Noel R. Rose 1927–2020

We are profoundly saddened by the passing of Noel Rose, a pioneer in the study of autoimmune diseases, on 30 July 2020, in Boston. Noel spent most of his career at Johns Hopkins Medical School but initiated his seminal studies at the University of Buffalo. Graduating from Yale in 1948 in three years, he went on to the University of Pennsylvania to earn his PhD in 1951. He subsequently moved to the State University of New York at Buffalo as an instructor, where he began his studies under the aegis of Dr. Ernest Witebsky. He taught at Buffalo and went on to earn an MD degree there! He served on the faculty of Wayne State University in Detroit, then moved to Johns Hopkins Medical School in 1982, first as chair of the Department of Immunology and Infectious Diseases and later as chair of the Pathology Department. Noel directed the Bloomberg School of Public Health there for two decades. He played a major role as a mentor to generations of scientists, not only as chair at Hopkins but also as a principal advisor to the NIH on autoimmunity and autoimmune disease research.

Noel was a pioneer in immunology and is deservedly called the ‘father’ of autoimmunity research. Using thyroglobulin (Tg) as a model antigen, Noel immunized rabbits with Tg from diverse species. Despite being relatively conserved in structure, all rabbits responded to these ‘foreign’ Tg antigens. Undeterred, he isolated rabbit Tg and immunized rabbits with this isologous, and even autologous, protein. These rabbits responded with antibody production, thus overturning the widely held concept of ‘horror autotoxicus,’ loosely translated as “fear of poisoning oneself”, which caused a paradigm shift in immunology. As you can imagine, he had difficulty in getting his results published. Nonetheless, his studies launched further research on autoimmune diseases, and he remained a pioneer of the field for the duration of his career. Not surprisingly, he possessed a uniquely broad perspective and depth of knowledge in autoimmune diseases. Noel’s later work at Johns Hopkins revealed some of the key immune mechanisms by which iodine can contribute to the autoimmune processes in thyroiditis.

Credit: Pathology Department, Johns Hopkins University

Based on the knowledge that infectious agents can trigger autoimmune reactivity, Noel and his colleagues also made pivotal contributions to our understanding of the pathogenesis of different manifestations of myocarditis. Using animal models in which heart disease was induced by infection with coxsackievirus B3 or immunization with cardiac myosin, Noel and colleagues systematically unraveled the cellular and molecular details underlying the progression of inflammatory myocarditis to chronic autoimmune myocarditis. This work brought special attention to the role of eosinophils in autoimmune myocarditis as well as the likely association of eosinophilic diseases with autoimmune diseases. Another notable aspect of their work was to define the roles of macrophages and type 1 helper T (T_H1) cells in the pathogenesis of autoimmune myocarditis, which were previously underappreciated due to the focus on T_H17 cells in the disease process. This highly innovative body of work in animal models is now helping in new studies of the disease progression process in patients with myocarditis, which in turn could lead to specific and improved therapies for this group of diseases.

Over the course of his career, Noel published close to 900 scientific papers and authored or edited more than 20 books. His seminal contributions to science were recognized by the numerous awards that he received, nationally and internationally, including the Founder’s Distinguished Service Award from the American Society for Microbiology, the Presidential Award from the Clinical Immunology Society

and the Golden Goose Award from the American Association for the Advancement of Science, to name a few.

As director of the WHO Collaborating Center for Autoimmune Disorders and chair of the NIH Autoimmune Diseases Coordinating Committee, Noel was a strong public health advocate for autoimmunity research. He served on numerous NIH panels and advisory committees and worked to bring the burden of autoimmune disease to the attention of Congressional and NIH funding bodies. In this, he emphasized the impact of autoimmune diseases on women’s health, as women are disproportionately affected by this group of diseases. Noel contributed not only to women’s health but was also personally active in promoting the careers of women scientists, many of whom benefitted from his mentorship, support and encouragement.

What stood out about Noel Rose, besides his wisdom and his all-encompassing knowledge of autoimmunity, were his modesty and his kindness. He was an enduring presence in our professional lives and it seemed that he would always be there — friend, mentor and colleague — as he continued to be an active player in the field. Just a few weeks ago, we received his invitation to speak at a (virtual, this time) American Autoimmune Diseases Related Association workshop that he was co-organizing next year. His sudden passing was a tremendous shock. He will be greatly missed.

He is survived by his beloved wife of 69 years, Deborah Rose, who often appeared by his side, hand-in-hand, at scientific meetings, and by their children and grandchildren.

David W. Scott^{1✉}, Rachel R. Caspi² and Kamal D. Moudgil³

¹Department of Medicine, Uniformed Services University, Bethesda, MD, USA. ²National Eye Institute, National Institutes of Health, Bethesda, MD, USA. ³Department of Microbiology and Immunology, University of Maryland School of Medicine, Baltimore, MD, USA.

✉e-mail: David.scott@usuhs.edu

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