

Caltech Scientist to Join UA Engineering Faculty

October 15, 2009

Caltech scientist Wolfgang Fink will become the first Edward and Maria Keonjian Distinguished Professor in the College of Engineering.

Edward Keonjian, the "father of microelectronics," would have been 100 years old on Aug. 14, 2009.

To mark his centennial, the University of Arizona [College of Engineering](#) has announced the establishment of the Edward and Maria Keonjian Distinguished Professorship in Microelectronics, the result of a million-dollar endowment by Keonjian and his wife Maria. The first person named to the new post is Wolfgang Fink, who will move to UA from the California Institute of Technology.

Fink is a senior researcher at NASA's Jet Propulsion Laboratory and the founder and director of the Visual and Autonomous Exploration Systems Research Laboratory at Caltech where he is a visiting associate in physics in the division of physics, mathematics and astronomy. He also holds concurrent appointments as visiting research associate professor of ophthalmology and neurological surgery at the University of Southern California.

Fink's interest in human-machine interfaces, autonomous/reasoning systems and evolutionary optimization has focused his research programs on biomimetic, or implantable, systems, biomedical sensor development, autonomous robotics, cognitive/reasoning system, artificial vision, computer-optimized design and autonomous space exploration.

Fink graduated summa cum laude in 1997 with a doctoral degree in theoretical physics from the Institute for Theoretical Physics at the Eberhard-Karls-University in Tübingen, Germany. He graduated with a bachelor's and a master's degrees in physics from the Georg-August-University in Göttingen, Germany.

He is a member of the German Physical Society, the Association for Research in Vision and Ophthalmology, and the American Association for the Advancement of Science.

Fink also is a pilot, aerial photographer and classical concert pianist.

"I am very enthusiastic about joining the University of Arizona with its multitude of research, collaborative and educational opportunities to pursue and expand my various research interests," Fink said. "Moreover, I am extremely honored to be the first recipient of the Edward and Maria Keonjian Distinguished Professorship."



Maria Keonjian and Wolfgang Fink

He began his appointment at the UA on Oct. 5, and joined the faculty of the [department of electrical and computer engineering](#), where he intends to relocate and further expand his Visual and Autonomous Exploration Systems Research Laboratory to conduct research in the areas of human-machine interfaces, autonomous/reasoning systems and evolutionary optimization. He also is on the faculty of the [department of biomedical engineering](#).

Edward Keonjian

The namesake of Fink's professorship, Edward Keonjian, led a far more remarkable life. What makes Keonjian's story so compelling is that he was able to survive some of the worst horrors of World War II in Europe to become one of the acknowledged leaders in microelectronics.



Bust of Edward Keonjian in the UA Electrical and Computer Engineering Building.

In all, Keonjian wrote more than 100 published articles and held 27 U.S. and foreign patents. He edited and co-authored "Microelectronics: Theory, Design, and Fabrication," which was published in 1963 and sold more than a million copies and was translated into six languages.

His inventions include a 1954 solar-powered, pocket-sized radio transmitter, the world's first, which is now at the Smithsonian National Museum of American History.

Keonjian was born in 1909 in a part of Russia that is today the republic of Georgia and graduated with a doctorate in electrical engineering from Russia's Leningrad Institute of Electrical Engineering in 1932.

During the siege of Leningrad, now St. Petersburg, Keonjian was teaching at the institute. As millions of Russians were dying from cold and starvation, he too collapsed from hunger and was mistaken for dead and placed in a common grave. He was rescued when a passerby noticed a slight movement in his hand, left exposed at the grave site.

Keonjian recovered and was evacuated from Leningrad only to be captured by the Germans and sent to a slave labor camp. His duties at the camp included dismantling aircraft for spare parts. He was liberated at the end of the war and emigrated to the United States with his first wife, Virginia, who died in 1969.

Arriving in 1947 with no friends, relatives or money and unable to speak English, Keonjian pumped gas, worked in a furniture store and learned English. He later rose to become an outstanding scientist and inventor in microelectronics.

Keonjian began his work in microelectronics at General Electric in 1951, and later at Grumman Aircraft where he supervised a staff of 165. In 1963 he organized the first international symposium on low-power electronics.

Keonjian collaborated with NASA astronaut Neil Armstrong as chief of failure analysis on the Apollo 11 project. He spent several years in India and Egypt as an electronics specialist for the United Nations, and another 12 years as a U.S. member of NATO's Advisory Group for Aerospace Research and Development.

Among his honors was being named a fellow of the Institute of Electrical and Electronics Engineers, winner of the Distinguished Colleague Award from the Aerospace Industries Association and member of the New York Academy of Science.

Keonjian was an enthusiastic traveler and a member of the Explorers Club, the Circumnavigators Club and the Archaeological Institute of America. He moved to Green Valley, Ariz., in 1993 from Great Neck, N.Y., and in 1997 chronicled his life story in an autobiography, "Survived to Tell."

Edward Keonjian died in 1999. A life-sized bronze bust of Keonjian currently sits in the Electrical and Computer Engineering Building on the UA campus.