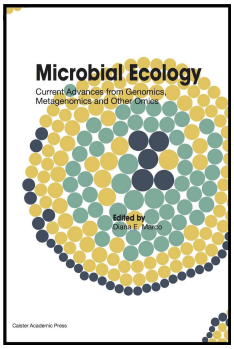
Microbial Ecology

Current Advances from Genomics, Metagenomics and Other Omics



Edited by: **Diana Marco**
National University of Córdoba and CONICET, Argentina

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The development of metagenomics, metatranscriptomics, metaproteomics, metametabolomics and other related methods has made a significant contribution to the understanding of the complexity of the interactions among microorganisms and of the interaction of microorganisms with their environment and with other organisms. The field of microbial ecology is experiencing a new era of discovery leading to a greater understanding of the patterns, processes and mechanisms governing the structure and dynamics of microbiomes.

This book presents selected recent hot-topics in the application of advanced omics methods to the field of microbial ecology. Written by specialist scientists under the experienced editorial guidance of Diana Marco, the book covers both the theoretical and applied aspects of microbial ecology. Topics include the investigation of the patterns, processes and mechanisms in microbial ecology, microbiome sequencing, soil microbiology, insular microbiogeography, sediment microbial communities, and wildlife microbial genomics and endocrinology.

This timely volume is indispensable for scientific researchers, educators and advanced students interested in approaching the microbial ecology field by utilizing the most recent and advanced omics methods. The book is invaluable for everyone working in the field of microbial ecology and is recommended reading for all microbiologists.

Chapter 1. Patterns, Processes and Mechanisms in Microbial Ecology: Contributions from the 'Omics' *(Diana E. Marco)*
Chapter 2. Contamination Issues in Microbiome Sequencing Studies *(Sharon Bewick, David Karig and William F. Fagan)*
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Chapter 4. Insular Microbiogeography: Three Pathogens as Exemplars *(James H. Kaufman, Christopher A. Elkins, Matthew Davis, Allison M. Weis, Bihua C. Huang, Mark K. Mammel, Isha R. Patel, Kristen L. Beck, Stefan Edlund, David Chambliss, Judith Douglas, Simone Bianco, Mark Kunitomi and Bart C. Weimer)*
Chapter 5. Contribution of Metagenomics to our Understanding of Microbial Processes in Antarctic and Sub-Antarctic Coastal Sediments *(Mariana Lozada, Hebe M. Dionisi, Fernando E. Espínola, Priscila A. Calderoli, Matías A. Musumeci, Jessica A. González, José L. López, Walter P. MacCormack and Janet K. Jansson)*
Chapter 6. Wildlife Microbial Genomics and Endocrinology *(Holly L. Lutz, Sophia Carryl and Rachel M. Santymire)*

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