

Immunity

By **William E. Paul**, Johns Hopkins University Press, Baltimore, USA, 2015, ISBN: 978-1-42141-801-8 (hardback), ISBN: 978-1-42141-802-5 (ebook), Pages: 280; Price: US \$29.95

Immunity, written by William E. Paul, MD, is a unique synthesis of autobiography and perspective on the history of immunology with easy-to-follow and informative explanations of key concepts. The author's death occurred in September 2015, just before publication of this book, his final manuscript. His discovery of interleukin-4 and his experiences as head of the Office of AIDS Research at the National Institutes of Health (Bethesda, MD, USA) are among the author's many outstanding achievements chronicled in the book. One chapter is devoted to Dr. Paul's previously described concept of the laws of immunology: universality, the idea that cells and products of the immune system are capable of recognizing an unlimited array of substances; tolerance, the notion that the response to self-antigens is controlled or eliminated; and appropriateness, the concept that the immune response is appropriate to the inducing pathogen.

Several figures in the book provide additional insights into this publication's distinctiveness: a photograph of one of Dr. Paul's mentors, Baruj Benacerraf, receiving the Nobel Prize; another photograph of a German 200-mark note featuring Paul Ehrlich, a Nobel Prize winner for his work in immunology; a photograph showing an Austrian 1,000-schilling note with the image of Karl Landsteiner, Nobel Prize winner for discovery of the immunology of blood groups; a diagram illustrating a peptide bound into the groove of a class I major histocompatibility complex molecule; and an electron microphotograph of a dendritic cell with adherent lymphocytes. The author was a major participant in remarkable advances in our understanding of immunology. For example, he states, "My professor of microbiology... was deeply skeptical about the function of lymphocytes.... Lymphocytes are so unprepossessing in appearance that many believed their chief function was to serve as nutrients for cells that were thought to be more important in antimicrobial responses...." Dr. Paul provides details of his discovery of the molecular structure and functions of interleukin-4, a critical regulatory factor for lymphocytes.

Furthermore, Dr. Paul offers insights on recent developments, such as the hygiene hypothesis of the genesis of allergic disease; inflammasomes; colony collapse disorder in honeybees; and clinical trials with dupilumab. He discusses these issues with the same profundity and clarity that he provides on his work in the frontiers of immunologic research early in his distinguished career.

His response to the AIDS crisis provides an inspiring perspective for public health officials confronted with urgent challenges. He states, "In the end, I concluded that I had to take on the responsibility. The AIDS epidemic was such that one really didn't have a choice.... I was determined that while the planning process had to represent the best thinking in the field, it could not be too proscriptive. We didn't want to quash creativity, without which progress was sure to be hampered." Dr. Paul is recognized as being an important catalyst in the development of effective antiviral therapy and has been called a hero of the AIDS epidemic.

Few readers will not be impressed by Dr. Paul's energy, enthusiasm, and innovative spirit. This book will be relished by those who are captivated by the history of modern biologic and medical science.

Theodore M. Lee

Author affiliations: Peachtree Allergy and Asthma Clinic, PC, and Emory University School of Medicine, Atlanta, Georgia, USA

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Address for correspondence: Theodore M. Lee, Peachtree Allergy & Asthma Clinic, 1800 Peachtree St NW, Ste 720, Atlanta, GA 30309, USA; email: tedmlee@aol.com

One Health: People, Animals, and the Environment

Edited by **Ronald M. Atlas and Stanley Maloy**, ASM Press, Washington, DC, 2014, ISBN: 978-1-55581842-5 (paperback); 978-1-55581843-2 (ebook), Pages: 318; Price: US \$90.00

The One Health concept recognizes that the health of humans is connected to the health of animals and the environment. An interdisciplinary One Health approach involving human, animal, and environmental health partners worldwide is critical to address current public health issues, which include emerging infectious and zoonotic diseases. The book *One Health: People, Animals, and the Environment* reviews core concepts of One Health and highlights key One Health issues of public health importance.

