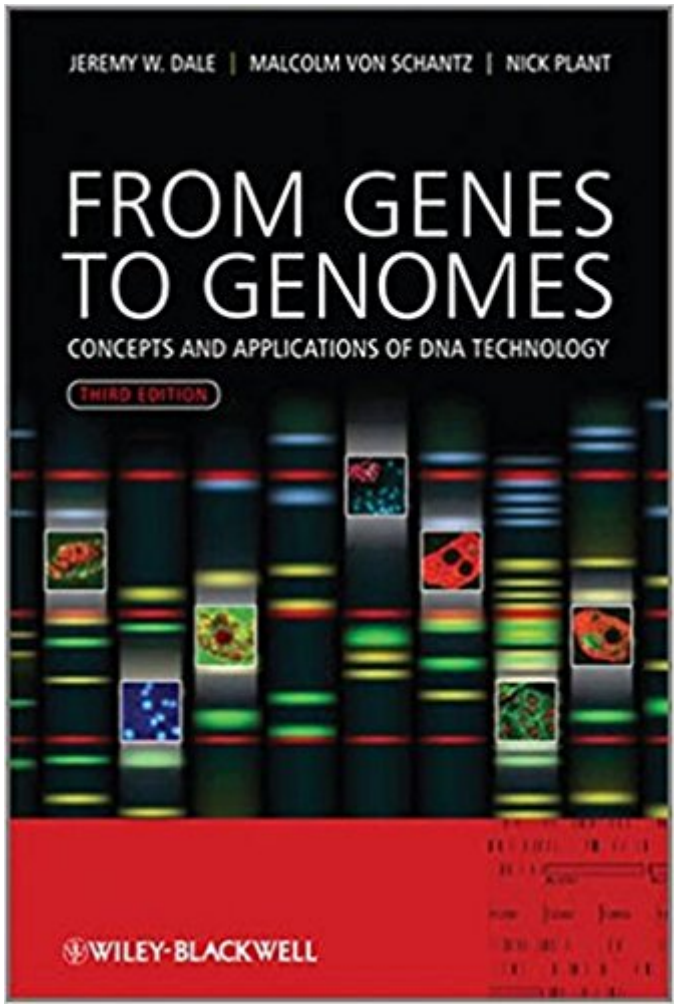
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From Genes To Genomes: Concepts And Applications Of DNA Technology



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Synopsis

The latest edition of this highly successful textbook introduces the key techniques and concepts involved in cloning genes and in studying their expression and variation. The new edition features: Increased coverage of whole-genome sequencing technologies and enhanced treatment of bioinformatics. Clear, two-colour diagrams throughout. A dedicated website including all figures. Noted for its outstanding balance between clarity of coverage and level of detail, this book provides an excellent introduction to the fast moving world of molecular genetics.

Book Information

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Customer Reviews

Ã¢â ¬Å“This third edition is absolutely necessary to incorporate the recent advances, such as genome sequencing, polymerase chain reaction, and microarray technology, in this field.Ã¢â ¬Â•Ã Â (DoodyÃ¢â ¬â„¢s, 19 October 2012)

The book by Dale, Von Schantz and Platt, From Genes to Genomes, is almost perfect. It is a 350 or so page exceptionally well written book describing all the introductory materials one would need to become current with genomes and genomics efforts. As with many of the other books I had around I first looked at this and at a glance set it aside. Then came the moment when I wanted to re-understand something and I opened this book up and I was hooked. It in a clean and clear manner takes the reader from basic DNA principles and through all of the key techniques used in genomic studies today. It avoids getting to complex into any one area and it reads in a

