

the effort that Henry was willing to expend on his behalf.

In 1954, Henry was elected a fellow of the American Association for the Advancement of Science. He received the Outstanding Educator in America for 1974–75 and, in 1994, received the Lifetime Achievement Award, which was presented at the first diversity conference, sponsored by NSF's directorate for education and human resources. In 1999, the University of Chicago awarded Henry with a professional achievement citation, honoring his contributions to research on cryogenics and magnetism.

Henry was an ardent spokesman for equality, justice, and opportunity. He successfully confronted major challenges in his career and was determined to ensure that other African Americans would have the opportunity to perform world-class research. He founded the Committee on Minorities in Physics of the American Physical Society and was one of the early leaders in the National Society of Black Physicists. Henry was widely recognized for his dedication as an educator and supporter of generations of physics students. He will be missed by many.

HATTIE CARWELL

*Museum of African American
Technology Science Village
Oakland, California*

WILLIAM A. LESTER JR

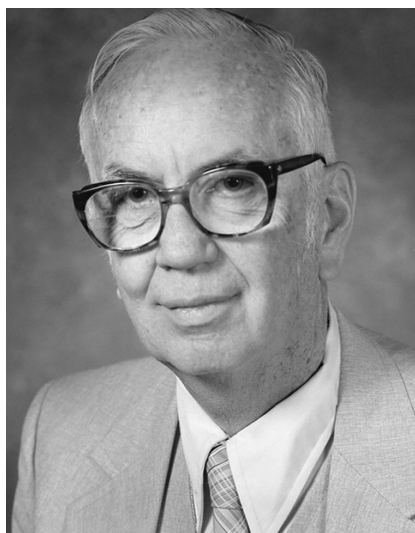
University of California, Berkeley

Robert Simpson Livingston

Robert Simpson Livingston, a leader in isotope separation and ion-source development at Oak Ridge, died on 6 March 2002 in Knoxville, Tennessee. He had been in declining health for several years.

Bob was born in Summerland, California, on 20 September 1914. He received his bachelor's degree in physics from Pomona College in Claremont, California, in 1935 and both his MA and his PhD in nuclear physics from the University of California, Berkeley, in 1941. His doctoral thesis was entitled "Heavy Particle and X-rays Produced by Deuteron Bombardment in the Cyclotron."

A protégé of Ernest Lawrence, Bob moved with a group of physicists and research engineers from the University of California Radiation Laboratory to Oak Ridge in 1943 to help supervise work on the electromagnetic isotope separation portion of the Manhattan Project. He and his asso-



ROBERT SIMPSON LIVINGSTON

ciates were responsible for the design and operation of the calutron facility for the separation of uranium-235.

After World War II, the group, under Bob's direction, continued to improve the separation process and successfully separated the first significant (gram) quantities of numerous highly enriched isotopes of thorium, uranium, and plutonium, including ^{236}U , which occurs only as a byproduct of reactor operation. Those samples were critical to the accurate determination of the physical properties needed for reactor and weapons design. Bob directed calutron process improvement until 1950, when he was appointed the director of the newly formed electronuclear research division at Oak Ridge National Laboratory (ORNL), a position he held for the next 20 years.

Bob's group also resumed cyclotron studies after the war, beginning with a small 22-inch machine constructed by inserting the accelerating structure into the modified magnet gap of a calutron separator. This machine and its successors led in 1952 to the 63-inch nitrogen cyclotron, the world's first heavy-ion cyclotron. Other free-standing machines built by the group included the 86-inch proton cyclotron, which began operation in 1950 and provided internal beam currents in excess of 2 mA at an energy of 20 MeV. Another was the Oak Ridge Isochronous Cyclotron, a variable-energy, variable-particle machine that produced its first beam in 1962 and remains fully operational today as part of ORNL's Holifield Radioactive Ion Beam Facility.

Under Bob's leadership, the electronuclear division also developed, in the late 1950s, two electron analog

cyclotrons, the second of which, in 1961, successfully accelerated electrons to their rest mass energy of 0.511 MeV. Bob organized the ORNL team that developed the Army Package Power Reactor and contributed to several other reactor projects, including the nuclear ship *Savannah*. In 1971, he joined the ORNL director's division to head the office of planning and analysis. He directed this office until his retirement in 1981.

Bob was a fellow of the Institute of Electrical and Electronics Engineers and the American Association for the Advancement of Science. In these and other learned societies, he was active in many areas. He led the organization of the biennial particle accelerator conferences and chaired the first two meetings in 1965 and 1967. Perhaps he will be best remembered by the nuclear physics community for chairing the 1972–74 NSF/Department of Energy study group on the long-range role of electron accelerators in nuclear science. Out of this study came support for what would eventually become the Thomas Jefferson National Accelerator Facility.

Bob's main hobbies were music and photography. He was an audio and recording enthusiast and loved to tinker with the newest innovations in high-fidelity sound equipment.

Bob will be remembered by those who worked with him as a man respected for his science, for his vision in directing his organization into new and challenging fields, for his ability to deal fairly and sensitively with his colleagues, and for his high level of integrity.

JAMES B. BALL

*Oak Ridge National Laboratory
Oak Ridge, Tennessee*

Harry Lee Morrison

Harry Lee Morrison, a professor of physics at the University of California, Berkeley (UCB), for 22 years and an assistant dean of the College of Letters & Science, died following a heart attack on 14 January 2002 at his home in Berkeley.

Born on 7 October 1932 in Arlington, Virginia, Morrison attended the Catholic University of America in Washington, DC, from which he received a BA in chemistry in 1955 and a PhD in chemistry 1960. His thesis, "Theoretical Investigation of Linear H_3 ," was prepared under the guidance of his adviser, Virginia Griffing, one of the few women in the US at that time to hold a senior faculty position in the sciences.