



DUGGAL

His early work involved the development, construction and operation of a variety of cosmic-ray detectors. In 1960 he came to the United States to join the Bartol Research Foundation as a postdoctoral fellow. He ultimately received a permanent appointment, and with the formal implementation of Bartol's educational role, he advanced to the rank of professor. During subsequent years he concentrated on analyzing cosmic-ray data obtained by Bartol's worldwide network of cosmic-ray observatories, other ground-based stations, and many different spacecraft. His most recent work developed new techniques for the statistical analysis of geophysical phenomena.

MARTIN A. POMERANTZ
Bartol Research Foundation

Henry M. Foley

Henry Foley, for 36 years a professor of physics at Columbia University, died on 14 August 1982 at the age of 65. He contributed in vital ways to the theory of electrons in atoms and molecules, to the teaching of two generations of students and to the intellectual life of the entire university.

FOLEY



Foley received his PhD from the University of Michigan in 1942. After several years at the Office of Scientific Research and Development of the US Navy and at Johns Hopkins University he joined Columbia's faculty in 1946. In 1947 he collaborated with Polycarp Kusch in the famous experiments that first determined the anomalous magnetic moment of the electron. That work was crucial in helping to establish quantum electrodynamics as an extraordinarily successful description of interacting electrons and electromagnetic fields. He continued to do significant work in the electrodynamics of atoms and molecules for the next thirty-five years.

For the past two decades Foley devoted part of his professional life to advising the government on technical issues, initially mainly ones involving national security. This quite varied work included a paper on how a spacecraft could push on an ambient magnetic field for orientation and thrust. In recent years, he spent more of his time studying and warning of problems we face because of continuing or potential insults to the environment. He studied the impact of supersonic aircraft on ozone. He played a major role in discovering and then warning of the probable disaster to global stratosphere ozone that could result from nuclear war. He contributed to investigations of the consequences to climate from continued burning of hydrocarbons. His last work was on the causes of acid rain.

MALVIN RUDERMAN
Columbia University

Charles G. Miller

Charles G. Miller died suddenly in Pasadena, California, on 1 March 1982.

He was awarded a PhD in physics at the University of California, Berkeley, in 1949. He then joined the physics department at UC Santa Barbara for ten productive years of teaching and research. During this period, he also served for short periods at the Oak Ridge Institute for Nuclear Studies, at the Clarendon Laboratories at Oxford University, and at the Israel Atomic Energy Commission laboratories on applications of radioactive materials to a variety of problems including radiation measurements, training programs, energy conversion and use of new technologies.

His wide-ranging interests in applied problems convinced him to reorient himself toward industry, and in 1957 he became vice president for research and development of the US Nuclear Corporation. Remaining there until 1964, he was concerned with such industrial radiology problems as the

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MILLER

development of isotopic tracers for work in oil wells and the use of radiation for food and pharmaceutical sterilization, for testing effects of ionizing radiation on electronic systems and for cancer therapy.

In 1966, Miller joined the Jet Propulsion Laboratory in Pasadena as a member of the technical staff. He worked there for 15 years, until his death, as an in-house adviser and consultant, primarily on gaseous electronics, plasma physics, optics and nuclear physics and on new industrial processes.

GERHARD L. WEISSLER
University of Southern California
ALLEN M. GOLDSTEIN
*Technical Associates,
Canoga Park*

John S. Blair

John S. Blair, noted theoretical nuclear physicist, died on 8 September 1982, at the age of 59.

Blair studied as an undergraduate at Wisconsin and Yale. During the war years he served at Los Alamos, Oak Ridge and the Metallurgical Laboratory in Chicago. He began his studies toward a PhD under Gregory Breit, but transferred to the University of Illinois, where he studied under Sidney Dancoff. Following Dancoff's death, he completed his degree under Geoffrey Chew in 1951. He continued as a research associate at Illinois for one year, then joined the faculty at the University of Washington, Seattle, in 1952, where he remained for the next 30 years.

John Blair was an active nuclear theorist and, in the past decade or so, also a nuclear experimentalist, whose particular interests centered on studies of nuclear reactions. He made notable

contributions to the study of the elastic and inelastic scattering from nuclei of strongly absorbed particles. His sharp cut-off model, often referred to as the "Blair model," has remained useful in understanding the scattering of particles (in the domain where semiclassical approximations are valid) such as heavy ions. He also made important contributions to the understanding of the excitation of collective nuclear states and to particle-gamma correlations. Together with Norman Austern, he predicted certain phase relationships between elastic and inelastic scattering differential cross sections that have been very useful in understanding these reactions. In addition, he contributed to such aspects of nuclear physics as meson physics, isobaric analog-state excitations, atomic inner-shell transitions for the study of nuclear phenomena, heavy ion reactions, and polarization and spin-flip experiments. He served in many roles in the Division of Nuclear Physics and was its chairman-elect when he died.

Blair was a dedicated physicist with a deep commitment to excellence. He took a particular interest in the welfare and scientific development of his graduate students.

ERNEST M. HENLEY
DAVID BODANSKY
LAWRENCE WILETS
*University of Washington
Seattle*

BLAIR



Henry M. Rosenstock

Henry M. Rosenstock, senior chemist at the National Bureau of Standards, died 14 September 1982.

Rosenstock was born in Mannheim, Germany, in 1928. With his family he immigrated to the United States in 1936. His undergraduate education was at the City College of New York, where he graduated in 1949 with a bachelor's degree in chemistry. He obtained his PhD at the University of

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