



Name in English: Arthur Fong
Name in Chinese: 邝达璇 [邝達璇]
Name in Pinyin: Kuang Da xuan
Gender: Male
Birth Year: 1920-2012
Birth Place: Sacramento, California
Philanthropy: Yes

Profession(s): Research Scientist

Education: Bachelor of Science, Electrical Engineering, University of California, Berkeley, 1943; Master of Science, Electrical Engineering & Computer Science, Stanford University, 1968

Awards: 1964, Senior Staff Engineer, Hewlett Packard; 1985, Life Fellow Award, Institute of Electrical & Electronic Engineers; 1995, Distinguished Engineering Alumnus Award, University of California, Berkeley; Member, Tau Beta Pi Association; Member, Eta Kappa Nu Honor Society, Institute of Electrical and Electronics Engineers; Member, Sigma Xi; The Scientific Research Society

Contribution (s): Born in Sacramento, California, Arthur Fong was expected to follow in the footsteps of his father, a grocery store owner. It was his fascination with handmade toy sailboats that launched his scientific career. "I remember playing in the rainwater. But they kept tipping over. I kept wondering why." After consulting library books and learning about a keel, Fong put a nail in the ship's bottom so that it sailed without falling over.

He had no expectations of a college education, but a high school teacher applied on his behalf to the University of California, Los Angeles, then just a junior college. He earned his associate degree in 1937, but was unable to continue his education because of the cost. From then until 1939, he worked for the Los Angeles Power and Light Company doing some work in their test labs and converting local electrical systems from 50 Hertz to 60 Hertz standard. From that job he earned enough money to go to UC Berkeley, where he earned his bachelor's degree in electrical engineering in 1943 during World War II. He began working in the secret Massachusetts Institute of Technology Radiation Laboratory soon after graduating and getting married. Primarily, he worked on the development of microwave testing equipment used for creating radars and other electronic equipment vital for the war effort. He also moonlighted at Browning Laboratories, where he developed the first AM/FM radio tuner/receiver which was released soon after the war ended in 1945.

In 1946, William "Bill" Hewlett, the celebrated co-founder of Hewlett Packard, who'd heard of Fong's work on radar technology through Hewlett's work with the Army Signal Corps, personally invited Fong to work for his new company. Fong wanted to return to

California so badly that he never even asked how much he would be paid. Things were so informal at HP at the time that it was only three days before payday that HP's finance manager asked him how much he was supposed to be paid. According to the HP company archivist in 2012, Arthur Fong was the 19th engineer hired in a company which had only about 100 people then.

His work at HP focused primarily on electronic tests and measurements, leading to the development of signal generators and the calibrated microwave spectrum analyzer. The signal generator, a device that generates electrical signals within certain frequencies, is an important tool for designing, testing, and repairing technological devices. Many radio broadcasting services are made possible because of these signal generators. Although radios may seem archaic in today's technologically advanced world, Fong's inventions are still alive as signal generators used to test cellular communications, video broadcasting, and satellite communications equipment. Perhaps the most influential of his contributions, the calibrated microwave spectrum analyzer was one of the first of its kind. This clever invention analyzed different components in the electrical wave and was used in the development of televisions, radars, and radio communications. Indirectly, Fong was able to influence entirely new outlets of communications and new technology.

By the early 1960's, Art Fong's product designs represented 27% of HP's sales, roughly \$55 million in annual revenue. In 1964, he and two other HP engineers were honored with the title of Senior Staff Engineer. Specially created by a resolution of the HP Board of Directors, the honor was established in the words of President Bill Hewlett to give "clear and unequivocal recognition to those who have chosen to stay in the technical field rather than the management field."

Fong was sent by Hewlett Packard to become Research and Development Manager of Hewlett Packard Japan in 1970 where he was instrumental in introducing new standards of engineering and management to the Japanese, ironically helping lead to Japan overtaking Silicon Valley in the production of silicon chips. He was also among the first group of HP engineers sent by the company to visit the People's Republic of China in 1979 to give lectures on engineering and to bring the Chinese up to speed on technology. He also worked for the National Security Agency in setting standards to improve digital data security.

Art Fong retired in 1986 but remained an HP consultant until 1996. By 1996, three entire divisions of HP with combined annual sales of \$300 million were devoted to products developed from his body of work. Despite his final retirement though he was often found visiting and interacting with people at HP ranging from beginning engineers to the company presidents up until his death when he passed away peacefully after an illness on May 17th, 2012.

Philanthropy: Philanthropy is a characteristic that defined Arthur Fong. Mr. Fong received financial assistance during his own senior year at UC Berkeley so he and his wife established the Fong Family Scholarships. The Fong Award is given to engineering students just completing their junior year who have demonstrated both high scholastic

achievement and financial need. This scholarship has donated more than one million dollars. However, their philanthropy did not end there. The couple established fellowships at both U.C. Berkeley and Stanford Universities and donated to the Palo Alto Medical Foundation, Stanford Hospital, and the Lucille Packard Children's Hospital.

Publications/Patents: Arthur Fong held nine patents and authored over fifty technical articles

External Links:

HP's Biography: <http://www.hp.com/retiree/pdf/Artfong.pdf>

Palo Alto Weekly Contributions Article:

http://www.paloaltoonline.com/weekly/morgue/2005/2005_05_18.afong18.shtml

Palo Alto Weekly Death Article:

http://www.paloaltoonline.com/news/show_story.php?id=25600

http://www.hpmemory.org/timeline/art_fong/life_and_times_02.htm

<http://www.hpl.hp.com/hpjournal/pdfs/IssuePDFs/1965-01.pdf>