

Preface

This is a book with an attitude, a compelling one we hope. We assert that the microbial world does not just comprise a large taxonomic group of living things, but that microbiology influences the attributes of all living things on our planet, and many of the non-living too. Microbes make up about half the mass of everything alive, and they make and unmake our landscape and our atmosphere. They matter for our very existence. Thus, as much as anything, microbiology is a frame of mind.

As with the previous edition, our goal is to emphasize concepts, not facts. Throughout the book, we integrate key concepts, learning outcomes, and fundamental statements from the *ASM Recommended Curriculum Guidelines for Undergraduate Microbiology Education*. Using case studies to open each chapter, we tell stories about the way microbes are put together, what they must do to grow and survive, and how they interact with all living things. The new edition no longer includes a separate chapter about evolution but, rather, infuses each of the chapters with descriptive tales of microbes' evolutionary journey. In addition to updating a lot of the material, we also expanded the microbial diversity, ecology, and pathogenesis content by adding several new chapters and including extensive visual aids throughout. Importantly, we stimulate scientific thinking and encourage students to apply microbiology knowledge and skills throughout the text and with the Supplemental Activities and Resources provided with each chapter.

Our approach is far from encyclopedic, although this is a fairly thick book because there is so much to tell about microbes. Amidst the exciting advances in the microbial sciences, we have kept to our guns, using a conceptual framework based on the dogged belief that all living things, microbes included, can only be understood in the light of their evolution and ecology. For those of you who will enter the health professions, keep in mind that the interaction between host and pathogen is entirely an ecological one. For those who pursue other interests, the same worldview holds. All microbial interactions play out in the environment. In the words of the Spanish philosopher Ortega y Gasset, "I am I and my circumstances."

Indeed, the microbial world is the only world we humans inhabit. Please enjoy it.

Acknowledgments

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Our first retreat was followed by two more in Academy Village (Tucson, Arizona), gatherings that served as catalysts to bring the team project to successful completion. Our gratitude goes to our hosts at the Academy Village, Betty, Erika, and Bernd, for their generosity and hospitality. Their good humor and friendship made the long working hours easier to bear.

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