

single nucleon. Subsequently she held research positions at several institutions, including the universities of Illinois, Rochester and Colorado, where her husband, physicist George Salzman, was a member of the faculty. During this period, she and her husband studied single-particle exchange models for inelastic interactions at high energies. Her extension of this work to multiperipheral models was influential in early treatments of multiparticle production reactions. Boldly and successfully applying these models in kinematic regions in which the underlying approximations were difficult to justify, she nevertheless obtained significant results concerning the range of interactions at high energies. Later work by others on absorptive single-particle exchange models and Reggeized multiperipheral models was a logical extension of these early ideas. The Salzmanns also made contributions to the theory of electromagnetic interactions of vector bosons during this period.

In 1965, the Salzmanns both accepted positions at the newly opened Boston Campus of the University of Massachusetts. Here they were charged with the responsibility of establishing teaching and research programs in physics from scratch. Although her husband was appointed with tenure, Freda Salzman's appointment was only three-quarter time, in order to avoid a possible conflict between AAUP guidelines on tenure and the University of Massachusetts' policy on nepotism then in effect. Around this time, the Salzmanns also presented a theory of time-reversal violation via electric dipole interactions.

In 1967, the Chancellor stated that a committee of the Board of Trustees reaffirmed as University of Massachusetts policy that husband and wife could not hold contemporaneous appointments in the same department, except under extraordinary circumstances. Subsequently the administration terminated Freda's appointment and the appointments of other wives of faculty. This action, condemned by many faculty and women scientists nationwide, led to a protracted but successful struggle by the Salzmanns and the department to have Freda Salzman reinstated. The case was influential in the abolition of the nepotism policy at the university; she was reappointed to the faculty in April 1972. Despite these difficulties, which were an evident strain on her health and emotional energy, Salzman initiated research in general relativity on the dynamical content of the Schwarzschild metric. Together with previous work, it confirmed her reputation as a highly creative and versatile theoretical physicist.

Partly as a result of her difficulties as a woman scientist, Salzman became deeply involved with feminist issues and with the social consequences of scientific and technological policy. She also sought to be a model for other women engaging in scientific careers.

DONALD M. LYONS
*University of Massachusetts
Boston*

Bernard Weinstock

Bernard Weinstock died unexpectedly of a heart attack on 12 September 1981, at the age of 63. He was born in New York City, received an AB degree from Brooklyn College in 1938, and entered into graduate studies in physical chemistry at Columbia University in 1939. A student of Harold Urey, he soon became involved in isotope separation and was one of the pioneers of the



WEINSTOCK

atomic energy program at Columbia.

In 1945 he went with Urey to the University of Chicago, where he received his PhD in 1948.

He was employed by SAM Laboratories at Columbia University from 1941 to 1943 and at Los Alamos from 1943 to 1945. He was a senior scientist at the Argonne National Laboratory from 1947 to 1960, when he joined the Ford Motor Company Scientific Laboratory; he was manager of the chemistry department of the Ford engineering and research staff when he died.

His research, which covered a wide range of activities, began with his graduate studies on isotope separation of deuterium and uranium. During a good portion of his career at Argonne he studied the properties of liquid helium-3. His investigations of uranium and plutonium hexafluorides began at Los Alamos and extended to hexafluoride chemistry of other metals as well. He played a significant role in early studies of xenon fluoride chemistry.

After joining the Ford Scientific La-

boratory, he initiated a program in gas phase kinetics together with H. Niki. This led him to considerations of environmental atmospheric chemistry, a subject which occupied the bulk of his attention in the last decade of his life.

A fellow of the American Physical Society and a member of the Executive Committee of the APS Division of Chemical Physics from 1963 to 1965, Weinstock was also a United States Delegate to the Second International Conference on Peaceful Uses of Atomic Energy in Geneva in 1958. In addition he served on numerous scientific editorial advisory boards.

ROBERT ULLMAN
*Ford Motor Company
Engineering and Research Staff*

Marvin M. D. Williams

Marvin M. D. Williams died on 3 August 1981 at the age of 78 in Rochester, Minnesota, after a brief illness. His distinguished career was devoted almost entirely to medical physics. His initiation into this field, in 1927, occurred when perhaps no more than a handful of physicists in the US were applying themselves to medical matters. Williams helped make medical physics the flourishing field—of 1300 practitioners—it is today and helped convince physicians of the value and importance of his discipline, especially in its application to radiology. As a member of the staff of the Mayo Clinic, Williams provided superb physics support to his colleagues and instructed several hundred residents in the Mayo radiology training program over the many years of his tenure. The skill and excellent organization of his teaching were widely recognized. Even after his retirement, he was much in demand as a visiting professor at medical schools throughout the country, most of which had physics faculty members.

In his many years as a Guest Examiner in Physics for the American Board of Radiology he exerted considerable influence on the training of medical physicists as the result of a unique situation in which the American Board of Radiology provides examination and certification not only of radiologists (who are, of course, physicians) but also of physicists. As a member of the Physics Credentials and the Examination committees, he participated in setting standards of education, training and experience for applicants to the certification process.

Williams began his physics education at Whitman College, in Walla Walla, Washington, where he received a BS in 1925. He earned an MS in physiology from the University of Pennsylvania in 1929 and, in 1931, a