

MOLECULAR GENETICS OF **MYCOBACTERIA**

2ND EDITION

*A comprehensive collection of perspectives
by experts in mycobacterial molecular biology*

Mycobacterium tuberculosis causes one in four avoidable deaths in the developing world and kills more adults than malaria, AIDS, and all tropical diseases combined. Tuberculosis has been named a global health emergency by the World Health Organization, a distinction no other disease has received. Although the study of mycobacterial genetics has expanded dramatically, with new investigations into mycobacterial growth, replication, metabolism, physiology, drug susceptibility, and virulence, most of the problems in tuberculosis control that existed in 2000 remain today.

Advances in our understanding of mycobacterial genetics have been reflected in exciting recent developments. New diagnostic approaches can identify drug resistance within a few hours, promising new drugs are progressing through the pipeline and into the clinic, and a range of newly developed vaccines are being evaluated. It is an exciting time as the fruits of 30 years of intensive genetic investigation are finally beginning to emerge.

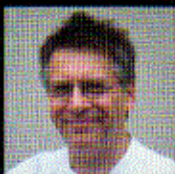
Written by leading experts in the field, *Molecular Genetics of Mycobacteria*, Second Edition

- Discusses key areas of current research in mycobacterial genetics
- Explains the genetics of the physiology, metabolism, and drug sensitivities of *M. tuberculosis*
- Presents genetic approaches for manipulating *M. tuberculosis*

This book is an invaluable resource for anyone interested in the molecular genetics and molecular biology of mycobacteria.

"Molecular Genetics of Mycobacteria is an extraordinary book. It includes chapters from virtually every major scientific contributor to the genetic understanding of mycobacteria. For anyone entering the field or seeking to learn about fundamental genetic and molecular aspects of mycobacteria, this book is a necessity."

Barry R. Bloom,
Harvard University
Distinguished Service
Professor and Former Dean,
Harvard School of Public Health

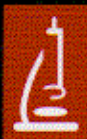


GRAHAM F. HATFULL, PH.D., is a professor of biological sciences, Eberly Family Professor of Biotechnology, and a Howard Hughes Medical Institute Professor at the University of Pittsburgh. Dr. Hatfull leads integrated research and education programs to discover and sequence new phages and uses phage genomic information to develop tools to manipulate and understand *M. tuberculosis*, including integration-proficient vectors and recombineering systems. Dr. Hatfull began work on the mycobacteriophages in 1988 and has collaborated with Dr. Jacobs since that time, leading to collaborative grant funding and many coauthored publications.



WILLIAM R. JACOBS, JR., PH.D., is a professor of microbiology and immunology, College of Medicine and an investigator with the Howard Hughes Medical Institute. Dr. Jacobs has studied the genetics of leprosy and tuberculosis, for the last 34 years. Dr. Jacobs' research initially focused on the mechanisms of gene transfer in mycobacteria, particularly *M. smegmatis* and *M. tuberculosis*. Current research focuses on the persistence phenotype of *M. tuberculosis* in order to develop improved chemotherapies and vaccines. Dr. Jacobs and Dr. Hatfull have collaborated on the discovery and genetic analysis of mycobacteriophages, which has led to improved phage vectors as tools for clarifying the molecular biology of *M. tuberculosis*.

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