

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 the 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

Though the youngest of all the medical specialties, genetics embodies the essence of all normal and abnormal development and all normal and disease states. Perhaps because of its recent recognition as a discipline and perhaps because of its derivation from research in several areas, it is easier for genetics to be an "integrated" discipline. Approaching genetics as "a particular gene located on a specific chromosome and inherited in a specific manner" loses the appreciation of spatial and temporal dimensions of expression and the many, many factors affecting every single aspect of development, survival, and even death.

Every medical discipline is connected to human well-being through the mechanisms of gene expression, environmental influences, and inheritance. Genetics underscores the many biochemical pathways, physiologic processes, and pathologic mechanisms presented in other volumes of this series. It

explains better the morphologic variation observed in embryologic development and anatomic presentation. It provides better insight into susceptibility to infection and disease. It offers insight into neurologic and behavioral abnormalities. It is defining the strategies for gene therapy and pharmacogenomics. For these reasons, it has been exciting to put this book together.

This text focuses on well-known and better described diseases and disorders that students and practitioners are likely to read about in other references. Many of these do not occur at a high frequency in populations, but they underscore major mechanisms and major concepts associated with many other medical situations. It is my hope that this text will be as stimulating to read as it was to write.

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