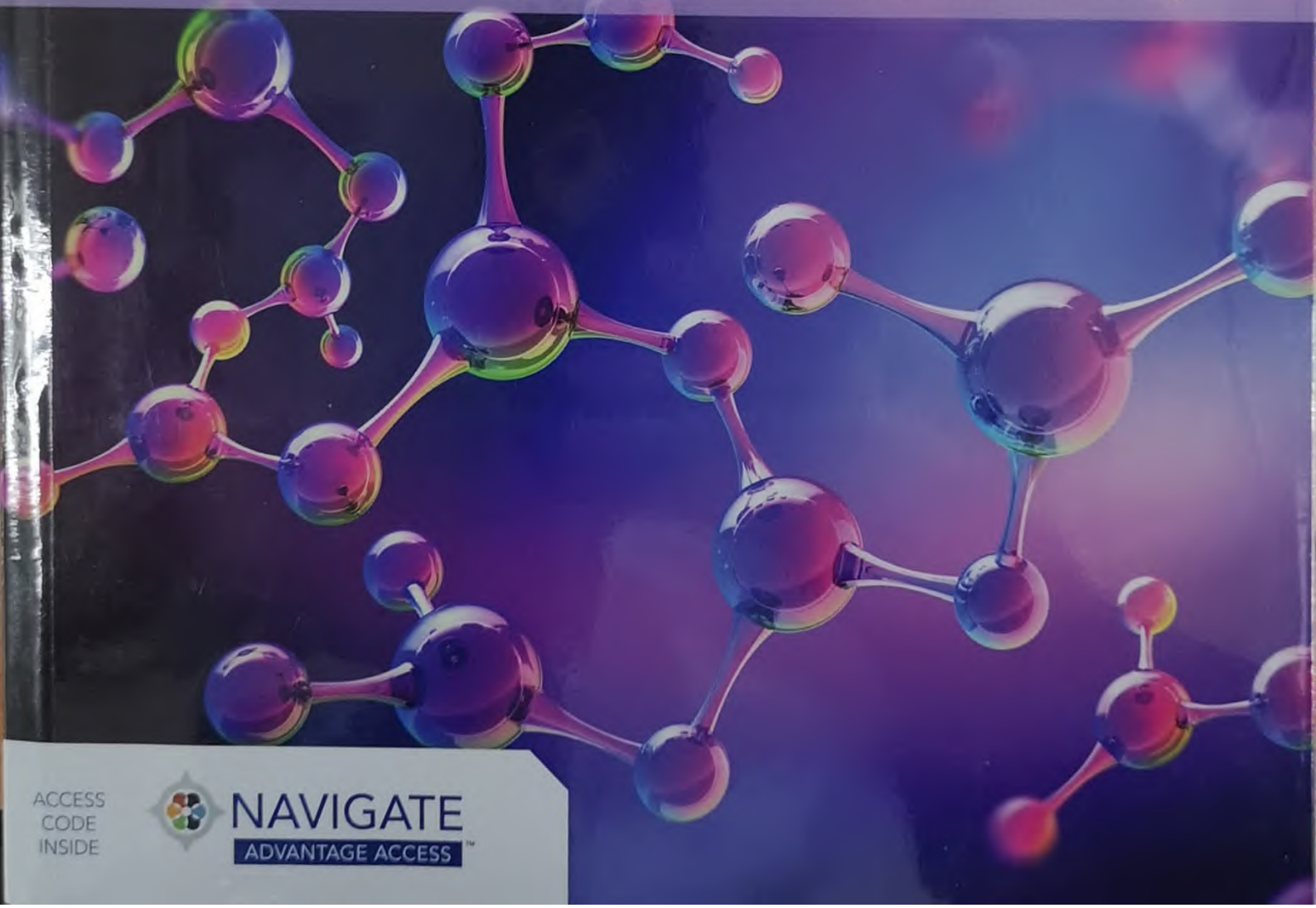
NINTH EDITION

CLINICAL CHEMISTRY

Principles, Techniques, and Correlations

Michael L. Bishop | Edward P. Fody
Carleen Van Siclen | James March Mistler | Michelle Moy



