

**MEMORIAL RESOLUTION OF THE FACULTY
OF THE UNIVERSITY OF WISCONSIN-MADISON**

ON THE DEATH OF PROFESSOR EMERITUS DONALD WARD SMITH

Donald Ward Smith, professor emeritus of medical microbiology and immunology, passed away in Madison, Wisconsin, on Saturday, September 29, 2012, at the age of 86. He was born in Flint, Michigan in 1926. He served in the U.S. Navy and attended the Michigan College of Mining and Technology with support from the GI Bill. He received a BA degree in chemistry. Following graduation, he obtained a teaching assistantship in the bacteriology department at the University of Michigan in Ann Arbor. He joined the laboratory of Professor Harrison M. Randall, an international authority on the measurement of infrared spectra, who wished to apply infrared spectroscopy to the investigation of tuberculosis (TB). Don conducted studies of the comparative biochemistry of mycobacterial lipids and earned his PhD in medical microbiology in 1951. After two years as a post-doctoral fellow, Don accepted a faculty position in the Department of Medical Microbiology at the University of Wisconsin-Madison, where he rose through the ranks to professor (1965) and retired in 1991. At the time of his death, he was professor emeritus in the Department Medical Microbiology and Immunology.

In Madison, Don continued to study mycobacterial cell wall lipids with major funding from the National Tuberculosis Association. Interactions with Dr. Halfdan Mahler at the World Health Organization led Don to focus his research on the major public health issue of vaccine-induced immunity in TB. In the mid-1960s, Don theorized that the striking differences in the reported efficacy of various experimental TB vaccines was likely due to differences in the animal models used to test the vaccines. He organized a large international collaborative effort involving eight laboratories to evaluate six TB vaccines in 21 different animal models. Each laboratory ranked the six vaccines according to efficacy. No two animal models ranked the vaccines in the same order.

Don was convinced that, to evaluate potential human vaccines against tuberculosis, a uniform animal model replicating the natural infection in humans would be required. He pioneered a guinea pig model with pulmonary inhalation of small numbers of bacteria using an aerosol exposure chamber constructed in the engineering shops at the University of Wisconsin. Using the "Madison Chamber," Don and his group compared the infection of vaccinated and non-vaccinated guinea pigs. His work highlighted the initial infection and progression to disease, which involved dissemination of bacteria through the blood stream and reseeding of the lung, resulting in so-called secondary lesions. His findings had direct relevance for understanding the failure of BCG vaccine to protect against TB in parts of the world where frequent exposure to low-virulence clinical and/or environmental isolates interferes with vaccination.

The NIH funded Don's research for more than 30 years. His seminal contributions to the understanding of experimental TB in animal models continue to have a major impact on the field. His work continues to be highly cited, and the "Madison Chamber" is still widely used in laboratories around the world. He published 90 papers in peer-reviewed journals and presented his work at national and international meetings. He received many honors and awards for his research. He was an active member of the American Society for Microbiology and delivered the "Real-time Analysis of Host-Pathogen Interactions" lecture at the Las Vegas meeting in 1994.

Don was a dedicated and outstanding mentor to the many PhD students and post-doctoral fellows he trained during his career. He taught and led by example, conducting research with the highest standards. He valued the input from all the members of his research team. Everyone was included in the planning of experiments and in the discussion of research results. He often said that his success as a scientist was due to the fact that he surrounded himself with people who were smarter than he was. (We knew better.)

(continued)

Don's impact extended beyond those in his research group through teaching of Med Micro 740, a course in host-pathogen interactions that was required for graduate students in the medical microbiology graduate program. A demanding instructor, Don instilled in students an appreciation for experimental design and critical analysis of data. Don's approach to science exemplified the famous quote that is inscribed on a plaque on Bascom Hall: "We believe that the great state university of Wisconsin should ever encourage that continual and fearless sifting and winnowing by which alone the truth can be found." Don was truly loved by his students, and he considered his students "family." He was father, teacher and role model. He supported his students and let them grow. His legacy endures in our teaching, research and clinical efforts, but more importantly in our hearts, and the hearts of the countless students and colleagues, and others whose lives he touched and changed. We will be forever grateful.

Don is survived by his wife of 66 years, Marjean; children Janice Hayse, Steven Smith, Linda Layman, David Smith and Douglas Smith; grandchildren Katie, Michelle, Lizzie and Robbie Layman, Lydia Blethrow and Dinah Hayse; and great-grandchildren Claire, Ronin and Soren Blethrow.

MEMORIAL COMMITTEE

Charles Czuprynski
Jacquelyn Hank
Daniel Muller
Ronald Schell, chair
William Weidanz
Rodney Welch