

WE HEAR THAT

IEEE Gives Annual Awards

At its annual honors ceremony in June, the Institute of Electrical and Electronics Engineers presented awards to 17 individuals. Among the recipients were **Floyd Dunn, Carver A. Mead, Martin A. Uman, Alan G. Chynoweth, Sol Triebwasser** and **Leon Lederman**.

Dunn, a professor emeritus in the department of electrical and computer engineering at the University of Illinois at Urbana-Champaign, earned IEEE's Edison Medal for "contributions to . . . ultrasonic propagation in and interactions with biological media." Mead was given the IEEE John Von Neumann Medal for his "leadership and innovative contributions to VLSI [very large scale integration] and creative microelectronic structures." The Heinrich Hertz Medal went to Uman, a professor in and chair of the electrical and computer engineering department of the University of Florida for "major contributions to the understanding of lightning electromagnetics and its application to lightning detection and protection."

The recipients of the IEEE Engineering Leadership Recognitions were Chynoweth, who is retired from Bell Communications Research in Morristown, New Jersey, and Triebwasser, director of technical journals and professional relations at IBM's T. J. Watson Research Center in Yorktown Heights, New York. Chynoweth was cited for "the initiation, organization and inspired leadership of Bellcore's applied research division." Triebwasser was honored for "pioneering leadership in the development of MOS [metal oxide semiconductors] large scale integration."

Lederman, the Pritzker Professor of Science at the Illinois Institute of Technology and director emeritus of Fermilab, was named an honorary member of IEEE.

On a separate occasion in June, **Wallace M. Manheimer** received the 1996 Plasma Science and Applications Committee Award given by IEEE. Manheimer is a senior scientist for fundamental plasma processes at the Naval Research Laboratory in Washington, DC.

IN BRIEF

This fall **John P. Holdren** is moving to Harvard University, where he will be the Teresa and John Heinz Professor of Environmental Policy at the Kennedy School of Government. Holdren

has been the Class of 1935 Professor of Energy at the University of California, Berkeley, and a visiting distinguished scientist at the Woods Hole Research Center in Massachusetts.

Freeman Dyson is the 1996 recipient of Rockefeller University's Lewis Thomas Prize, which honors scientists for their artistic achievements. The citation says, in part, that Dyson, who is a professor emeritus of physics at the

Institute for Advanced Study in Princeton, New Jersey, "has mastered the art of transforming his deeply humane vision of science into pellucid prose."

Robert Cava has become a professor in the chemistry department at Princeton University and in the university's Princeton Materials Institute. Cava had been a distinguished member of the technical staff at Bell Laboratories, Lucent Technologies.

OBITUARIES

Robley Evans

Robley Evans, a professor emeritus of physics at MIT, died on 31 December 1995 in Paradise Valley, Arizona, where he had been living in retirement.

Born on 18 May 1907, Evans received his BS in physics in 1928, his MS in 1929 and his PhD in 1932, all from Caltech. For his doctoral thesis, which was supervised by Robert A. Millikan, he measured the background radiation coming from Earth, so that one could distinguish it from the cosmic radiation. From 1932 to 1934, Evans studied the biological effects of radiation as a National Research Fellow at the University of California, Berkeley. In 1934, MIT invited him to join the faculty and establish an academic course in nuclear physics. He accepted, and remained at MIT for the rest of his career.

At MIT, Evans was instrumental in building the Markle Cyclotron, the first such machine to be used for biological and medical purposes. In 1935, he established the physics department's radioactivity center, to do research in nuclear physics and to foster the application of radioactivity to such fields as biology, chemistry, nutrition and geology. Evans directed the center for the next 37 years.

With the collaboration of Joseph Aub, head of medicine at Massachusetts General Hospital, and Austin Brues, then at Huntington Memorial Hospital in Boston, Evans began to study individuals who had ingested radium in the 1920s. In 1941, based on his studies of 27 people, he was able to establish one ten-millionth of a gram of radium as the "maximum permissible body burden." Having such a standard was crucial because the US was about to embark on its atomic bomb program, during which large

numbers of workers would be exposed to radioactivity in unprecedented ways. The study that Evans originated at the radioactivity center went on to include more than 900 subjects.

Together with James Howard Means of Massachusetts General, Evans developed the use of isotopes of iodine for the diagnosis and treatment of thyroid disease. Evans and Earl Chapman wrote the first definitive paper on this form of therapy in 1946.

Evans also helped develop a technique to preserve human whole blood. This research was undertaken with the Harvard Medical School to benefit servicemen wounded in World War II. Researchers used radioactive forms of iron and iodine (produced in MIT's cyclotron) to determine how long stored blood cells remained viable, by determining how long they remained in the blood of the recipient. Evans and his colleagues found a chemical to preserve the blood for up to three weeks, the time required to reach distant battlefields. The chemical was used in blood banks for several decades. Unbeknownst to his neighbors, Evans also set up a laboratory in his home during the war to make an accurate assessment of the uranium in ore samples from the Belgian Congo; the uranium was destined for use in atomic bombs, while the radium was to be returned to Belgium.

Evans was a superb teacher and wrote a widely circulated practical manual on teaching, *You and Your Students*. He also wrote a popular basic text for graduate and undergraduate students in nuclear physics, *The Atomic Nucleus* (McGraw-Hill, 1955), and served as editor, associate editor or member of the editorial board for a number of journals.

Evans served as a consultant or committee member for many hospitals, institutions, government agencies and

scientific societies. From 1946 to 1969, he was chairman of the National Research Council Subcommittee on Ship-ment of Radioactive Materials, which established regulations that have since been internationally adopted. In 1966–67, he was president of the Radiation Research Society, and in 1972–73 he presided over the Health Physics Society.

