

Herbert P. Broida

1920-1978



Herbert Broida was a scientist of remarkable breadth and accomplishments, a teacher with an extraordinary devotion to students, and a human being of the finest quality. He was the recipient of many honors and of the highest professional praise, yet he remained a humble man, totally sacrificing of his time, talents, and energy for the good of his colleagues, his students, the physics community, and the University.

Born on Christmas Day, 1920 in Aurora, Colorado, at age five he was stricken with poliomyelitis, with the prognosis that he would never walk again. It was then that he started to show the dedication and willpower he would be known for later. After long, discouraging months, he won this battle and went on a few years later to become an eagle scout. The need to strengthen weak muscles led him to hiking, and eventually he was to climb more than twenty of

the Colorado peaks over 14,000 feet. A class leader, he graduated from high school with a record of outstanding academic achievement. Unfortunately, his early career at the University of Colorado was interrupted by a second long period of illness. This time surgery was required for a scoliosis that had developed as a result of the poliomyelitis. While lying on his stomach immobilized for many months because of infection, he developed convictions about what mattered to him in his life, the value of time, and the notion of utilizing his energies towards selected meaningful goals. Returning to the University of Colorado, he shifted from economics to sociology to philosophy. As a senior, he was exposed to physics for the first time. He quickly realized that he had found what mattered to him.

After graduating from the University of Colorado summa cum laude, Herb started graduate work in physics at Harvard University. World War II intervened. Unable to enter the services because of his medical history, he responded to the request that he teach science to military students at Wesleyan University in Connecticut. At the end of the war, Professor Otto Oldenberg of Harvard invited him to be his student, and Herb happily returned to Cambridge. He obtained his Ph.D. in 1949.

His early work in physics was done at the National Bureau of Standards (NBS), where he would remain until 1963. His work in molecular spectroscopy distinguished him among his colleagues, and in 1952 he was awarded a Simon Guggenheim Fellowship, with which he spent a year at Imperial College, London. In 1956 he received the Arthur S. Flemming Award from the Junior Chamber of Commerce in Washington, D.C., and from 1957 to 1963 he was a research associate at Georgetown University School of Medicine. In 1956 he was named section chief and program coordinator at NBS, and in 1959 he was awarded a Senior National Science Foundation Fellowship to visit Cambridge University.

Herb left his mark at the Bureau, where he instituted a program for the spectroscopic study of free radicals by trapping them in rare gas matrices at very low temperatures.

In 1963 he joined the newly created Department of Physics at Santa Barbara. A colleague who had earlier informed the faculty of the department about Herb's interest in an academic career said then that if Herbert Broida came to Santa Barbara, the physics department would never be the same. Those words could not have been more accurately prophetic.

Without fanfare, his personality, drive, broad scientific knowledge, and ability took over. He devoted himself to the growth of the department. He created a molecular physics laboratory renowned throughout the world for research in combustion-energy exchange, chemiluminescent reactions, laser-induced photoluminescence, and excitation spectroscopy. He was one of the first to realize and use the potentiality of lasers for the study of molecules. He put together apparatus to do complicated measurements in a way that delighted most experts. More recently, he became interested in the formation of submicron-size particles, and at the time of his death, he had begun a program aimed at the elucidation of surface properties and their interaction with excited molecules and atoms.

Herb Broida was a man of action as well as a scholar. He liked to see things done and knew how to get them done. In his fourteen years at UCSB he influenced nearly every aspect of the physics

department's growth. His interest in undergraduate students was clearly shown during his two years at the College of Creative Studies. Many of them were encouraged to work in his labs and later went on to graduate careers in physics. His colleagues in physics are especially grateful for his efforts in planning the present physics building. As with everything he did, Herb took this job to heart and worked unflaggingly to ensure that the building would contain the best features to further both teaching and research.

He conceived the idea of the Quantum Institute and converted it into reality, serving as its Director from 1973 to his death. Those who worked with him on the planning stages remember well his excitement at the prospect of setting up a spectroscopic research institute in the general fields of atomic, molecular, and chemical physics. In his last days, he was preparing a proposal for establishing the Quantum Institute as a regional facility for advanced laser spectroscopy.

In 1975 he was instrumental in initiating the successful campus wide lecture series *Los Alamos* on the occasion of the twenty-fifth anniversary of that laboratory. This series brought to campus many distinguished speakers, including the Director of Los Alamos, Norris Bradbury, and Nobel laureates Richard Feynman and Edwin McMillan.

In recognition for his many scientific achievements, his excellence in teaching, his devotion to the students and to the improvement of education in the Santa Barbara campus, he was named the 1976 Faculty Research Lecturer by the Academic Senate.

He was past chairman of the Division of Chemical Physics of the American Physical Society, and at the time of his death he was vice chairman and chairman-elect of the Division of Electron and Atomic Physics. He was recently appointed to membership on the Advisory Committee to the National Academy of Sciences on the USSR and Eastern Europe.

During his productive scientific life, he published more than 200 scientific papers, and he was a member of a number of scientific societies, including the American Association of Physicists in Medicine; American Chemical Society; American Physical Society; Federation of American Scientists; Washington Academy of Sciences; chairman, International Committee on Free Radicals Symposia, 1968-74; member, City of Santa Barbara Environmental Quality Board, 1970-72; and member, Frederic Ives Medal Committee, Optical Society of America, 1977. He was a consultant to a number of governmental agencies and private industries and in 1963 and 1970 was a lecturer with the Agency for International Development program in India.

Herbert Broida died in a hiking accident near Santa Barbara on Sunday, April 9, 1978. He had spent the entire previous day with his students and coworkers in supervising the physics department activities during University Day. At 5:00 p.m. he took his students to a local pizza parlor and told them that the following day he was going to celebrate the success of those activities by doing what he liked most to do: hike in the mountains on a clear spring day. The physics department and the Santa Barbara campus will never be the same.

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