

fessor, having held the Gerard Swope chair in physics.

Rosen's other contributions included helping to establish the Israel Physical Society in 1954 and serving as its president from 1955 to 1957, and being a cofounder of the Israel Academy of Sciences and Humanities in 1959. In addition, he was closely associated with the international conferences on general relativity and gravitation from their inception in 1955, and he served as president of the International Society for General Relativity and Gravitation from 1974 until 1977. Further, from 1969 until 1971, during the startup of Ben Gurion University of the Negev in Beersheba, he served as dean of the engineering school there.

All who knew Nate Rosen personally remember his kindness, modesty, integrity, gentle sense of humor and abiding concern for social justice, which he shared with his late wife, Anna. Until his last days, he was a familiar sight on the Technion campus, walking with his backpack to the office.

PETER G. BERGMANN
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Syracuse, New York
New York University
New York, New York

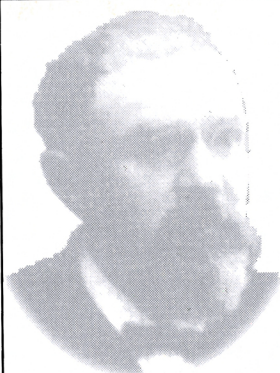
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Chapel Hill, North Carolina

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Technion—Israel Institute of Technology
Haifa, Israel

Carson Dunning Jeffries

Carson Dunning Jeffries, a distinguished and beloved member of the physics department at the University of California, Berkeley, died of a brain tumor on 18 October 1995 at the solar home that he had built in the Oakland hills.

He was born on 20 March 1922 in Lake Charles, Louisiana, and earned his BS degree in physics at Louisiana State University in 1943. Soon thereafter he began wartime development work on radar countermeasures at Harvard University, where his talents caught the attention of Felix Bloch, who later persuaded him to become a graduate student of his at Stanford University. Carson's PhD from Stanford, awarded in 1951, involved a precision measurement of the magnetic moment of the proton, obtained by comparing the proton nuclear resonance and orbital rotation frequencies. In January 1952, after a year at the University of Zurich, he joined the Berkeley physics department, where he enjoyed



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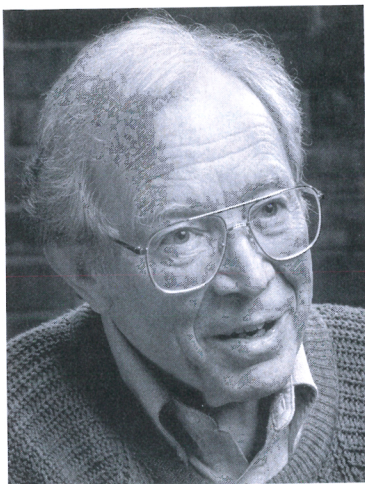
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CARSON DUNNING JEFFRIES

a distinguished lifelong career.

Carson was one of those happy scientists who liked nothing more than working productively in his laboratory with his own hands. He organized his experimental projects with consummate skill and carried them out with incredible speed. One would find him in his lab, day and night, almost oblivious to whatever else was going on in the world, often obtaining publishable results within a matter of weeks. These skills and his pure joy in doing new physics enabled him to enter emerging fields with great effectiveness. He did world-class research in nuclear magnetic resonance and electron spin resonance (1952–71), optical pumping and dynamic nuclear polarization in solids (1956–71), electron-hole liquids in semiconductors (1972–83), nonlinear dynamics and chaos in solids (1981–95) and nonlinear processes in high-temperature superconductors (1987–95).

Within these categories his work had many highlights. He made the first experimental observation of the isotropic spin-spin exchange in metals. About the same time as Anatole Abragam in Paris, he formulated means and methods for the dynamic polarization of nuclei in solids by the saturation of forbidden microwave transitions. This procedure provided sufficient proton polarization to enable him, with Owen Chamberlain, to realize the large polarized targets required for nuclear-scattering experiments. Carson was the first to demonstrate the existence of giant electron-hole droplets in semiconductors, a development that stunned the Russian theorists who first postulated the existence of droplets. Earlier, in 1969, he had been the only American participant invited to the USSR for the 25-year jubilee conference at Kazan

celebrating the discovery of paramagnetic electron resonance.

Carson enriched the campus by his extraordinary activities as an artist of professional standing. Self-taught, he started with abstract painting and went on to kinetic sculpture. He was one of the earliest practitioners of laser art. He specialized in displays that were musically controlled, working with eminent composers such as John Cage.

His memorial is the lasting image in the minds of colleagues, former students, friends and family of an inspiring human being.

ERWIN L. HAHN
WALTER D. KNIGHT
ALAN M. PORTIS
JOHN H. REYNOLDS

*University of California, Berkeley
Berkeley, California*

A. J. C. Wilson

Arthur James Cochran Wilson, a leader among the world's crystallographers for almost half a century, died quietly at his home in Cambridge, England, on 1 July 1995. He remained active in research into his eighties, his last paper appearing in *Acta Crystallographica* in the year of his death.

Born in Springhill, Nova Scotia, Canada, in 1914, Arthur Wilson was educated at King's Collegiate School in Windsor, Nova Scotia, and received his BSc in 1934 and MSc in 1936 from Dalhousie University. MIT awarded him his first PhD in 1938 for his study of the heat capacity of ferroelectric Rochelle salt between –30 and +30 °C. In 1937 he won an 1851 Exhibition Scholarship, which took him from MIT to St. John's College, Cambridge, and the Cavendish Laboratory. There he earned a second PhD in 1942, nominally under Lawrence Bragg but effectively supervised by Henry Lipson.

At Cambridge, Wilson was concerned with three aspects of crystallography. His thesis measurements of the thermal expansion of aluminum and lead, which involved the precise determination of lattice constants, led to a general investigation of the various factors that influence the position, shape and intensity of x-ray powder diffraction lines. His second interest—in crystal imperfections through a study of stacking faults in Co and in the alloy Cu₃Au—led to his general treatment of diffraction effects produced by small, distorted or otherwise imperfect crystallites. He subsequently published a book, *X-Ray Optics* (1949; 2nd ed., 1962, Methuen), which has formed the starting point for much research in the field and is still a frequently consulted reference.