Constantine J. Maletskos, who was a student and colleague of Robley Evans's, describes his former mentor as "a world class physicist with an . . . uncanny ability to see through a problem, to simplify it and get at the important roots and to set up an appropriate model for a seemingly simple solution to a complex analysis." His famous admonition in *The Atomic Nucleus*, "A little contemplation saves a lot of calculation," expresses it all.

GORDON L. BROWNELL
Massachusetts General Hospital
Boston, Massachusetts

Russell Lee Robinson

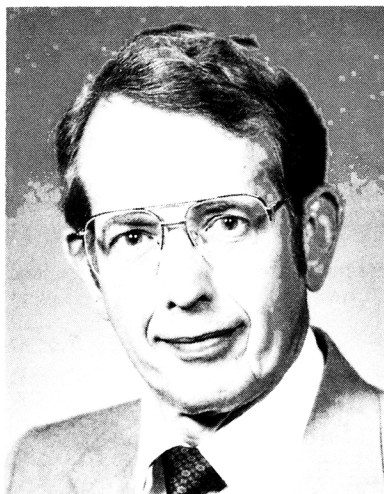
Russell Lee Robinson, a senior staff member at Oak Ridge National Laboratory, died on 25 March. In addition to having a long career in experimental nuclear physics, he served for 10 years as scientific director of the Holifield Heavy Ion Research Facility.

Born on 30 July 1931 in Louisville, Kentucky, Russell Robinson received his bachelor's degree from the University of Louisville in 1953, and his master's and doctoral degrees in physics from Indiana University in 1955 and 1958, respectively. He joined the staff of ORNL's physics division in 1958.

For the first 24 years of his career at Oak Ridge, he did basic research in nuclear physics. He was particularly active in the field of Coulomb excitation and in-beam studies of medium mass nuclei, often working in collaboration with Paul Stelson and Francis McGowan. He was a member of the team that did pioneering work on measuring the quadrupole and large hexadecapole deformations of the uranium and other actinide nuclei.

In 1974, he became the group leader responsible for the experimental facilities at ORNL's Holifield Heavy Ion Research Facility, then under construction. He also remained very productive in his research. In collaboration with a group from Vanderbilt University, Robinson explored nuclei with atomic masses of around 70. This work included the discovery of a new region of nuclear shape coexistence that included the "superdeformed" ground states of ^{74}Kr and ^{76}Kr .

Beginning in 1983, Robinson be-



RUSSELL LEE ROBINSON

came scientific director of the Holifield facility and spent the last decade of his career working as a scientific administrator. He served on a three-person board of directors that developed the concept for and managed the Joint Institute for Heavy Ion Research, which brought together funding from the Department of Energy, the state of Tennessee (through the University of Tennessee) and Vanderbilt University. The institute provided on-site user housing, office and meeting space and an active visitor's program. It was through his considerable efforts that Holifield developed an international reputation as a productive, user-friendly nuclear physics facility.

Robinson's untiring efforts and dedication were evident to the many scientists and students working at Holifield. ORNL is presently converting Holifield into a dedicated radioactive beam facility, to begin operation this fall. In preparing for the facility's future role, Robinson coordinated the specifications and procurement of a newly designed major experimental device, a third-generation recoil mass spectrometer. He also guided the design and construction of a new building addition to house this spectrometer, a hall that now bears his name.

Russell Robinson had an intense passion for nuclear physics. His gentlemanly, yet firm and fair, approach to dealing with people earned him the respect and affection of his peers and colleagues. His legacy at Oak Ridge will be long and fondly remembered by his friends.

JAMES BALL
Oak Ridge National Laboratory
Oak Ridge, Tennessee
JOSEPH HAMILTON
Vanderbilt University
Nashville, Tennessee

LeRoy Elsworth Doggett

LeRoy Elsworth Doggett, chief of the Nautical Almanac Office at the US Naval Observatory in Washington, DC, and an expert on calendars, astronomical phenomena, archaeoastronomy and astronomical history, died of cancer on 16 April 1996 in Washington, DC.

Doggett was born on 22 October 1941 in Waterloo, Iowa. He received a BS degree from the University of Michigan in 1964, an MS degree from Georgetown University in 1970, and a PhD in engineering mechanics from North Carolina State University in 1981. Starting in 1965, he worked as an astronomer in the Nautical Almanac Office; he headed that office from 1991 until his death.

For the last 20 years, he compiled and edited the US contribution to the *Astronomical Almanac* (Government Printing Office), the world standard authority for the precise determination of astronomical events and positions of celestial objects. As chief of the NAO, he was also responsible for the *Nautical Almanac* and *Air Almanac*, published by the US Naval Observatory, both of which are still widely relied upon for navigation purposes.

Doggett's doctoral dissertation was on the use of Chebyshev series for the generation of a high-precision theory of motion, or ephemeris, for Mars. His dissertation was the basis for introducing Chebyshev polynomials for representation of ephemerides in the *Almanac for Computers*, published under his name by USNO in 1976. *The Floppy Almanac* (NAO, 1986) was also based on developments that followed from his dissertation.

His research centered on celestial mechanics, and, more recently, on calendars. He investigated calendars from all over the world, both ancient and modern. He wrote the "Calendar" chapter of the *Explanatory Supplement to the Astronomical Almanac*, which is probably the most practical description of the various calendars. He wrote scholarly articles on calendars, and at his death was working on an encyclopedia of calendrical topics, including associated chronological eras and cycles. Doggett was the leading US expert on the subject and was frequently consulted by other scientists, the media and the general public on astronomical phenomena, calendars and the history of astronomy.

In response to numerous and persistent questions concerning the first sighting of the lunar crescent for Islamic calendar purposes, he organized nationwide Moon watches, which pro-