The book comprises 5 sections. The first section covers the need for a One Health approach and reasons such an approach is important. Topics include the human-animal interface, ecologic approaches to studying zoonoses, and the role of wildlife in emerging infectious diseases. The second section covers zoonotic and environmental

drivers of emerging infectious diseases. This section includes an overview of the interconnectedness of human and animal pathogens for several timely One Health events and describes the emergence of influenza viruses across the species barrier; rabies control; foodborne diseases and transmission among humans, animals, and plants; environmental reservoirs of cholera; and the role of human activity on the spread of white-nose syndrome in bats. The rest of the book is devoted to causes behind the emergence of antimicrobial drug resistance and the need for disease surveillance that can identify pathogens crossing animal–human interfaces to provide early warning of new public health challenges and describes new technologies and approaches for public health surveillance, and the challenge of making One Health a reality. The editors share several examples of successful applications of the One Health approach to highlight the impact of collaboration between human, animal, and environmental health partners. Remaining challenges of implementing a One Health approach are also presented in the context of thwarting the threat of emerging infectious diseases. Throughout the book, the editors provide case histories of notable recent zoonotic infections, which provide real-world examples of implementing a One Health approach for diseases such as West Nile virus disease, hantavirus, Lyme disease, and severe acute respiratory syndrome.

The availability of texts describing the One Health approach is important, and this book provides a concise overview of One Health from the infectious disease perspective. Although this book focuses on the role of One Health specifically for emerging infectious and zoonotic diseases, it is a valuable introduction to the field of One Health. The book applies to a wide audience—physicians, veterinarians, environmental scientists, public health officials, policy makers, and students. It is a useful resource for those who want a better understanding of One Health and their role in the One Health movement. The One Health concept continues to gain recognition as a critical tool to address public health issues at the animal–human–ecosystem interface to have the biggest impact on improving health for all. In the words of the editors, “the One Health approach is simply too important to ignore.”

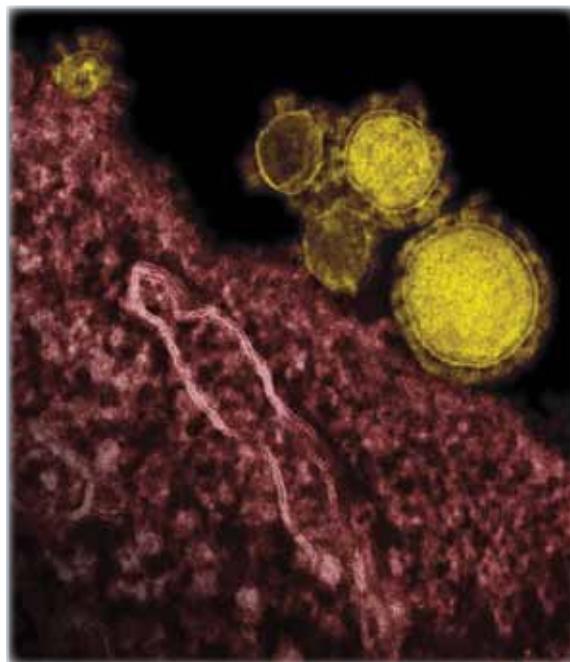
Casey Barton Behravesh

Author affiliation: Centers for Disease Control and Prevention, Atlanta, Georgia, USA

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Address for correspondence: Casey Barton Behravesh, Centers for Disease Control and Prevention, 1600 Clifton Rd NE, Mailstop C12, Atlanta, GA 30329, USA; email: CBartonBehravesh@cdc.gov

Unraveling the Mysteries of Middle East Respiratory Syndrome Coronavirus



**Dr. Aron Hall,
a CDC coronavirus
epidemiologist, discusses
Middle East Respiratory
Syndrome Coronavirus**



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