
Contents

	List of Contributors	v
	Preface	xi
1	Metagenomics and Beyond: Current Approaches and Integration with Complementary Technologies	1
	Tracy L. Meiring, Rolene Bauer, Ilana Scheepers, Colin Ohlhoff, Marla I. Tuffin and Donald A. Cowan	
2	Bacterial Genealogy: Not Dead	21
	Robert L. Dorit and Margaret A. Riley	
3	Viral Metagenomics and the Regulation of Prokaryotic Communities	33
	Fernando Santos and Josefa Antón	
4	Functional Metagenomics and Systems Biology: Understanding the Human Organismal Complexity in Disease and Health	49
	Liping Zhao and Jian Shen	
5	Next-Generation Sequencing Approaches to Metagenomics	63
	John Walshaw, Graham J. Etherington and Dan MacLean	
6	Stable Isotope Probing: Uses in Metagenomics	89
	Ondrej Uhlík, Lucie Musilová, Katerina Demnerová, Tomas Macek and Martina Macková	
7	DNA Sequencing of Uncultured Microbes from Single Cells	99
	Roger S. Lasken, Mary-Jane Lombardo, Mark Novotny, Joyclyn Yee-Greenbaum and Rashel V. Grindberg	
8	A Community Cyberinfrastructure Resource for Metagenomics Research: CAMERA 2.0	119
	Jing Chen, Shulei Sun, Weizhong Li and John C. Wooley	
9	Metagenomics for the Identification of Novel Viruses	145
	Vincent Montoya, Charles Y. Chiu and Patrick Tang	
10	Metagenomics Applied to Arbuscular Mycorrhizal Fungal Communities	161
	Valeria Bianciotto, Erica Lumini, Alberto Orgiazzi, Roberto Borriello and Paola Bonfante	

11	The Human Microbiome: Exploring and Manipulating our Microbial Selves Corinne F. Maurice and Peter J. Turnbaugh	179
12	Metagenomics and Integrative ‘-omics’ Technologies in Microbial Bioremediation: Current Trends and Potential Applications Varun Shah, Kunal Jain, Chirayu Desai and Datta Madamwar	211
13	<i>Escherichia coli</i> Host Engineering for Efficient Metagenomic Enzyme Discovery Reia Hosokawa-Okamoto and Kentaro Miyazaki	241
14	Recent Contributions of Metagenomics to Studies on Quorum-sensing and Plant–Pathogen Interactions Denis Faure, Mélanie Tannières, Samuel Mondy and Yves Dessaux	253
15	Metagenomics Analysis of Below-ground Microbial Communities using Microarrays Joy D. Van Nostrand, Zhili He and Jizhong Zhou	265
	Topic Index	289
	Taxonomic Index	293
	Colour plate	A1