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PREFACE

Bliss was it in that dawn to be alive . . .
William Wordsworth, French Revolution as it appeared to enthusiasts at its commencement

The genomic era in bacteriology began when scientists at the Institute for Genomic Research in Maryland published the first two complete bacterial genome sequences in 1995. In the intervening 10 or more years, genome sequencing has exerted a stunning influence on bacteriology in general and the study of bacterial pathogenesis in particular. It has been a thrilling time to be in bacteriology. An apt analogy is with the space program, in particular, with the grand tour of the outer solar system during the 1970s and 1980s. Just as the two Voyager probes turned smudges glimpsed hazily through the telescope into newly mapped worlds, so bacterial genomics has allowed us to view the inner workings of our microscopic companions. Many of humankind’s most fearful microbial adversaries—from the agents of the black death to the white plague—have now been captured in silico. We now grapple with them on our desktop computers, as well as in the laboratory. Where once we saw through a glass darkly, we now see face to face!

Indeed, now that we have genome sequences from almost every significant bacterial pathogen of humans, plants, and animals, it is scarcely possible to imagine the study of bacterial pathogenesis without the backcloth of genomics. The ready availability of genome sequences pervades every corner of our discipline and underpins the steady incremental accumulation of new information on each bacterial pathogen. This book stands as a monument to this stunning success of “bacterial pathogenomics.” We have enlisted the contributions from over two dozen scientists from around the world to highlight the revolutionary contribution of genomics to the study of pathogenic bacteria and bacterial infection. We have adopted a twin-track approach: some chapters in this book survey the impact of genomics on our understanding of key taxonomic groups of pathogens, and others emphasize themes that cut across taxonomic boundaries,
integrating the impact of genomics on topics as diverse as bioterrorism, microbial ecology, bacterial evolution, bacterial protein secretion, and bacterial adaptations to pathogenic lifestyles. We hope that all readers, from student to professor, will gain new insights into pathogenomics from this book and will close its pages with an enthusiasm for this subject that will endure well into the second decade of bacteriology’s postgenomic era!

MARK PALLEN

March 2007
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