

Series Preface

How to Use This Book

The idea for Elsevier's Integrated Series came about at a seminar on the USMLE Step 1 Exam at an American Medical Student Association (AMSA) meeting. We noticed that the discussion between faculty and students focused on how the exams were becoming increasingly integrated—with case scenarios and questions often combining two or three science disciplines. The students were clearly concerned about how they could best integrate their basic science knowledge.

One faculty member gave some interesting advice: "read through your textbook in, say, biochemistry, and every time you come across a section that mentions a concept or piece of information relating to another basic science—for example, immunology—highlight that section in the book. Then go to your immunology textbook and look up this information, and make sure you have a good understanding of it. When you have, go back to your biochemistry textbook and carry on reading."

This was a great suggestion—if only students had the time, and all of the books necessary at hand, to do it! At Elsevier we thought long and hard about a way of simplifying this process, and eventually the idea for Elsevier's Integrated Series was born.

The series centers on the concept of the integration box. These boxes occur throughout the text whenever a link to another basic science is relevant. They're easy to spot in the text—with their color-coded headings and logos. Each box contains a title for the integration topic and then a brief summary of the topic. The information is complete in itself—you probably won't have to go to any other sources—and you have the basic knowledge to use as a foundation if you want to expand your knowledge of the topic.

You can use this book in two ways. First, as a review book...

When you are using the book for review, the integration boxes will jog your memory on topics you have already covered. You'll be able to reassure yourself that you can identify the link, and you can quickly compare your knowledge of the topic with the summary in the box. The integration boxes might highlight gaps in your knowledge, and then you can use them to determine what topics you need to cover in more detail.

Second, the book can be used as a short text to have at hand while you are taking your course...

You may come across an integration box that deals with a topic you haven't covered yet, and this will ensure that you're one step ahead in identifying the links to other subjects (especially useful if you're working on a PBL exercise). On a simpler level, the links in the boxes to other sciences and to clinical medicine will help you see clearly the relevance of the basic science topic you are studying. You may already be confident in the subject matter of many of the integration boxes, so they will serve as helpful reminders.

At the back of the book we have included case study questions relating to each chapter so that you can test yourself as you work your way through the book.

Online Version

An online version of the book is available on our Student Consult site. Use of this site is free to anyone who has bought the printed book. Please see the inside front cover for full details on Student Consult and how to access the electronic version of this book.

In addition to containing USMLE test questions, fully searchable text, and an image bank, the Student Consult site offers additional integration links, both to the other books in Elsevier's Integrated Series and to other key Elsevier textbooks.

Books in Elsevier's Integrated Series

The nine books in the series cover all of the basic sciences. The more books you buy in the series, the more links that are made accessible across the series, both in print and online.



Anatomy and Embryology



Histology



Neuroscience



Biochemistry



Physiology



Pathology



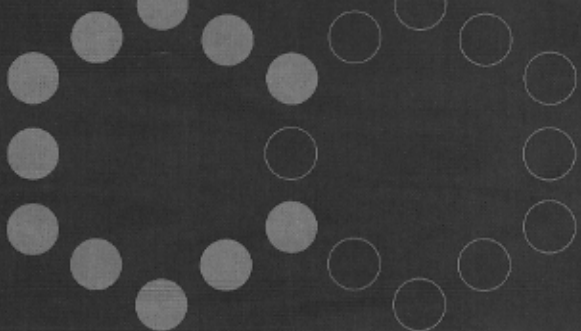
Immunology and Microbiology



Pharmacology



Genetics



Preface

I wrote this book to make biochemistry easier to learn and easier to remember. Learning and remembering do not always go together, since any new material can be learned but forgotten quickly. It is only through integrative learning that long-term memory is built. Even if you have never had a biochemistry course or if you have taken biochemistry but forgotten much of it, you will find this innovative approach helpful.

To make learning easier, I have given careful attention to the sequence and organization of each chapter so that each topic builds on previous topics. Also, within each chapter, the material is presented in a way that suggests how it should be learned. For example, each metabolic pathway has five consistent organizing aspects: pathway components, regulation points, intersection with other pathways, unique features, and clinical features. Hence all chapters on metabolism, for example, have the same headings, allowing easy comparison and quicker integrative learning. An additional aid to easier

learning is the minimal inclusion of chemical structures, thus shifting the learning emphasis in a more physiologic direction.

Information in biochemistry is easier to remember when it is integrated with information from other basic science disciplines. This approach can be seen in the clinical vignette case studies at the end of the text, which contain questions about other basic science disciplines in addition to biochemistry. Such integrative thinking will be needed in the clinic, where patients present with symptoms that cross the boundaries of traditional disciplines. Integration across disciplines is further enhanced throughout each chapter by the Integration Boxes.

This book is written as concisely, clearly, and completely as possible. I hope that it brings you the same helpful assistance that I try to bring to my students here at the Texas Tech School of Medicine.

John W. Pelley, PhD

Graduate Science Research Center
University of South Carolina
Columbia, South Carolina

Marek Dominiczak, MD, PhD, FRCPath, FRCP(Glas)
Clinical Biochemistry Service
NHS Greater Glasgow and Clyde
Gartnavel General Hospital
Glasgow, United Kingdom

Clinical Medicine

Ted O'Connell, MD
Clinical Instructor
David Geffen School of Medicine
UCLA
Program Director
Woodland Hills Family Medicine Residency Program
Woodland Hills, California

Genetics

Neil E. Lamb, PhD
Director of Educational Outreach
Hudson Alpha Institute for Biotechnology
Huntsville, Alabama
Adjunct Professor
Department of Human Genetics
Emory University
Atlanta, Georgia

Immunology

Darren G. Woodside, PhD
Principal Scientist
Drug Discovery
Encysive Pharmaceuticals Inc.
Houston, Texas

Microbiology

Richard C. Hunt, MA, PhD
Professor of Pathology, Microbiology, and Immunology
Director of the Biomedical Sciences Graduate Program
Department of Pathology and Microbiology
University of South Carolina School of Medicine
Columbia, South Carolina

Neuroscience

Cristian Stefan, MD
Associate Professor
Department of Cell Biology
University of Massachusetts Medical School
Worcester, Massachusetts

Pathology

Peter G. Anderson, DVM, PhD
Professor and Director of Pathology Undergraduate
Education, Department of Pathology
University of Alabama at Birmingham
Birmingham, Alabama