

In Memoriam: Nicolaas Bloembergen, Professor Emeritus and Nobel Laureate

College of Optical Sciences
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Nicolaas "Nico" Bloembergen [1], Professor Emeritus of Optical Sciences and Nobel laureate, died Sept. 5 due to complications from a recent heart attack. He was 97.

Best known for receiving the **Nobel Prize in physics in 1981** [2], shared with Arthur L. Schawlow and Kai M. Siegbahn for their work in laser spectroscopy, Bloembergen was on the faculty at Harvard University from 1951 until he retired in 1990.

He began his career at the UA as a visiting scientist in 1996, and became professor of optical sciences in 2001.

Bloembergen's research encompassed nuclear and electronic magnetic resonance, solid state masers and lasers, nonlinear optics and spectroscopy, nonlinear polarizability, and extension of the laws of reflection and refraction.

"Nico was both an icon in the optics and physics world, as well as a warm, generous and caring person," said **Thomas L. Koch** [3], dean of the College of Optical Sciences. "We were very fortunate to have him as a faculty member here at OSC since 2001. He enriched our community in many ways, and we will miss him greatly."

Bloembergen was born on March 11, 1920, in Dordrecht, the Netherlands, the second child of six. His father was a chemical engineer and an executive at a chemical fertilizer company. His mother, who held an advanced degree in the teaching of French, devoted herself to their family. At an early age, Bloembergen's passion for science was apparent.

"My choice of physics was probably based from the fact that I found it the most difficult and challenging subject," he recalled in a memoir published on the Nobel website. "And I still do to this day. My maternal grandfather was a high school principal with a Ph.D. in mathematical physics. So there may be some hereditary factor as well."

Bloembergen studied physics at the University of Utrecht in 1938 and saw his first publication in 1940. The German occupation of Holland pushed him to make use of the continental academic system, and he managed to obtain the equivalent of a master's degree before the university closed in 1943.

With Europe devastated by World War II, Bloembergen headed to the United States, where he was accepted into Harvard and became Edward M. Purcell's first graduate student. Bloembergen quickly became involved with Purcell's early nuclear magnetic resonance device, six weeks after Purcell, H.C. Torrey and R.V. Pound had detected nuclear magnetic resonance in condensed matter. Their subsequent article, "**Relaxation Effects in Nuclear Magnetic Resonance Absorption**" [4], "is one of the most cited physics papers.

Bloembergen met his future wife, Huberta Deliana "Deli" Brink, in 1948 at a sailing camp organized by the University of Leiden science club. Already an excellent sailor, Bloembergen was designated one of the captains, while the crew rotated between boats. Finding him incredibly interesting, Brink made sure she was on his boat every day. The couple dated in Holland and then were separated when Bloembergen moved to the United States. Brink signed up for a student tourist trip to the U.S., took a detour to see Bloembergen, and was surprised with a proposal of marriage.

"She has been a source of light in my life," Bloembergen once said of his wife.

The Bloembergens became U.S. citizens in 1958.

Bloembergen is survived by his wife; their three children, Antonia, Brink and Juliana; and two grandchildren, Deliana and Nicolaas.

Read a **longer version** [5], including remembrances from colleagues, on the College of Optical Sciences website.

Source URL: <https://uaatwork.arizona.edu/lqp/memoriam-nicolaas-bloembergen-professor-emeritus-and-nobel-laureate>

Links

[1] <http://www.optics.arizona.edu/research/faculty/profile/nicolaas-bloembergen> [2] https://www.nobelprize.org/nobel_prizes/physics/laureates/1981/ [3] <http://www.optics.arizona.edu/research/faculty/profile/thomas-l-koch> [4] <https://journals.aps.org/pr/abstract/10.1103/PhysRev.73.679#fulltext> [5] <http://www.optics.arizona.edu/news-events/news/quicknews/memoriam-nicolaas-bloembergen>