

## Hal Anger -- invented 'gamma camera' used for medical diagnosis

*The people who have worked with radiation and radioactive materials usually live to a ripe old age - 85 here*

November 12, 2005

Hal O. Anger, a renowned pioneer of nuclear medicine who is credited with developing the "gamma camera," died Oct. 31 at his home in Berkeley at age 85.

In the 1950s, Mr. Anger invented the device that employs gamma radiation to depict metabolic processes within a living body.

Mr. Anger is called "a quiet genius" on the Web site for a leading professional organization, the Society of Nuclear Medicine in Reston, Va. The organization noted that Mr. Anger's "instruments are still in common use today, diagnosing cancer, metabolic disorders and heart disease."

Regarding the gamma camera, "this remarkable device is able to follow the motion of radioactive materials within its field of view," wrote Dr. Robert Henkin on the organization's site ([www.nucmednet.com](http://www.nucmednet.com)). "With the development of the gamma camera came the ability, in live time, to image the blood flow in a patient, watch the kidneys function, evaluate the blood flow of the brain and heart, examine the liver as it generates bile ..."

Born in 1920 in Denver, Mr. Anger grew up in Long Beach. Friends noted that his family was involved with one of the first radio stations in Southern California, and this stimulated in him an interest in electronics. That led to building and testing cutting-edge technologies with his own hands. At junior college, he used parts from the physics laboratory to build an early television receiver. He later attended UC Berkeley and graduated in 1943 with a degree in electrical engineering. During World War II, he worked on ways to jam enemy radar.

Returning to Cal in 1946, Mr. Anger worked at the Ernest O. Lawrence Radiation Laboratory. There, he joined researchers who were investigating medical applications of radiation from the 184-inch cyclotron. Later, he developed his gamma camera, which he demonstrated in 1958 at a meeting of the Society of Nuclear Medicine.

Mr. Anger's work has been the subject of historical articles and reminiscences, such as "The Early Years with Hal Anger" by his former research colleague Alex Gottschalk -- himself a noted pioneer of medical imaging -- in a 1996 issue of *Seminars in Nuclear Medicine*.

"In the course of your day," Gottschalk advised his fellow radiologists, "when you interpret or count a radioimmunoassay or a sample of blood or body fluid, you will probably use a variant of (one type of device) invented by Hal O. Anger in the early 1950s. If you obtain or read a patient image, it probably came from some type of his gamma camera."

Besides holding 15 patents, Mr. Anger won many awards, including an honorary doctorate from Ohio State University, the Centennial Year Medal of the Institute for Electrical and Electronics Engineers, and, in 1988, the Société Française de Biophysique Medal.

In 1994, the Society of Nuclear Medicine gave him its \$25,000 Cassen Prize, which is awarded to "a living scientist whose work has made a major advance in nuclear medicine science."