

PREFACE

Developed for use in an undergraduate microbiology laboratory course, this third edition of *Laboratory Exercises in Microbiology* meets the needs of students majoring in diverse programs such as allied health or biological sciences. The manual contains a variety of interactive activities and experiments that teach students the basic concepts of microbiology and support the content covered during lectures.

APPROACH AND ORGANIZATION

We are firmly committed to the idea that a microbiology laboratory—and the manual used for it—should extend learning experience for students, and not be a repeat or reproduction of lecture material. With this in mind we made every effort to avoid duplicating text and illustrations that will be found in their lecture text. We have minimized the amount of textual material for students to read at the start of the laboratory period. Rather, labs are introduced in a clear and concise manner and maintain a student-friendly tone. This leaves plenty of time for students to engage in activities and experiments that promote a deeper understanding of microbiological concepts and principles, to answer questions, and to write up lab reports.

The 27 Exercises are divided into five parts: General Microscopy and Aseptic Technique; Microbial Morphology, Differential Stains; Microbial Control and Biochemistry; Medical Microbiology; and Food and Environmental Microbiology. A Photographic Atlas of 67 full-color plates depicting laboratory techniques and results, and numerous micrographs, is included.

NEW FEATURES OF THE THIRD EDITION

- **Revised Exercises.** The exercise on serology (Exercise 18) now includes a serological test for *Clostridium difficile*, a major nosocomial concern. Student charts and tables have been moved to the Laboratory Report section so the laboratory instructor can more easily evaluate student progress.
- **Many new and improved photomicrographs.** New enlarged photomicrographs are included in the photographic atlas. As with the second edition, all plates in the Atlas are now cross-referenced within the text for easy study.

LABORATORY FEATURES

The self-contained laboratory exercises in this manual are all designed to maximize the learning opportunity and time spent during each laboratory period. Each Exercise begins with a Pre-Test and clearly defined list of Objectives, followed by a Materials List needed to complete the lab. Procedures and Results sections within each lab are easily identified. Included within lab exercises are a variety of activities like Art Labeling, Coloring, Identification Exercises, and Critical Thinking Questions that help summarize the concepts covered in the lab. An inventory list that allows students to double check their work is also a feature of most exercises.

Immediately following each Exercise is a glossary of Working Definitions and Terms that provides a

quick review and reinforcement for students as they complete the lab reports that follow. The Laboratory Report can be completed and turned into an instructor. Included in the lab reports are a mix of Fill-in-the-Blank, Matching, and Multiple-Choice Questions. Student work tables and charts are now included in the Laboratory Report so instructors can review results of each completed exercise.

SUPPORTING MATERIALS

A companion web site for instructors complements the use of this manual. It includes the following:

- Laboratory Materials List and Suggestions
- Reagents and Stain Formulations
- Media Formulations
- Suggested Sequencing of laboratories for health science students and for non-health science students.
- An Answer Key to the questions from the laboratory reports.

The supporting Web site can be accessed at www.wiley.com/college/pollack

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We invite all readers and users of this manual to send any comments and suggestions to us so that we can include them in planning for future editions.

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