

Helmut W. Baer

Helmut W. Baer died on 7 October 1991 after a yearlong battle with cancer. He was 52.

Helmut's tragic death prematurely ended his distinguished career in nuclear physics. Born in the Hunan province of China to German missionary parents, he moved to the US at the age of 10. After earning his bachelor's degree in 1961 from Franklin and Marshall College in Pennsylvania, Helmut entered the graduate program in physics at the University of Michigan. For his thesis work at Michigan, Baer explored nuclear level structures using a bent-crystal beta-gamma-ray spectrometer.

In 1969 Helmut moved to a postdoctoral position at the University of Colorado, where he wrote a definitive experimental paper on two-nucleon transfer reactions. During a second postdoctoral fellowship, at the University of California, Berkeley, he collaborated on a series of radiative pion-capture experiments. Helmut's knowledge of nuclear structure allowed the group at Berkeley to explore the nuclear spin-isospin response, even in such exotic targets as ^{14}C . As an assistant professor at Case Western Reserve University from 1974 to 1978, Helmut organized watershed courses for honors students that have been offered ever since.

In 1978 Helmut joined the staff of the Los Alamos Meson Physics Facility, where he continued work on a high-resolution π^0 spectrometer, a notable instrumental achievement. He used pion charge-exchange reactions to measure isobaric-analog state transitions across the periodic table, resulting in the characterization of the isovector part of the pion-nucleus optical potential. He explored the isotensor interaction systematically in ^{14}C , finding both single and double pion charge exchange. In the late 1980s Helmut turned towards a high-energy nuclear physics experiment to investigate the antiquark and gluon structure functions in nuclei, work that provided information on the origins of nuclear effects in high-energy hadronic interactions discovered by the European muon collaboration. He also participated in the design of the HERMES detector, whose purpose was further exploration of the spin structure of the nucleon.

Helmut took particular pride in a series of lectures on pion physics he gave at the Changsha Institute of Technology, which brought him full circle to the country of his birth. He continuously promoted scientific exchange and friendship between Chinese and American physicists. His

curiosity had a long reach, both within physics and in whatever else attracted his characteristic zeal. Those who were touched by his singular enthusiasm for physics will long remember him.

MARTIN COOPER

Los Alamos National Laboratory

Los Alamos, New Mexico

HOMER NEAL

University of Michigan, Ann Arbor

PETER TRUOEL

University of Zurich, Switzerland

Edward N. Strait

Edward Nathan Strait died of a heart attack on 12 November 1991, at the age of 72. He was a research professor at Macalester College, having retired from a full-time faculty position two years earlier.

Strait graduated from the University of Wisconsin, Madison, with a bachelor's degree in physics in 1941 and immediately entered the doctoral program at MIT. He helped build a 2-MV electron accelerator and performed electron scattering experiments with Robert Van de Graaff, William Buechner and Herman Feshbach. In 1943, having applied for conscientious objector status, Strait helped build a Van de Graaff accelerator for cancer research at MIT and then spent two years in Civilian Public Service camps.

Strait returned to MIT in 1946. He earned a PhD in nuclear physics there in 1948 and stayed on two more years as a research associate. In 1950 Strait joined the faculty of Northwestern University, where he founded and directed the nuclear laboratory. At Northwestern he built a 5-MV vertical Van de Graaff accelerator that could accelerate both positive ions and electrons.

In 1965 Strait decided that he would prefer to spend more time teaching than was possible at Northwestern, so he accepted a professorship at Macalester College. He later served as chairman of the physics and astronomy department there. He also established a 150-kV particle accelerator laboratory. His experimental nuclear physics course, in which students undertook guided accelerator projects, provided a hands-on research experience not often available to undergraduates. Another of his favorite courses was one on modern physics, out of which grew a book he coauthored in 1978 with Sung Kyu Kim, *Modern Physics for Scientists and Engineers*.

In 1970-71 at Argonne National Laboratory, Strait collaborated with Harold E. Jackson on studies of nuclear reactions induced by gamma

rays. In 1978 Strait designed the first x-ray charge-changed beam coincidence apparatus, which he and his coworkers used to discover the resonant transfer excitation process.

Even during his teaching years, Strait kept up with recent developments in physics. He was an incredibly creative and gifted scientist. As a teacher he worked very hard with students, whose admiration for him knew no bounds. His many friends will remember him for his good humor, ingenious solutions to difficult laboratory problems, love of physics and devotion to his family.

