithaca, New York; a brother, Dr. Gene H. Kim of Searingtown, New York; and two sisters, Mrs. Pauline Kim of Riverside, California, and Mrs. June Kim Yeum of Landsdale, Pennsylvania.

Professor Kim will be long remembered as a caring teacher and adviser, a dedicated researcher, and a respected colleague and friend.

*James S. Thorp, H.C. Torng, Simpson Linke*