

Carl Dover

Carl Dover, a distinguished nuclear physicist at Brookhaven National Laboratory (BNL), died at home on 4 June 1996 after a courageous two-and-a-half-year battle with brain cancer. He was 55 years old.

Born in Milwaukee, Wisconsin, Carl studied at MIT, where he received his SB in 1963 and his PhD in 1967, both in physics. Following completion of his doctorate, which dealt with coupled meson-nucleon systems, he spent three years in Europe, initially at the Institute for Theoretical Physics of the University of Heidelberg, and later at the University of Paris campus at Orsay. He joined Brookhaven in 1971 and remained there for the rest of his career, with the exception of a sabbatical at the Orsay campus (1983-84) and frequent shorter stays both at Orsay and at universities in Tübingen and Jerusalem. At BNL, he was promoted through the ranks to senior scientist and became head of the nuclear theory group. He was also concurrently an adjunct professor at both Yale University and the State University of New York at Stony Brook.

Dover was a prominent leading exponent of nuclear physics at the intersection of nuclear and particle physics, and he had a profound impact on hadronic research at BNL's Alternating Gradient Synchrotron (AGS), CERN's Low Energy Antiproton Ring (LEAR) and the Japanese accelerator at the National Laboratory for High Energy Physics (KEK).

One of his first efforts at Brookhaven was to work on a density expansion of the pion-nucleus optical potential, which found immediate application to the analysis of (K^- , π^-) reactions

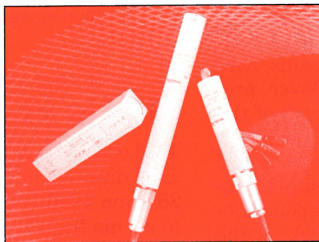


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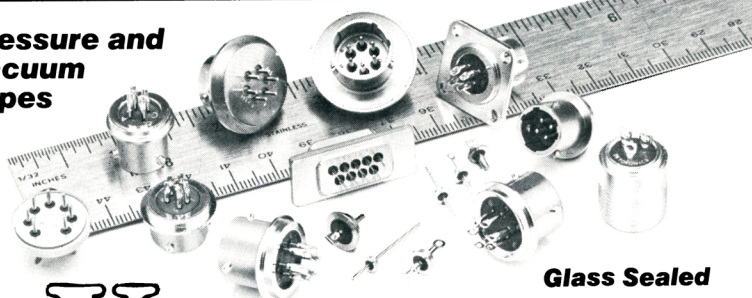
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on nuclear targets. It had been realized that studies of these strangeness-exchange reactions, which convert a neutron into a Λ to produce a hypernucleus, were becoming feasible at CERN and Brookhaven. At a summer study meeting on nuclear and hypernuclear physics with kaon beams, held at Brookhaven in 1973, Dover presented a comprehensive survey of the kaon-nucleus interaction. This talk—and all the many talks he was invited to give—included a synthesis of previous work, identification of open problems, and some original work in the form of calculations directed towards the next round of experiments. At the next Brookhaven summer study in 1976, Dover expounded on the uses of the weakly absorbed K^+ meson as a probe and on the use of the (K^-, K^+) reaction to produce $\Lambda\Lambda$ and Ξ hypernuclei.

In 1977, he began a lifelong collaboration with Avraham Gal, highlighted by an analysis of the first Brookhaven experiment to study the (K^-, π^-) reaction on carbon-12. In 1980, Dover and his colleagues published an influential paper on the possibility of using the (π^+, K^+) reaction to produce high-spin states in Λ hypernuclei. The predictions were confirmed in BNL and KEK experimental results.

Dover also led efforts in model calculations of dibaryon production in strangeness-changing nuclear reactions and in heavy-ion reactions. He was heavily involved in a large collaboration to search for strangelets (long-lived, multi-quark systems with a high strange quark content) produced in relativistic heavy-ion collisions at the AGS.