straightforward and consistent manner. It is a superb asset for ÃƒÂ¢Ã â ¬Ã Å“catching upÃƒÂ¢Ã â ¬Ã Â• and I suspect for first learning the materials.Chapter 1 is the basic introduction to genes and genomes. It is DNA 101 but it contains little tidbits of essential materials that are all well integrated. One thus starts with a clear understanding where the authors are taking the reader.Chapter 2 is the material on basic gene cloning. It uses the plasmid approach with bacteriophage and does so without burdening the reader with too much overhead and history. This Chapter discusses technique and technology and the reader is given a logical approach to the basics of cloning. Restriction enzymes are introduced and the material is adequate to have enough depth to see how they can be applied. There are, of course, a lot of implementation questions that are left hanging but that is typical of this study. There is a section on ligation and I would like to have seen this carried over a bit when discussing gene knock-outs. We can understand how the genes ligate but the question is how well does this carry-over the later processes.Chapter 3 discusses DNA libraries. This is a wonderful summary of the concept. The graphics supplement the text without over powering it. One example of what I call the cook book facts is demonstrated in p 95 when discussing hybridization. Here is the curve showing how as temperature increases the DNA starts to break apart. This is the denaturing of DNA, a concept again used with the PCR analysis. This is less a theoretical or structure issue but one of those cook-book facts that have been added to the tool chest of the Genome builder.Chapter 4 is the PCR process. Simply it is the separating of DNA, then tagging one end and the other end and going through a temperature sensitive denaturing and rebuilding until what is left is millions of copies of a desired DNA segment. My only complaint here is that the graphic, good, albeit it could be made a bit better with color.Chapter 5 discusses sequencing and it gives a superb discussion of the Sanger approach. Namely ddNTPs are used with segments and then measured in a gel electrophoresis. I assume that the reader may have had some understanding of the physical details but overall it is clear and exceptionally useful.The text continues developing other elements used in current day genomics. Chapter 9 is an attempt to provide an overview of microarrays, SNP, and even GWAS and phylogenetics. My problem here is that they are trying to stretch it a bit too far. These are reasonable summaries but to do microarrays justice it may take a bit more detail, and yes color, and the phylogenetics is much too much just a high level summary.Finally the Glossary is fantastic and worth every page.The strengths and weakness of the book are simple. On the strength side it covers all the key issues superbly. On the negative side, and this may be perhaps me, I find that almost like Organic Chemistry, in Gene manipulation there still are many cookbook rules that are scattered between the facts and logical constructs. If somehow there could be a clarification of the cook book rule and the well understood

logical steps that would be a help.Overall I would highly recommend this book for almost anyone, from beginner to professional. My focus is clinical and theoretical modelling and analysis, and I have avoided bench work as much as possible. But by reading this book I can see again how much work has been done over the past few decades.

Great book...breaks complicated things down for the reader to easily understand

Great book. Explains simply, maybe sometimes too simply, but effectively the various techniques you'll ever need to know about molecular genetics. using this book as a graduate student and am very impressed with the level of understanding that comes across in this text. Makes it very easy to soak up information in an easy to learn way, but makes sure that you know the process and not just facts.Review is slightly biased though because class is based around this book and therefore aligns very well with it. If you're going to UTDallas and are taking BIOL 5375: Genes to Genomes this book is highly recommended.

This book is very readable and I thoroughly enjoyed the chapters I've read thus far for Molecular Genetics class. It does however assume you have a basic understanding of DNA biology so I would recommend brushing up a little on that before flipping through it. Still, it's great for anyone wanting to expand their knowledge in that area.

I'm starting a career in computational biology at the Broad Institute after finishing a PhD in theoretical physics, with no biology background whatsoever. This book was very helpful for getting up to speed on what can be done with DNA and how it's done. For me the second reading made much more sense than the first; I imagine that a real biologist would digest it all on the first pass. Some explanations were not as concise as they could be, but in general it's a well-written, useful book.

I bought this book to help refresh my memory of what I had learned in genetics and biotechnology. This book is comprehensive and easy to read. It manages to cover all the topics I learned with great finesse, and also details advancing techniques in genomics. Starting with basic review in molecular biology all the way to genetic modification, this is a fantastic resource, I wish I had had this book years ago!

Reads nicely. Great balance of breadth and depth. Will be keeping this text as quick reference.

Handy book to study for my genomics course. Makes for easy reading and review especially for those new to the field. Good comprehensive book.

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