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THOMAS HANS NEWTON (MAY 9, 1925–JUNE 6, 2010)

Thomas Hans Newton, MD, passed away peacefully, surrounded by his family, on June 6, 2010. Hans was born May 9, 1925, in Berlin, Germany. His father was an ear, nose, and throat surgeon, and his mother ran a family business. The family escaped Nazi Germany before World War II, first to Palestine, and then to the United States, initially settling in Portland, Oregon. Hans entered grade school at the age of 11, speaking very little English. Like many immigrants, he excelled through hard work and was accepted at the University of California, Berkeley. His undergraduate years at Cal were interrupted by military service in the Navy, where he served in the Pacific Theater as a radiology technologist. Hans graduated with a bachelor of arts in 1949 and then attended the University of California, San Francisco (UCSF) School of Medicine, where he received his MD in 1952. He interned at the University of Wisconsin, spent a year as a resident in medicine at UCSF, and then entered a residency in radiology at the Peter Bent Brigham Hospital under Dr. Merrill Sosman. As was common at the time, Hans spent 1 and a half years as a fellow in Stockholm, Zurich, and London, where he trained in neuroradiology at the National Hospital for Nervous Diseases, Queen Square. It was in Stockholm that he learned the new Seldinger technique for endovascular access and then, with a series of innovative guidewires, perfected endovascular access to the cerebral arteries, which, up to that time, was achieved by using direct puncture. In 1959, he returned to UCSF, where he remained on the faculty for 50 distinguished years.

Dr. Newton's academic accomplishments and awards are myriad. He founded the section of neuroradiology at UCSF and trained more than 160 fellows during a span of 40 years. He published more than 200 peer-reviewed articles, and the multivolume text *Radiology of the Skull and Brain* (Mosby, 1977), co-edited by Hans and Gordon Potts and otherwise known as "Newton and Potts", was the "Red Bible" of neuroradiology for decades. With the advent of CT and MR imaging, he continued his contributions with *Modern Neuroradiology* (Mosby, 2003), a 4-volume series still considered a standard. He was 1 of the 14 founding members of the American Society of Neuroradiology (ASNR), was its president in 1973–1974, and received the first Gold Medal of the ASNR. He was an honorary member of the European Society of Neuroradiology, a president of the Western Neuroradiological Society, and served on the editorial boards of many of the leading journals in radiology.

Among his many accomplishments was the first report of therapeutic embolization of a spinal arteriovenous malformation¹ and the introduction of CT and MR imaging at UCSF. His contributions include seminal articles on "Arteriography of Cerebrovascular Occlusive Disease" in the *New England Journal of Medicine* (1964),² descriptions of arteriovenous malformations and fistulas of the posterior fossa (1968),³ and a classic article entitled "Involvement of the Dural Arteries in Intracranial Arteriovenous Malformations" published with Dr. Sten Cronqvist in 1969.⁴ He was a superb angiographer with a quick and critical diagnostic eye and constant drive to improve angiographic image quality and technique.



At a meeting with the eminent Queen Square neuroradiologist, James Bull, Hans was asked what he might think if it were possible to visualize the ventricles without pneumoencephalography. Dr. Bull led him to a modest laboratory where the new EMI CT scanner was located and showed him the first CT images of the brain. When Hans returned to UCSF, he quickly assembled the chairs of neuro-

logy, Dr. Robert Fishman, and neurosurgery, Dr. Charles Wilson, to meet with the UCSF hospital director. A contract was promptly inked, and in 1974, UCSF installed the third CT head scanner in the United States for the considerable cost at that time of \$550,000. It was able to produce 2 sectional images of the brain every 5 and a half minutes! His commitment to new ideas and innovative technology, combined with a never-ending energy and tireless work ethic, brought him worldwide recognition. As Dr. Newton's reputation grew, UCSF became a much-sought-after center of learning in academic neuroradiology for trainees around the globe. All who had the privilege of working with Hans adored him.

His love of travel and fascination with diverse cultures led him and his life-long companion, Pat Newton, to the far reaches of the globe. He hiked through the mountains of Nepal, reaching the Everest Base Camp, boated through the Amazon rainforest, climbed Mt. Kenya, biked around Bora Bora, and enjoyed hiking throughout the United States and Europe. Hans was competitive by nature and delighted in showing the younger members of the section who was really in shape! He organized an annual 10K race around the base of Mt. Tamalpais in Marin County, which he routinely won. Racing and travel stories were enjoyed by all at the frequent barbecues by the pool at the Newton home in Kentfield. He and Pat were most proud of their daughters, Judy Newton, an attorney in Ashland, Oregon, and Diane Newton, a neuroradiologist in Boise, Idaho, as well as their 5 grandchildren and 1 great-grandchild, all of whom Hans adored.

Hans Newton leaves a lasting legacy in the science and practice of neuroradiology, both at UCSF and throughout the world. His many friends and colleagues worldwide will miss him but will take comfort in knowing that his contributions endure through the many trainees whom he inspired and the patients he helped throughout his career.

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