Dover also looked at nucleon-anti-nucleon interactions and had a strong influence on the experimental program at LEAR. He made lasting contributions to the study of $N\bar{N}$ potentials and to the general understanding of the $N\bar{N}$ annihilation process.

Carl was a member of the Nuclear Science Advisory Committee (1988–91) and held several offices, including chairman, in the division of nuclear physics of the American Physical Society. He was a member of many editorial boards, including that of *Physical Review C*.

In addition to his considerable impact on physics, Carl projected to those around him his sense that life was worth living, that all problems had a solution and that he frequently wished to be a part of the solution. He was an excellent chess player and a devoted jogger. Carl's determined effort to participate in meetings and deliver talks during his extended final illness was quite remarkable. His enthusiasm for physics and his cheerful demeanor will

be sorely missed, at BNL and in the international physics community.

**PETER D. BOND
SIDNEY H. KAHANA
D. JOHN MILLENER**

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Melvin H. Mueller

Melvin H. Mueller died of heart disease in Elmhurst, Illinois, on 28 June 1996. Mel, as he was known to all his friends, was born on 22 February 1918 in Spencer, Iowa, received a BA in 1940 from the University of Northern Iowa and earned a PhD in chemistry from the University of Illinois in 1949. After several years at Deere & Co, the US Rubber Co and the University of Illinois, he joined the Argonne National Laboratory in 1960; he was a senior scientist at Argonne when he retired in the mid-1980s.

Mel was very active in actinide structural research and made many significant contributions to powder diffraction methods. One of them, his 1960 least squares program for lattice parameter determination, written with LeRoy Heaton and K. T. Miller, is still highly regarded and widely used. He also collected the first set of single-crystal neutron-diffraction data on the CP-5 reactor, in collaboration with Sid Sidhu and Stan Simonsen. His knowledge of the numerous uranium phases, including anisotropic grain growth in bulk uranium, led to phase characterization of the uranium silicides.

Mel also made numerous major contributions to a variety of scientific organizations. In all of them, his was a voice of reason and compassion in difficult situations. He served tirelessly as secretary of the American Crystal-

lographic Association from 1973 to 1975. He was later appointed to the American Institute of Physics Governing Board, serving from 1981 to 1987, and also being a member of its executive committee in 1985–86.

His work on the Metals and Alloys Subcommittee of the International Centre for Diffraction Data (ICDD) resulted in the third edition of the *Metals & Alloys Search Manual* (1994, ICDD, Swarthmore, Pennsylvania) being always current and available in a form that is most useful for both newcomers and those more experienced in the field. Mel chaired the Grants-in-Aid Committee of ICDD from 1989 to 1993, a period when the number of grant recipients, especially from overseas, increased significantly, largely thanks to Mel's efforts.

In retirement, Mel continued a successful collaboration with his Argonne colleagues on a wide range of alloy systems. In addition, he served on the board of directors of the ICDD, 1991–95, as well as on a number of its committees.

Mel's positive attitude toward life and its challenges earned him a host of lasting friends. They will long remember him as a fine scientist, an enthusiastic collaborator and a compassionate human being. He will be sadly missed.

SIDNEY C. ABRAHAMS

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Peter Weinzierl

Peter Weinzierl, a distinguished Austrian physicist, died in Vienna on 10 May 1996 at the age of 73. At the time of his death, he was professor emeritus in the faculty of natural sciences at Vienna University.

Peter was born on 31 March 1923 in Vienna. After having been badly wounded in World War II, he switched from chemistry to physics and graduated in 1949 with a PhD from Vienna University. In 1952, he joined the National Bureau of Standards (now the National Institute of Standards and Technology) near Washington, DC, where he worked in nuclear electronics. There he developed the precursor of the constant fraction pulse-height discriminator (CFD), a standard instrument in nuclear electronics nowadays.

In 1958, Peter acquired the habilitation (qualification) for nuclear phys-



MELVIN H. MUELLER