

MICROBIAL BIOFILMS, SECOND EDITION

An examination of the research and translational applications to prevent and treat biofilm-associated diseases

In the decade since the first edition of *Microbial Biofilms* was published, the interest in this field has expanded, spurring breakthrough research that has advanced the treatment of biofilm-associated diseases. This second edition takes the reader on an exciting, extensive review of bacterial and fungal biofilms, ranging from basic molecular interactions to innovative therapies, with particular emphasis on the division of labor in biofilms, new approaches to combat the threat of microbial biofilms, and how biofilms evade the host defense.

Chapters written by established investigators cover recent findings, and contributions from investigators new to the field provide unique and fresh insights. Specifically, *Microbial Biofilms* provides

- state-of-the-art research in the field of bacterial and fungal biofilms
- detailed descriptions of the *in vitro* and *in vivo* models available to evaluate microbial biofilms
- future areas of research and their translational and clinical applications

Microbial Biofilms is a useful reference for researchers and clinicians. It will also provide insight into the dynamic field of microbial biofilms for graduate and postgraduate students.

"Biofilms influence human health and agriculture, and sustain diverse ecosystems. This second edition of Microbial Biofilms provides a masterful overview of critical topics central to fungal and bacterial biofilms by celebrated experts in the field. It is a must read for any professional seeking basic or advanced knowledge of microbial biofilms."

— David S. Perlin, Professor and Executive Director
Public Health Research Institute, New Jersey Medical School-Rutgers University



Mahmoud A. Ghannoum is a Professor in the Department of Dermatology at Case Western Reserve University and University Hospitals Case Medical Center and Director of the Center for Medical Mycology. Dr. Ghannoum's investigations include the biology, pathogenesis, and resistance of clinically important fungi *Candida*, *Aspergillus*, and *Cryptococcus*, and his work

has recently focused on the oral microbiome, fungal species, and human disease. He has published more than 300 peer-reviewed articles in the field of biofilms, microbial pathogenesis, and preclinical *in vitro* and *in vivo* evaluations of antimicrobials.



Pranab Mukherjee is an Assistant Professor in the Department of Dermatology at Case Western Reserve University. Dr. Mukherjee has extensive experience in fungal pathogenesis and microbial biofilms, including analyses of their biochemical and molecular pathways using systems biology approaches. He also studies the human microbiome (bacteriome and mycobiome) in

health and disease, including HIV-infection, corneal infections, inflammatory bowel disease, eczema, and psoriasis. He advises pharmaceutical companies in antifungal drug development.



Marvin Whiteley is the Director of the Center for Infectious Disease and a fellow of the John Ring LaMontagne Chair in Infectious Diseases and Global Health at the University of Texas at Austin. Dr. Whiteley's research focuses on understanding how microbes within infection sites cooperate to cause disease.

Matthew Parsek is a Professor of Microbiology at the University of Washington, School of Medicine at Seattle. Dr. Parsek's research focuses on microbial community behaviors and their relationship to disease.



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