

John Sampson Toll

John Sampson Toll, professor emeritus of physics at the University of Maryland, College Park, died in Bethesda, Maryland, on 15 July 2011 of respiratory failure. He had been a force in physics and in college and university administration for six decades.

Toll was born on 25 October 1923 in Denver, Colorado, and attended the Putney School in Vermont. He graduated from Yale University with highest honors and a BS in physics in 1944 and served in the US Navy from 1944 to 1946. He received his PhD in physics at Princeton University in 1952 under the guidance of John Wheeler, with a thesis titled "The dispersion relation for light and its application to problems involving electron pairs." During his time at Princeton he also was associate director of Project Matterhorn, a secret effort to control thermonuclear reactions. Toll's interests in highly theoretical aspects of physics were complemented by his practical skills and accomplishments in the real world of academic administration.

In 1953, at the age of 29, Toll was appointed chair of the then small and little-known physics and astronomy department of the University of Maryland. In the next 12 years he built it into a large and distinguished department and was an adviser to six PhD students. He also found time in 1956 to publish in *Physical Review* a masterful paper, "Causality and the dispersion relation: Logical foundations," based in part on his PhD thesis. Portions of the paper were reproduced in an appendix to Josef Jauch and Fritz Rohrlich's *The Theory of Photons and Electrons* (Addison-Wesley, 1955), one of the first books on modern quantum field theory.

Indeed, Toll's main contribution to theoretical physics is in quantum field theory. He studied the theory of dispersion relations, which follow from causality, the requirement that no signal can travel faster than light. He showed in great generality that causality implies analyticity properties of scattering amplitudes that lead to integral

relations between the real and imaginary parts of those amplitudes. The relations, in turn, lead to testable predictions in areas involving the strong interactions, where perturbation theory is inadequate.

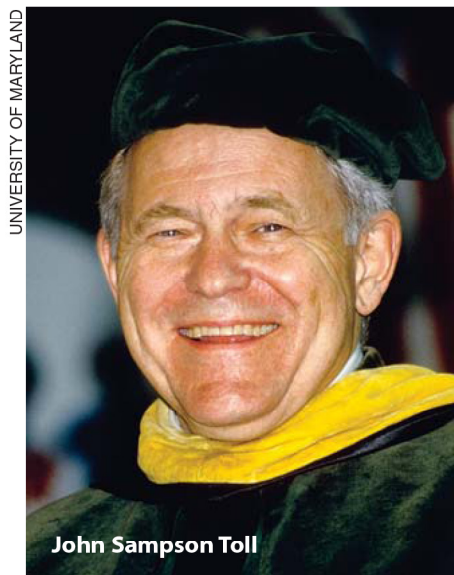
His work as an educational administrator spanned an enormous range: chair of physics and astronomy at Maryland, 1953–65; president of the State University of New York at Stony Brook, 1965–78; president of the University of Maryland, College Park, 1978–88; chancellor of the University of Maryland System, 1988–89; and president of the Universities Research Association, 1989–95, while it oversaw the US Superconducting Super Collider project. At age 71, Toll moved to Chestertown, Maryland, with his wife, Deborah Taintor Toll, to be president of Washington College; between 1995 and 2004 he resolved the college's budget crisis, immensely increased its endowment, and greatly improved its educational standing among small liberal arts colleges.

At Maryland, Toll inspired the faculty and was always supportive. In 1959, from a high-energy conference in Kiev, he telegraphed some of his latest recruits that their paper on the behavior of a K meson after capture by an atom had "put Maryland on the map in particle theory."

His enthusiasm for physics was unbounded. When some faculty were discussing hiring a research associate, he breezed into the room, plunked down a thick thesis, and announced with great glee: "I just got this from a PhD student of Arthur Wightman. It contains everything you've always wanted to know about the three-point function!"

One of Toll's methods for building up a high-quality department was to offer positions to newly minted PhDs from first-class graduate schools, especially Princeton. Those who joined the faculty included Richard Ferrell, George Snow, William MacDonald, and others who later became prominent in their fields. Another Toll method was to find promising graduate students by recruiting abroad. His motto was "to make Maryland the Berkeley of the East." When Toll went to Stony Brook in 1965, his first faculty appointment was Nobelist C. N. Yang.

Research and teaching were always on his mind. He did his utmost to protect faculty from administrative chores. He once called a faculty meeting to discuss some urgent issue and began by apologizing: "I'm sorry, I'm afraid I'm wasting thousands of dollars' worth of faculty time." While at Maryland, he



kept a cot in his office, dined on Metrecal diet shakes, and was on the job from early morning to late at night.

Toll always thought way ahead. When he was offered a position as physics chair at an Ivy League school, the Maryland administration asked what it could do to keep him. Legend has it that he reached into a drawer and presented the administration with a long essay, written years before, on what was needed to move the department to the next level of excellence.

Those of us who were fortunate enough to be associated with Toll during the explosive growth of Maryland's physics department in the 1950s and 1960s will never forget his dynamism and optimism, his unfailing kindness and courtesy, and his warm and generous heart.

Toll's middle name was Sampson. He was indeed mighty, but in contrast to his biblical forerunner, he will be remembered not for bringing down a temple but for building temples of learning and scholarship that will stand as monuments to his devotion to knowledge.

Joseph Sucher
Oscar Wallace Greenberg
University of Maryland
College Park ■

Letters are encouraged and should be sent by email to ptletters@aip.org (using your surname as the Subject line), or by standard mail to Letters, PHYSICS TODAY, American Center for Physics, One Physics Ellipse, College Park, MD 20740-3842. Please include your name, affiliation, mailing address, email address, and daytime phone number on your attachment or letter. You can also contact us online at <http://contact.physicstoday.org>. We reserve the right to edit submissions.