STEPHEN SHAFROTH

University of North Carolina,

Chapel Hill

HERMAN FESHBACH

Massachusetts Institute of Technology

Cambridge, Massachusetts

SUNG KYU KIM

Macalester College

St. Paul, Minnesota

Paul H. Stelson

Paul H. Stelson, a senior research scientist at Oak Ridge National Laboratory, died of cancer on 19 July 1992. He was 65.

Stelson was born in Ames, Iowa. He served in the US Navy in World War II. He received his bachelor's and master's degrees in physics from Purdue University and his doctorate in physics from MIT in 1950. Following a brief period on the faculty of Rice University, Stelson joined the ORNL physics division in 1953. In 1963 he was appointed director of the ORNL High Voltage Laboratory, and in 1971 he became associate director of the physics division. From 1973 until 1983 Stelson served as director of the physics division.

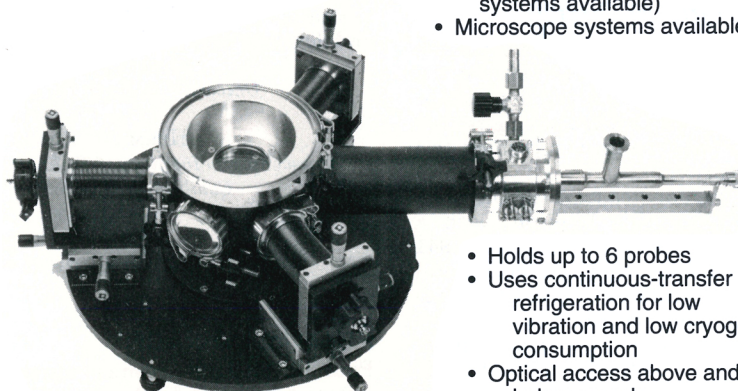
Stelson authored numerous publications on nuclear reactions and scattering, nuclear spectroscopy, neutron physics and Coulomb excitation. Particularly notable was his pioneering work on Coulomb excitation during the 1950s and 1960s in collaboration with Francis McGowan. Stelson and McGowan made important contributions both in developing experimental techniques and in determining a large variety of nuclear properties for low-lying states in stable nuclei. Their accurate measurement of gamma-ray angular distribution coefficients demonstrated that the classical theory of Coulomb excitation was inadequate and stimulated the development of a complete quantum mechanical treatment. Following his return to full-time research in 1983, Stelson began an innovative study of the subbarrier fusion of heavy ions.

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In addition to his other activities, Stelson served as an editor of *Physical Review*, and since 1968 he had been an adjunct faculty member of the University of Tennessee.

Paul's gentle manner in dealing with the administration of science is remembered fondly by his colleagues. His love of physics and of the teaching of physics was an inspiration to all those whom he touched.

JAMES BALL

RUSSELL ROBINSON

*Oak Ridge National Laboratory
Oak Ridge, Tennessee*

Hack Arroe

Hack Arroe died on 16 May 1992 at his home in upstate New York after an extended illness.

Born in Denmark in 1920, Hack studied at the University of Copenhagen under Niels Bohr and earned first a PhD and then a DSc in atomic structure and spectroscopy there. He served as a commodore captain in the Royal Danish Navy and never lost his love of sailing and boating.

In 1947 Hack came to the US, where he taught and conducted research at the University of Wisconsin, Princeton University, Montana State University, the Denver Research Institute and the State University of New York College at Fredonia. His primary research was the investigation of the nuclear perturbations of atomic energy levels that lead to hyperfine structure in the atomic spectral lines. The results he obtained were used in inferring possible structure in the nucleus from the hyperfine structure and guided the formulation of nuclear models such as those proposed by Maria Goeppert-Mayer, Aage Bohr and others.

While at the University of Wisconsin, Hack formed a productive collaboration with Julian Mack, who had been instrumental in bringing Hack to the US. At the Denver Research Institute he was the director of the division of physics, and at Fredonia he was chair of the physics department from 1963 until 1978.

Hack was a consummate teacher, always concerned with imparting genuine understanding to his students. The care he exhibited in his research and teaching was also reflected in his administrative work. His many students, friends and colleagues were saddened by his debilitating illness but rejoice in his release and are grateful for their good fortune in having known him.

CHARLES A. LINCOLN

*Whitman College
Walla Walla, Washington*