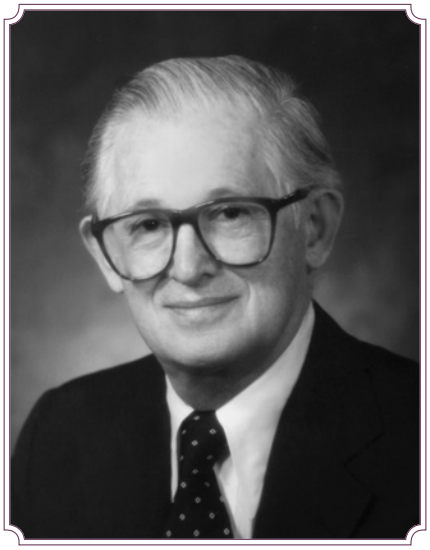
In Remembrance

Professor emeritus Benjamin Lax dies at 99

Pioneer in semiconductors created MIT's National Magnet Laboratory and served as associate director of the MIT Lincoln Laboratory.

by Daniel Cohn / MIT Plasma Science and Fusion Center



Professor emeritus Benjamin Lax of the MIT Department of Physics passed away on April 21, 2015, at the age of 99.

Born December 29, 1915, in Miskolc, Hungary, Lax came to New York City as a boy and received his bachelor's degree in mechanical engineering from the Cooper Union in 1941.

During World War II, Lax enlisted in the U.S. Army, where, after completing officer candidate school, he was assigned to the radar laboratory at MIT. While there, he was in charge of putting together a new radar system, dubbed "Little Abner," for field testing. After the end of the war, he pursued a PhD degree in plasma physics at MIT, receiving his degree in 1949.

He joined the MIT Lincoln Laboratory in 1951, later becoming head of the solid-state physics division in 1958, and associate director of the laboratory in 1964.

While at Lincoln Laboratory he made major contributions to the understanding of semiconductors, particularly through studies of their energy band structure using cyclotron resonance. He was also a co-inventor on an early patent for a semiconductor laser. His pioneering work on semiconductors provided an important foundation for the development of semiconductor technology now used in computers, cell phones, and other high-technology devices.

In the late 1950s, Lax led a group of scientists and engineers who proposed a high magnetic field laboratory on the MIT campus for research in solid-state physics, plasma physics, magnetic resonance spectroscopy, and engineering. The proposal was accepted, the National Magnet Laboratory (NML) was established in

Photo courtesy of Bachrach Photography

1960, and Lax served as its director for its first 21 years. He also became a professor in the MIT Department of Physics.

With Lax at the helm, the NML was an international leader in a remarkably wide range of research areas including the physics of solids in high magnetic fields; high magnetic-field nuclear magnetic resonance: studies of magnetic fields of the brain; and the use of high magnetic fields for plasma physics and magnetic-confinement fusion research. The first high magnetic field tokamak confinement device, Alcator, was constructed and operated at the NML; the results obtained were a major advance in nuclear fusion research. Eventually, the research on plasma physics and fusion energy required a larger facility, leading to the establishment of the MIT Plasma Science and Fusion Center.

Lax was also active in teaching and training PhD students. He was a mentor to many young research scientists who gained valuable experience conducting research at the NML and went on to become international leaders in the fields of solid-state and plasma physics. He retired from the directorship of the NML (by then renamed the Francis Bitter National Magnet Laboratory), in 1981, and from the physics faculty in 1986.

Among the honors and awards that he received were the Oliver E. Buckley Prize for condensed matter physics of the American Physical Society (1960) and election to the National Academy of Sciences. He was the author of over 300 journal articles, and co-author of a classic book on microwave ferrites and ferromagnetics.

Following his retirement from the Magnet Lab and the physics faculty, he stayed active in physics for more than 15 years, including acting as a consultant at the MIT Lincoln Lab.

Lax, who had lived in Newton, Massachusetts, was the husband of the late Blossom Cohen Lax, the father of Daniel R. Lax of Atlanta, and Robert M. Lax of Newton, and the grandfather of Rachael Lax Day.

This article was adapted from the original version published April 27, 2015, online at MIT News Around Campus newsoffice.mit.edu/campus.

Professor emeritus Malcolm W. P. "Woody" Strandberg dies at 96

Was a noted authority on microwave physics and the physics of biological systems.

by Department of Physics

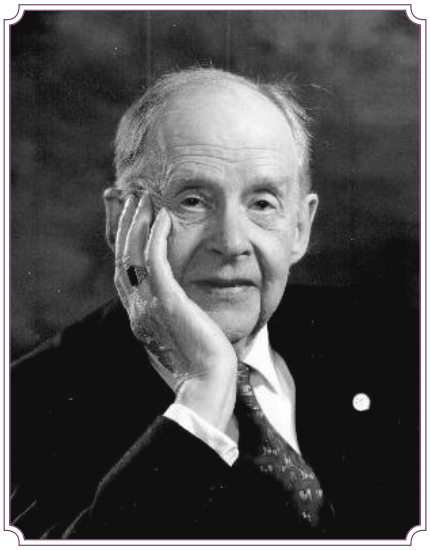


Photo courtesy of Bachrach Photography

Professor emeritus Malcolm W. P. "Woody" Strandberg of the MIT Department of Physics passed away on May 3, 2015, at the age of 96.

Born in Box Elder, Montana, on March 9, 1919, Strandberg received his BS degree *summa cum laude* from Harvard College in 1941, and his PhD degree from MIT in 1948. From 1941 to 1945 he was a staff member of the MIT Radiation Laboratory, engaged in advanced development work on microwave radar. Strandberg spent a year (November 1942 to September 1943) on detached duty in Great Malvern, England, as a visiting scientist, working on radar counter measures for the Royal Air Force. Back at MIT, he was a research assistant in physics from 1945 to 1948, appointed assistant professor of physics in 1948, associate professor in 1953, and professor of physics in 1960.

Strandberg was head of a research group in microwave spectroscopy and solid state physics in the MIT Research Laboratory of Electronics and published extensively in this field, including the book *Microwave*

"He was a great, if unconventional, teacher; he was not aloof, even if he left us to do the work ourselves. [He was] always ready with critical questions and comments."

— Bernard Burke,
MIT Professor of Physics Emeritus

Spectroscopy (1954). From 1965 onward his research interests included the physics of biological systems and he published extensively in that field.

Strandberg was elected a Fellow of the American Physical Society and the American Academy of Arts and Sciences in 1957; the American Association for the Advancement of Science, 1959; Institute of Radio Engineers (now the Institute of Electrical and Electronic Engineers), 1959; and Honorary Active Member of the New York Academy of Arts and Sciences, 1957.

He often served as a technical consultant to industry and government laboratories, and was the inventor on record and holder of ten patents.

Strandberg and his wife, the late Harriet Elisabeth Bennett, lived in Cambridge, MA, and were the parents of four children: Josiah, Susan Berrospe, Elisabeth Stith, and Malcolm.