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METHODS IN MOLECULAR BIOLOGY™

# Genomics, Proteomics, and Clinical Bacteriology

*Methods and Reviews*

Edited by

**Neil Woodford**

and

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# Preface

Gazing into crystal balls is beyond the expertise of most scientists. Yet, as we look further into the 21st century, one does not have to be Nostradamus to predict that the current genomics and proteomics "revolution" will have an immense impact on medical bacteriology. This impact is already being realized in many academic departments, and although encroachment on routine diagnostic bacteriology, particularly in the hospital setting, is likely to occur at a slower pace, it remains nonetheless inevitable. Therefore, it is important that no one working in bacteriology should find themselves distanced from these fundamental developments. The involvement of all clinical bacteriologists is essential if the significant achievements of genome sequencing and analysis are to be turned into tangible advances, with resulting benefits for patient care and management. It is our hope that *Genomics, Proteomics, and Clinical Bacteriology: Methods and Reviews* will play a part in bringing such a development to fruition.

The advances in genomics and proteomics have already given us frequent opportunities to reassess our knowledge and understanding of established bacterial adversaries, and have provided us with the means to identify new foes. The new knowledge gained is enabling us to reconsider, for example, our concepts of bacterial pathogenicity, phylogeny and novel targets for antibacterial chemotherapy. These topics, and others, are considered in *Genomics, Proteomics, and Clinical Bacteriology: Methods and Reviews*.

We have convened a group of internationally renowned authors, all of whom have prepared state-of-the-art reviews. Although we admit the choice of topics was influenced by personal interests, we nonetheless believe it to be fairly comprehensive. The 16 chapters have been divided loosely into three sections: Principles of Bacterial Genomics (Chapters 1–6); Application of Genomics to Diagnostic Bacteriology (Chapters 7–10); and Interrogating Bacterial Genomes (Chapters 11–16). We have attempted to make the chapters easy to read, and hope that they will not be considered esoteric. Throughout this project, our intention was to create a volume that would be beneficial to everyone working in medical bacteriology, whatever their background. We also hope it would serve as a natural successor to our previous volume, *Molecular Bacteriology: Protocols and Clinical Applications*, published by Humana Press in 1998.

It has been a fascinating experience editing the volume, and we hope that our readers will learn as much as we did.

**Neil Woodford**  
**Alan Johnson**

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