ratories to develop instruments to pursue similar studies. He also collaborated in building the first medical linear accelerator for the treatment of cancer at the Stanford Medical School. Together with Gerard K. O'Neill, Bernard Gittleman and Burton Richter, he helped carry out the first colliding-beam experiment in the early 1960s. That experiment set new limits on the validity of quantum electrodynamics at small distances. He was a member of the Project "M" committee that initially launched SLAC, and he was a promoter of the racetrack microtron concept for accelerating electrons. At MIT he continued his studies of nuclear structure by electron and photon scattering and electroproduction.

Carl was a kind and gentle person who encouraged an active laboratory social life. He knew that a good working atmosphere and high morale were at least as important in achieving laboratory goals as directives handed down from above. Carl was also a good tennis player and a good chess player.

Colleagues from laboratories around the world, including Europe, South America and Japan, have been warm and strong in showing their appreciation for Carl's advice and active personal help. It was characteristic of Carl's modest and unassuming temperament that many of his colleagues, and even his family, were not fully aware of his efforts on behalf of others. Carl will be remembered with great respect and affection by his students, friends and colleagues.

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Edwin A. Yunker

Edwin A. Yunker, professor emeritus of physics at Oregon State University, died on 21 July 1990 at the age of 88.

Yunker was born in 1901 in Gresham, Oregon. He studied at Oregon Agricultural College (now Oregon State) in 1919 and at the University of California, Berkeley, earning his AB in physics from the latter in 1924. He served as an instructor in physics at Oregon State from 1925 to 1933 and as an assistant professor there from 1933 to 1939. From 1937 to 1940 he completed his PhD at Stanford University under the supervision of Norris Bradbury. In his research with Bradbury he used a cloud chamber to study various effects on the distribution of atmospheric condensation nuclei.

In the summer of 1941 Yunker was sent by the government to study microwave physics at MIT, after which he returned to Oregon State to establish courses on that subject. From 1942 to 1946 he headed the transmitter division of the Radio Research Laboratory at Harvard University, where he developed countermeasures against enemy radar. He also collaborated in writing several books on the work of the laboratory.

On returning to Oregon State in 1946, Yunker taught radio and electronics courses and also directed a group researching millimeter waves. As chairman of the physics department from 1949 to 1966, he presided over a period of great expansion: Many new areas of research were opened, and the program in meteorology grew into a separate department of atmospheric sciences. Yunker also coordinated the construction of a cyclotron, which was completed under his direction in 1957.

After his retirement in 1968 he maintained an active interest in physics and in the physics department at Oregon State. In 1982 he and his wife, Gertrude, endowed an annual departmental lecture series for visiting speakers.

A prolific writer, Yunker prepared reminiscences for his children and grandchildren. These short pieces overflow with his love of the outdoors and for hunting, fishing, boating and camping in the San Juan Islands. His recollections of his early life on the family farm also give a unique insight into life in rural Oregon in the early 1900s.

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Arnold Rosenblum

Arnold Rosenblum died unexpectedly at the age of 47 the night of 1 January 1991 at his home in Logan, Utah. He was an associate professor of physics and the director of the International Institute of Theoretical Physics at Utah State University in Logan.

Born in Brooklyn, New York, on 24 June 1943, Arnold graduated from Columbia College with a BA in physics in 1964 and received his MS from the University of Pennsylvania the following year. He continued graduate studies at Temple University, working with Peter Havas, and earned his PhD in physics in 1970.

After holding a one-year postdoctoral fellowship at the University of British Columbia, Arnold was a research associate at Temple University for one term. Simultaneously he started what became a long-term collaboration with Jeffrey M. Cohen at the University of Pennsylvania on problems in relativistic astrophysics. He continued this work in Germany, where he was a research associate at the University of Bonn from 1972 to 1974 and then at the Max Planck Institute for Physics and Astrophysics in Munich until 1978.

In 1978 he returned to the US, where he held visiting positions at Temple University and the University of Pennsylvania. He was codirector of a NATO summer school on supergravity in 1983 and of a NATO advanced workshop on gravity and supergravity in 1986. He accepted a position as associate professor of physics at Utah State University in 1985, where, together with V. Gordon Lind, he established the International Institute of Theoretical Physics there.

Arnold's thesis work on special relativistic equations of motion led him to a number of investigations of general relativistic equations of motion as well as of the special relativistic equations of motion of singularities of classical Yang–Mills–Higgs field. He also carried out studies in relativistic astrophysics, and he considered possible observational tests of the general theory of relativity as well as the problem of clock synchronization in that theory. His interest in relativity and in elementary-particle physics then led him into studies of supergravity and supersymmetry and of problems of interacting classical and quantum systems—studies that were cut short by his untimely death.

Arnold's intellectual curiosity and his love of people led him into lengthy discussion with an ever widening circle of friends in many fields. He had a remarkable ability to recognize the important aspects of talks at scientific meetings and the connections between one scientist's work and that of another working on an entirely different problem. He frequently acted as a cross-fertilizer or as a catalyst in several fields and stimulated many collaborations. At the various meetings he organized, he always provided an atmosphere that was both informal and stimulating and enlivened it with his own brand of humor.

Arnold's energy and enthusiasm for physics were an inspiration to many,