and mostly successful decisions. That ORNL continues to flourish is in great measure due to his stewardship.

All of us who know the laboratory and value its many contributions to the nation recognize the debt we owe to Herman Postma.

Alexander Zucker
University of Tennessee
Knoxville

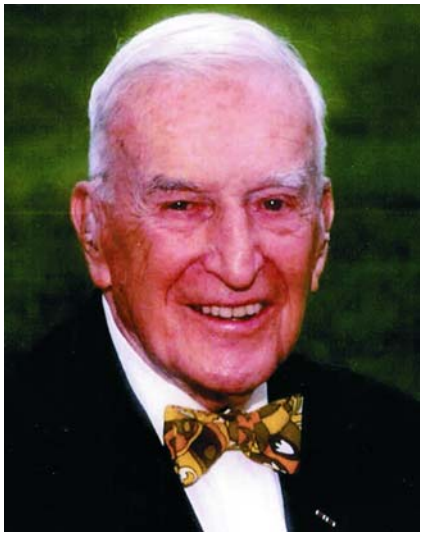
Lauriston Sale Taylor

Lauriston Sale Taylor, a radiation physicist who became a founder and leader of national and international radiation organizations, died in his sleep on 26 November 2004, in Mitchellville, Maryland, at the age of 102. Known as Laurie to his friends and colleagues, he initiated the program in x-radiation measurement standards at the National Bureau of Standards (NBS, now NIST), in 1927. By the 1950s, that program had developed into one of the world's leading radiation-physics laboratories.

Laurie was born on 1 June 1902 in Brooklyn, New York, but grew up in Maplewood, New Jersey. During an elementary-school field trip to Thomas Edison's laboratory, Laurie told the inventor–physicist about his own interest in vacuum tubes. Edison promptly gave him a cold-cathode x-ray tube. Laurie developed interests in wireless telegraphy, plumbing, and electrical wiring, and later became a licensed plumber and electrician.

Following a year of engineering studies and a year at the Western Electric Co, a predecessor to Bell Laboratories, he switched to physics and studied x rays and spectroscopy with Floyd K. Richtmyer for five years at Cornell University. In 1926, he received his AB. His doctoral thesis work was in the field of x-ray absorption spectroscopy and oscillator circuits.

When he heard that NBS needed a physicist in his field, Laurie applied for the job and was hired in 1927. However, after he had arrived at the bureau, his supervisor left for another position, so Laurie had to fend for himself. At the time, radiological societies were pressing strongly for x-ray dose standards to aid in the protection of radiologists and radiation workers and to ensure the accurate measurement of doses given to patients in radiation therapy. Laurie set about equipping a laboratory and designing a free-air ionization chamber to be the national x-ray standard up to 200 kV. He needed a chamber sufficiently small and light so that it could be physically carried to Europe for comparison with standards there, but the chamber required a uniform electric field. So Laurie developed the first guarded-field free-air ionization chamber. To provide the field uniformity, it used guard wires that were stepped down in voltage from the high-voltage electrode to the potential of the collecting electrode and its guard plates.



Lauriston Sale Taylor

In 1931, Laurie carried that national standard chamber to Britain, France, and Germany, and performed comparisons of the roentgen unit; his results were in agreement to within about 1%—extremely good for the time. The present national standard for that energy region has evolved from the original chamber and now has improved response at higher energies.

Early in his career, Laurie recognized the need for authoritative guidance to protect people from radiation. At age 26, he became a member of both the International Commission on Radiological Protection and the International Commission on Radiation Units and Measurements, and served on each for more than 50 years. He helped found the US Advisory Committee on X-Ray and Radium Protection (later the National Council on Radiation Protection and Measurements) in 1928 and became its chairman in 1929, succeeding the first chairman, William Coolidge. Laurie headed the committee for the next 48 years. He built the committee into a large, voluntary organization with a council of experts who guide the program and review the reports, and with an active committee structure that prepares the reports. In 1964, the NCRP was chartered by the US Congress.

During World War II, Laurie led a major part of the proximity fuse program. He then became scientific adviser to Hoyt Vandenberg, the commanding general of the Ninth Air Force, and led a research team in studying the effectiveness of bombing patterns in the European theater.

An excellent administrator who had a knack for choosing well-qualified staff, Laurie gradually built, during the 1940s and 1950s, a broadly based radiation-physics program at NBS into one that included three major efforts: radiation theory led by Ugo Fano, radiation standards led by Harold O. Wyckoff, and nuclear physics led by H. William Koch. Laurie was an outstanding motivator; the division attracted and retained many leading scientists. He was named associate director of NBS in 1962 and retired from the bureau in December 1964. He began a new career as special assistant to the president of the National Academy of Sciences (1965–69) and as executive director of NAS's advisory committee on emergency planning (1965–71).