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Preface

The events with the worldwide pandemic have placed an extraordinary burden on our healthcare system. Facing staffing, PPE, and diagnostic supply shortages, healthcare professionals stepped up with effort, critical process evaluation, and extraordinary dedication to provide quality patient care with compassion and empathy. Initially, the nightly news became a presentation of CDC guidelines, mask mandates, business shutdowns, travel restrictions, metrics, trends, positivity rates, and hospitalization and death statistics. Months later, the metrics related to more positive information—initial results of vaccine clinical trials, emergency use authorizations, vaccine shipments, and "shots in arms." Through it all, the healthcare system functioned as effectively as possible due to individual efforts and interdisciplinary teamwork. Healthcare professionals have improved communication with each other, as well as with the patient and their families. Collaborative efforts between healthcare disciplines are emerging across the patient care spectrum landscape.

Since the initial idea for this textbook was discussed in a meeting of the Biochemistry/Urinalysis section of ASMT (now ASCLS) in the late 1970s, the only constant has been change and the never wavering commitment of the clinical laboratory professionals. Now almost 45 years since the initiation of this effort, the editors have had the privilege of completing the ninth edition with another diverse team of dedicated clinical laboratory professionals. In this era of focusing on metrics, the editors would like to share the following information. The 401 contributions in the 9 editions and supporting material represent 115 clinical laboratory science education programs, 83 clinical laboratories, 28 medical device companies, 4 government agencies, and 3 professional societies representing 40 states and territories. One hundred and sixty-four contributors were clinical laboratory scientists with advanced degrees. These contributors have produced 289 chapters citing 12,054 references for a total of 5,708 pages that included 2,158 figures and 691 case studies. With today's global focus, the previous editions of the text have been translated into at least six languages. By definition, a profession is a calling requiring specialized knowledge and intensive academic preparation to define its scope of practice and produce its own literature. The clinical laboratory science profession has evolved significantly over these past four-and-a-half decades.

Clinical chemistry continues to be one of the most rapidly advancing areas of laboratory medicine. New technologies and analytical techniques have been introduced, with a dramatic impact on the practice of clinical chemistry and laboratory medicine. In addition, the healthcare system itself is rapidly changing. There is ever-increasing emphasis on improving the quality of patient care, individualized medicine, patient outcomes, financial responsibility, and total quality management. Now, more than ever, clinical laboratorians need to be concerned with disease correlations, result interpretations, problem solving, quality assurance, and cost-effectiveness. Laboratory professionals need to know not only the *how* of tests but more importantly be able to communicate the *what, why*, and *when* to the patient and the healthcare team. The editors of *Clinical Chemistry: Principles, Techniques, and Correlations* have designed the ninth edition to be an even more valuable resource to both students and practitioners.

The ninth edition of *Clinical Chemistry: Principles, Techniques, and Correlations* is comprehensive, up-to-date, and easy to understand for students at all entry levels. It is also intended to be a practically organized resource for both instructors and practitioners. The editors have tried to maintain the book's readability and further improve its content while rearranging content and focusing on the scaffolding provided by the ASCLS MLT and MLS Entry Level Curriculum and the ASCP BOC guidelines. Because clinical laboratorians use their interpretative and analytic skills in the practice of clinical chemistry, an effort has been made to maintain an appropriate balance between analytic principles, techniques, and the correlation of results with disease states.

In this edition, the editors have maintained features in response to requests from our readers.

students, instructors, and practitioners. Ancillary materials have been updated and expanded. Chapters now include current, more frequently encountered case studies modelled after the nursing PICOT initiative in a structured, unfolding style. To provide a thorough, up-to-date study of clinical chemistry, all chapters have been updated and reviewed by professionals who practice clinical chemistry and laboratory medicine on a daily basis. The basic principles of the analytic procedures discussed in the chapters reflect the most recent or commonly performed techniques in the clinical chemistry laboratory. Detailed procedures have been omitted because of the variety of equipment and commercial kits used in today's clinical laboratories. Instrument manuals and analyte package inserts are the most reliable reference for detailed instructions on current analytic procedures. All chapter material has been updated, improved, and rearranged for better continuity and readability.

The **Navigate 2 Advantage** digital access contains additional case studies, review questions, teaching resources, teaching tips, student laboratory procedures, and teaching aids for instructors and students; it is included with the purchase of this textbook and is also available for separate purchase from the publisher.

