

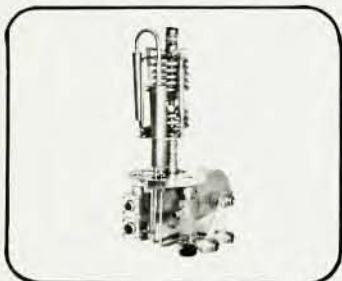
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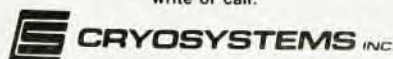
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Joseph Lee Fowler

Nuclear physics lost one of its stalwarts on 3 June 1984, with the unexpected death of Joseph Lee Fowler. Fowler was widely admired and loved for his fundamental research, for his administrative talent, for his abilities in teaching nuclear physics, and for his humanity and keen sense of humor.

Fowler was born in Springfield, Ohio, on 19 November 1913, and received both his bachelor's and master's degrees in physics in 1938 from the University of Tennessee in Knoxville. He was encouraged to enter graduate school at Princeton, where he received a PhD in 1943. There, also, he was swept up in the war effort, participating in one of the early isotope-separation methods, the isotron. In 1944 he moved to Los Alamos—incidentally assisting in moving the Harvard cyclotron to that site. At Los Alamos his responsibilities rapidly grew—first to section chief of the bomb division, then to group leader in charge of the cyclotron. In his free time, Fowler enjoyed long recreational horseback rides in the Jemez mountains.

After the war, Fowler became unhappy with weapons work and moved back to Tennessee, to the Oak Ridge National Laboratory. After a year's work with the first cyclotron at Oak Ridge, he shifted to the electrostatic accelerators and acted as director of the high-voltage laboratory from 1951 to 1953. He served as associate director of the Oak Ridge physics division from 1954 to 1957, and as director from 1957 to 1973. He spent a happy year at the Harwell Laboratory in England in 1973-74, and on returning, assumed a double appointment as a research associate at Oak Ridge and a professor of physics at the University of Tennessee. He retired from Oak Ridge in 1978, but held the post at his beloved *alma mater* until his death.

Fowler's research interests centered upon fast neutrons—their scattering and the nuclear reactions that they produce. In addition to its implications in nuclear structure theory, this information was important in the development of nuclear reactors. Sources of monokinetic neutrons in the MeV energy range were limited in the 1950s and 1960s, and Fowler and his colleagues used various experimental techniques to obtain the continuous cross section curves with their numerous resonances. His research was mainly with the lighter elements, with one excursion to Pb²⁰⁸. Under his leadership, the physics division acquired its first tandem Van de Graaff accelerator and the electron linear accelerator thus the division was strengthened both in nuclear physics and in theoretical and



FOWLER

experimental work in a wide range of activities.

An important interlude came when Fowler and the late Jerry B. Marion together edited an impressive two-volume treatise on fast-neutron physics. His royalties from this book were donated to the University of Tennessee physics department.

He was also active in the affairs of The American Physical Society: He was chairman of the Southeastern Section in 1960-61, and when the Division of Nuclear Physics was being established (1966-67), he was chairman of its organizing committee. He was secretary of the physics section of the International Union of Pure and Applied Physics in 1972-74, and was chairman of the Fifth International Conference on Neutron Cross Sections for Technology in 1979; he later worked on editing its 1000-page volume of proceedings.

After his return from England, Fowler's interests became increasingly involved with the University of Tennessee. His course on modern physics was actively sought by physics majors, engineers and graduate students because of his wealth of first-hand knowledge of the subject and his delightful and stimulating way of presenting it. Fowler knew virtually everyone in the field and the lore that went with them. In experiments at the University, he became interested in the search for fractional electric charges, using the idea of concentrating them in niobium or other materials and then detecting them by a variant of the Millikan oil-drop technique. He will be remembered by his many friends as a man of exceptional good fellowship and *bonhomie*.

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