



Vincent Z. Peterson

June 18, 1921 – May 17, 2007

Vincent Z. Peterson died peacefully in Berkeley, California on May 17, 2007, at the age of 85. He is survived by his daughter, Karen Peterson, her husband, Gerry Sauer, and their son, Christopher Sauer; his daughter, Andrea Peterson, her husband, Michael Rubin, and their children, Peter, Eric and Emily Rubin; his daughter, Ingrid Peterson, her husband, Doug Seelig, and their son, Gabriel Seelig; and his son, Galen Peterson. Vincent's wife, Elisabeth Karlsson Peterson, died in 2002.

Vince was born and raised in Galesburg, Illinois, and then went to Pomona College, majoring in physics. During World War II he was in the U.S. Navy, assigned to special projects in anti-submarine detection. He then attended U.C. Berkeley, where he received his PhD in physics with W.K.H. Panofsky as thesis advisor. Vince wrote that "Cal Berkeley was a great experience for me, especially living at the International House, where I met and married Elisabeth (Tess) Peterson. During these years (1946-50), Cal's physics profs were unusual – half of them eventually earning Nobel prizes."

After earning his PhD, Vince spent 42 years as a professor of high energy physics, first at Cal Tech and later at the University of Hawaii, where he headed the high energy physics group until his retirement in 1992. He and his family moved to Hawaii in 1963, soon after Hawaii had become a state. Boeing 707 jetliners had just gone into service between California and Hawaii, making the Aloha State far out in the Pacific Ocean more accessible and a major stopover point for travelers to and from Asia and Australia.

The State of Hawaii decided that its university, at that time a single campus in Manoa Valley, should become a major research institution, and Vince was brought in to set up a program in high energy physics. He was able to get a sizable grant from the Atomic Energy Commission and brought in Bob Cence and Vic Stenger in 1963 to form the core experimental group. Mike Peters joined them in 1966. He developed a close collaboration with the Moyer-Helmholtz group at the Lawrence Radiation Laboratory in Berkeley, with whom the new group immediately went to work on a spark chamber experiment at the Bevatron studying the production of η mesons.

Simultaneously, the group began assembling the apparatus needed to do bubble chamber data analysis in Hawaii, and Vince hired a master machinist, Dick Hansen, to build film scanning and measuring projectors (SMPs) based on the Berkeley design. These required being connected online to a computer, and the only computer on campus at the time (and possibly the only one in Hawaii) was an IBM 7040. Vince brought in a recent PhD graduate from Berkeley, John Munson, to spend the summer of 1964 in Hawaii writing an "executive program" that would enable the SMPs to timeshare the 7040 with other campus users during evening hours. This was accomplished a generation before the first timesharing systems were developed by the computer industry.

While Vince's training came before the age of computers, he understood that they would be an essential element in high energy research and made sure that the Hawaii group always had the most up-to-date computer systems.

Vince also had a great feeling for what was important in the field and assured that the Hawaii group always was involved in forefront experiments. Of course they could not do this alone, so he developed close collaborations with Berkeley, Fermilab, and several large university groups. Vince made sure Hawaii always lived up to its commitments in these collaborations.

Among other important physics experiments, Hawaii was involved in studying CP violation in $K^0 \rightarrow 2\pi^0$ at the Bevatron, transition radiation at SLAC, charmed particle production, neutral weak currents, and quantum chromodynamics with neutrinos at Fermilab.

Detector development was one of Vince's continuing interests and he maintained close ties with colleagues at high energy labs. In particular, he encouraged and supported the work of Hawaii group member Sherwood Parker at Berkeley and at SLAC. This included development of wire chambers for the external muon identifier, silicon microstrip detectors, and pixel detectors.

Vince did not neglect the theoretical side of high energy physics and arranged for Peter Dobson and San Fu Tuan to come to Hawaii in 1965 and start a theoretical group, which over the years, with the addition of Sandip Pakvasa, Ernest Ma, Xerxes Tata, and others, has a list of accomplishments in its own right. The theoretical and experimental groups worked more closely together than they do in most universities.

Starting in 1965, Vince and San Fu organized a series of highly successful Topical Conferences that took place for two weeks every other summer until 1985. At one memorable conference in 1973, Don Perkins of Oxford announced the discovery of weak neutral currents at CERN, to the great excitement of the other attendees, including Richard Feynman. Vince was part of the international committee that organized conferences on neutrino physics and was conference director for the Neutrino 81 meeting on Maui.

Vince was very active in university affairs, diplomatically chairing the faculty senate during the campus turmoil created by the Vietnam war. He also was active in AAUP and was a co-founder in 1974 of the faculty union, which was one of the first in the country. Vince made a special effort to work within the unique, diverse culture that is Hawaii and its university, becoming close friends with long-time university president Fujio Matsuda and belonging to several local organizations.

In the 1980s, the experimental group split into accelerator and non-accelerator physics, and the Hawaii DUMAND Center was formed with Vince as Director, Vic Stenger as Associate Director, and John Learned as technical director. The purpose was to build a deep undersea muon and neutrino detector off the coast of the Big Island of Hawaii. While the project was eventually cancelled, Hawaii pioneered the field of very high energy neutrino astrophysics that is still under active development today, with experiments going ahead in the Mediterranean and Antarctica.

With Vince's encouragement, Learned and other group members played major roles in the IMB proton decay experiment in Cleveland and the Super-Kamiokande experiment in Japan. The 1998 paper announcing the first evidence that neutrinos had mass included Learned, Stenger, and other group members as co-authors.

Today, under the leadership of Stephen Olsen, the Hawaii high energy group continues to thrive and now numbers 13 faculty and 13 postdocs plus graduate students.

Vince and Tess always treated the members of the group as family, holding many Sunday barbeques at their Kailua house a block from the beach. Tess was unfazed as small children tracked up her house with sand.

Vince and Tess spent sabbatical years in Rome, Oxford, and Geneva, and kept in touch with friends around the world, many of whom visited them in Hawaii.

Vince led a long and fulfilling life and will be remembered and missed by his family and friends. A memorial service will be held later in Hawaii, when Vince's ashes will be scattered at Lanikai. Donations in Vincent Peterson's memory may be made to the International House, 2299 Piedmont Ave., Berkeley, CA 94720.