One last piece of advice to make you successful in the field of clinical laboratory science:

Work with compassion, empathy, and professionalism until you no longer have to introduce yourself.*

Michael L. Bishop
Edward P. Fody
Carleen Van Siclen
James March Mistler
Michelle Moy

*Modified from Harvey Specter in *Suits*.

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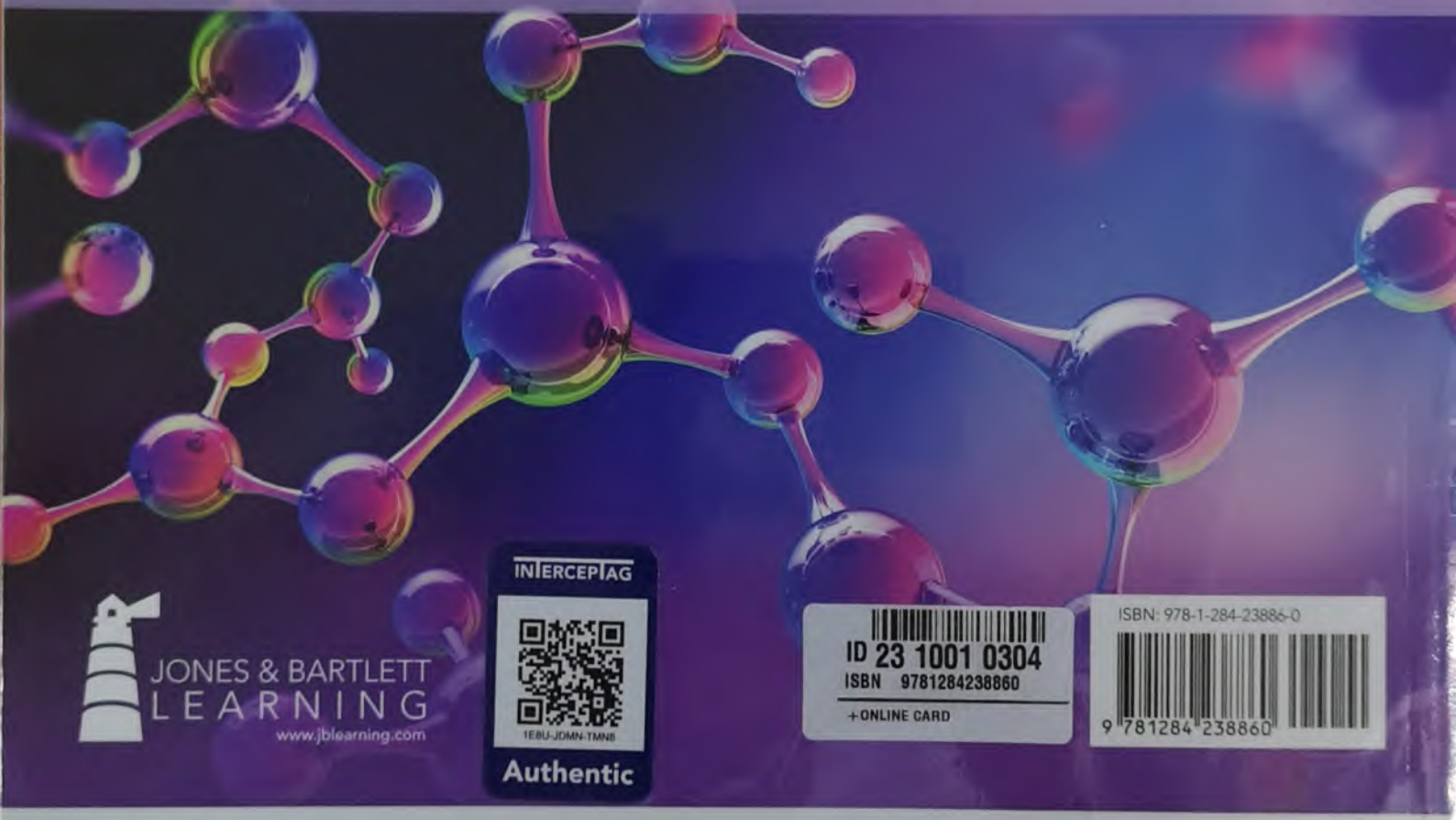

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