

Bert L. Vallee 1919–2010

Bert Vallee, Emeritus Paul Cabot Professor of Harvard Medical School, passed away on May 7, 2010. He is survived by his wife of 65 years, Natalie Kugris Vallee, Emeritus Professor of Biology, Lesley College, Cambridge, Massachusetts. His scientific legacy spans over 60 years of research and teaching at the forefront of the biomedical sciences and with many landmark discoveries in inorganic chemical biology.

Bert Lester Vallee was born in Hemer (Westphalia), Germany but grew up in Luxembourg. He received a science degree from the University of Bern, Switzerland. In 1938, he became the first and only Fellow of the International Student Service of the League of United Nations. When he arrived in the United States, he found a sagacious adviser in Richard Courant, the founder of the New York University's Courant Institute of Mathematical Sciences and originally a colleague of David Hilbert at Göttingen. Vallee received his M.D. from the College of Medicine, New York University, in 1943. This medical training provided a focus for investigating diseases at the molecular level throughout his career, which began with a remarkable constellation of projects and people. He worked in a joint Harvard Medical School (HMS)-Massachusetts Institute of Technology (MIT) project on blood preservation, led by the founding fathers of biophysical protein chemistry, Edwin Cohn and John Edsall. At MIT, he trained in the internationally celebrated spectroscopy laboratory with John R. Loofbrow (Biophysics) and George R. Harrison (Physics). The interdisciplinary approach to science and technology he developed at these institutions prepared him well for his major interests in enzymology and the functions of transition metal ions in biology.

Vallee's particular passion was zinc biochemistry. He is credited for advancing the importance of this nutritionally essential element as this field grew from a single zinc protein to about 3000 human zinc proteins. Initially, he pioneered the development of spectroscopic methods for quantitative analysis of the very small amount of metal ions present in biological material. Later, when methods and instruments became readily available, he increasingly focused on solving biological problems. Fine examples are the discovery of the protein metallothionein and, together with R. J. P. Williams, the description of metal coordination in proteins as an entatic state. In 1954, he established the Biophysics Research Laboratory (HMS), which soon achieved international acclaim and attracted visitors and collaborators from all over the world. Vallee became Assistant Professor of Medicine in 1956 and Paul C. Cabot Professor of Biological Chemis-

try in 1965. As emeritus, he continued working as the Edgar M. Bronfman Distinguished Senior Professor from 1996 until the day before he passed away in his sleep.

Bert was 67 and at the peak of his productivity when I joined his Center for Biochemical and Biophysical Sciences and Medicine (HMS) as an assistant professor in 1986. He and his colleagues had just discovered angiogenin, a blood vessel-inducing tumor-promoting factor, and had shown that it is a member of the ribonuclease superfamily. Bert managed two laboratories in separate buildings with about 70 scientists. The laboratory was an El Dorado for excellent research and learning opportunities. Research was not restricted by disciplines; it covered molecular, cellular, and structural biology, and was supported by colleagues with expert knowledge in a wide range of fields. At that time, the principal activities were metallobiochemistry, alcohol (ethanol) metabolism, angiogenesis, and developmental biology.

Bert was incredibly dedicated to his laboratories and a "man for all seasons"—someone who remains unyielding and true to his beliefs even when confronted with enormous external pressures. He had an infallible instinct for attracting funding, including from the private sector, was highly innovative in implementing the newest and best methodology, and always was excited about new discoveries. His associates were taught the practice of science, the art of scholarly writing and lecturing, and they underwent uncompromising scrutiny. He saw to it that nothing in their Kinderstube would prevent scientific advancement. Hardly ever did he take "no" or "can't be done" for an answer, as he saw problems as opportunities rather than obstacles. Because I believe that Bert's writing epitomizes his aspirations, I cite from an obituary that he wrote for a colleague: "He was unbelievably well-informed on all fronts with an insatiable thirst for knowledge, a constant drive for understanding, and an irrepressible intent 'to get to the bottom of things' while questioning all premises. No effort was so great, no time so much, no challenge so excessive as to dissuade him." Bert had a fine sense of humor. He greatly enjoyed dining with his friends and had a passion for horseback riding in the awesome wilderness of the American Rockies.

His achievements include over 650 publications, membership in the National Academy of Sciences, honorary university degrees and professorships worldwide, as well as the training of scores of postdoctoral fellows. Among his awards are the Linderstrøm-Lang Medal, Willard Gibbs Medal (American Chemical Society), and the William C. Rose Award (American Society for Biochemistry and Molecular Biology).

Bert spent the last decade of his life starting and developing his and his wife's foundation



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(www.valeefoundation.org). The Vallee foundation was conceived to cultivate, refine, and implement a shared and global vision about originality, creativity, and academic leadership in science beyond the bounds of disciplines. It has the goal to sponsor unique intellectual experiences for accomplished scientists in short exchange programs between distinct institutions of higher learning. In this way, new frontiers can be explored and new knowledge

generated. Through his foundation, Bert's ideals and scientific contributions live on.

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