A clear and prolific author, Laurie wrote or contributed to 20 books and published more than 160 scientific papers. He received numerous honors, including Gold Medals from the 13th International Congress of Radiology (1973), the Royal Swedish Academy (1992), and the American Roentgen Ray Society (1992). He also received the highest US civilian award, the Medal of Freedom, in 1946, and the Executive Office of the President's Distinguished Service Award in 1968. At the annual NCRP meetings, the Lauriston S. Taylor Lecture is a highlight.

Laurie is remembered for his offbeat sense of humor. In his office, he posted a sign saying, "Just Enough Fleas Is Good for a Dog to Keep Him from Brooding on Being a Dog." Once he wore bright socks of different colors to a seminar he was presenting at NBS just to see if anyone would notice. The audience did! He was also famous for his vast collection of bright bow ties.

Laurie enjoyed a wonderful career and is very fondly remembered by many.

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Robert Lee Walker

Robert Lee Walker, an early leader in the study of meson photoproduction, died at home in Tesuque,

New Mexico, on 5 January 2005 of a heart attack.

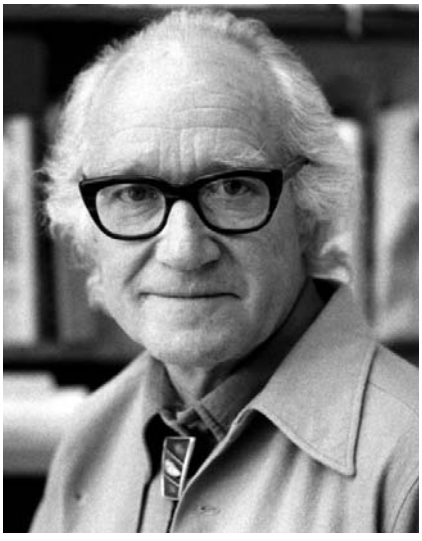
Bob was born on 29 June 1919 in St. Louis, Missouri. After receiving his BS in physics from the University of Chicago in 1941, he joined the Manhattan Project and worked in Chicago's Metallurgical Laboratory to help assemble Enrico Fermi's first nuclear pile. Work on the project later took him to Los Alamos.

After World War II, Bob attended graduate school at Cornell University to study nuclear physics under Boyce McDaniel. Using a pair spectrometer they had invented in 1947, Bob and McDaniel made many measurements of nuclear reactions in which a gamma was emitted. Bob received his PhD in 1948.

He joined Caltech a year later as an assistant professor. His arrival coincided with Caltech's plans to build an electron accelerator. During the accelerator's planning stage, Ernest Lawrence of the University of California's radiation laboratory called Robert Bacher at Caltech and offered the quarter-scale model of the Bevatron magnet for conversion into an electron synchrotron. Adequate space with a large overhead crane was found in Caltech's optical shop, where the 200-inch mirror for the Hale telescope had been ground. It was an era when machines were built by the intended users, and Bob played a lead role in measuring and correcting the magnet for the initial operation at 500 MeV. A later conversion to 1500 MeV made the machine the world's highest-energy electron synchrotron.

Bob led the physics effort and in 1953 produced the first paper on the photoproduction of π^0 mesons that showed solid evidence for the giant 1232-MeV baryon resonance. The 500-MeV energy enabled the Caltech measurements to be combined with pion-scattering phase shifts measured at the cyclotrons. Bob helped join those two sets of measurements for a coherent theory of pion photoproduction. Major contributions to the measurements resulted from two large magnet spectrometers he built. During the next 16 years, Bob and his graduate students produced a series of papers that helped define the physics of pion and kaon photoproduction in the low-energy region.

In 1960, the Caltech high-energy physics group hosted a study of the feasibility of a 300-GeV proton synchrotron. Bob made key contributions to the study; in particular, he wrote the first analysis of a rapid-cycling booster synchrotron. During that very heady time, the first coherent study



Robert Lee Walker

for such a machine was produced.

It soon became clear that the Caltech machine's lifetime was limited. Bob supported the development of Caltech's users' group, which Bacher called "the physics elsewhere group." The users' group participated in experiments at the Bevatron and the Alternating Gradient Synchrotron at Brookhaven National Laboratory. Later, when Fermilab's main ring was commissioned, the Caltech users' group was joined by a small group of physicists from Lawrence Berkeley Laboratory, and the cross section for π^-p charge exchange scattering was measured. The experiment used one of the first fine-grained lead scintillator calorimeters to measure the gammas from the π^0. Bob made major contributions to the original invention of the Main Ring and superb contributions to the construction of its intricate system of light pipes.

A thesis adviser to 22 students who also helped and advised many others, Bob was a popular teacher in both the classroom and the lab. Many generations of students fondly remember his often droll witticisms from his quantum-mechanics or math-methods lectures. He and his colleague Jon Mathews wrote *Mathematical Methods of Physics* (W. A. Benjamin, 1964).

Bob retired unexpectedly in 1981 and moved to Tesuque. Building harpsichords and keyboard instruments that are popular with Southwestern musicians became a passion. He served for a time as chairman of the Southwestern Association for Indian Arts. Bob was a great friend to many people and we all miss him.

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