THE IMMUNE RESPONSE TO INFECTION
Front cover:
Macrophage in the process of engulfing Mycobacterium tuberculosis organisms.

Back cover:
Left (red): Helicobacter pylori; right (blue): Neisseria gonorrhoeae attached to epithelial cells.

All three photos courtesy of Volker Brinkmann and Stefan H.E. Kaufmann (Max Planck Institute for Infection Biology, Berlin, Germany).
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Preface

“Excellent textbooks and review volumes on immunology, virology, parasitology, medical microbiology, and infectious diseases abound. So what gap is this book aimed to fill?”

This question was posed in the preface of the ASM Press book *Immunology of Infectious Diseases* (edited by Stefan H. E. Kaufmann, Alan Sher, and Rafi Ahmed), published in 2002. The explanation provided then still holds true today. Microbiology and immunology, despite their common roots, have matured as distinct disciplines, and infectious diseases are too often viewed from the perspective of either the microbe or the host. A more holistic approach was provided by that book and a second one published by ASM Press in 2004, *The Innate Immune Response to Infection* (edited by Stefan H. E. Kaufmann, Ruslan Medzhitov, and Siamon Gordon).

These books now urgently need updating because the knowledge base in immunology, as well as with all types of infectious agents, has expanded dramatically. The present volume, *The Immune Response to Infection*, covers all aspects of innate and adaptive immune mechanisms and describes how they interact with pathogens of different types, resulting in either success or failure to control infection and clinical disease. This volume also emphasizes how our understanding of mechanistic events is leading the design and production of more effective prophylactic and therapeutic control measures for infectious agents.

Most of the chapters here consider host-pathogen interactions in the context of the broad divisions of the microbial world—either viruses, bacteria, or parasites—and do not confine their discussion to any individual pathogen. The exceptions are for the agents of the “big three” infectious diseases—HIV/AIDS, tuberculosis, and malaria—which account for almost one-third of human deaths from infections, as well as influenza, which is the focus of much media and public attention. We have also included chapters that consider the detrimental sequelae of infection that are an indirect result of the infectious process, such as chronic inflammation, cancer, and autoimmunity. Finally, all of the chapters emphasize the special attributes that make pathogens difficult to control, and they appraise the prospects of current and future prophylactic and therapeutic vaccines.

We hope that this book, which comprises the rich variety of aspects of infection and immunity, helps to further promote the important relationship between immunology and medical microbiology. We express our deep appreciation to the editorial staff of ASM Press, in particular, Greg Payne and Ellie Tupper. We also want to thank our associates Mary Louise Grossman and Lisa Washington for their secretarial help and for their wonderful dedication. Most of all, we thank our colleagues for sacrificing so much of their valuable time to generously share their outstanding expertise with us and with the readers of this book.

STEVEN H. E. KAUFMANN, BARRY T. ROUSE, AND DAVID L. SACKS
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