
This is an excellent text that concisely overviews the use of microarray technology for the novice and also provides a valuable reference for those already taking advantage of this technology. If you need to know what microarrays are, how they can be used, how they work, and how you can analyze the data that microarrays generate, then this book will provide the insight. It will also serve as a good guide for those who want to incorporate microarray applications in undergraduate, graduate, or medical school classes.

The book reviews current platforms and types of microarrays, both those commercially available and those that can be generated by research laboratories or academic core facilities, which are now prevalent across medical school campuses. Consequently this book has plenty of information on how microarrays are made and on the pros and cons of making and using different types of arrays. In addition, an excellent description is provided on the types of labeling protocols one can use for generating the experimental materials that are applied to the microarrays.

There is a healthy section on what to do with, and how to approach analysis of, the large volume of data that microarray experiments invariably provide. Importantly, there are chapters that provide the biologist with real examples of how microarrays have been, and can be, used and interpreted in shedding light on biological processes. In addition there is a chapter on the clinical applications of microarrays as potential screening and diagnostic tools, an area that will experience phenomenal growth and development. Finally, the book glances slightly into the crystal ball in describing some newer, novel developments in the field of microarray applications, which allows the reader to explore the future possibilities of high-throughput screening approaches. There are some very useful appendices to the book, including a list of websites that can be explored to further investigate how microarrays are used in biomedical research.

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Pain management is an important area of medicine. This book covers a wide range of topics in the treatment of pain with analgesics, starting from traditional nonsteroidal anti-inflammatory drugs such as aspirin and ibuprofen, which inhibit cyclooxygenase (COX), to newer selective COX-2 inhibitors such as celecoxib and parecoxib. The book also covers the use of natural and synthetic opioids, with a detailed discussion on the molecular pharmacology of opioid receptors as well as a very practical section on the drug delivery system for opioids. Useful, well-written chapters cover the use of antidepressants in pain management, including traditional tricyclic antidepressants (TCAs), as well as recent developments of newer non-TCA drugs, such as nefazodone, for migraine and venlafaxine and dexametomidine for neuropathic pain.

The book also has excellent in-depth coverage of other approaches in pain therapy, such as gabapentin, gabapentinoids, sodium channel blockers (including antiepileptic drugs such as phenytoin, carbamazepine, and lamotrigine and antirhythmic drugs such as mexiletene), potassium channel blockers, and calcium channel antagonists. Chapters on glutamate receptors, acetylcholine receptors, other opioid receptors, adenosine, P2 receptors, substance P/NK receptors, calcitonin gene-related peptide-receptor antagonists, and nitric oxide are very informative but mostly helpful for investigators involved in the respective fields of research.

The pharmacologic bases of classes of drugs used for pain management are discussed in depth, including up-to-date discussions on molecular pharmacology. New drugs under development and in clinical trials are discussed in every well-written chapter. Detailed structures of all drugs, including steps for the synthesis of certain drugs, will be very helpful for quick reference for researchers, pharmacologists, and toxicologists, as well as organic chemists, because this information is usually missing in most books on pharmacology and toxicology. Extensive references at the end of each chapter are extremely helpful because they not only cover the most recent articles in the field but also include highly cited key older references.

The section on opioid peptides, although informative, was for me the
only disappointment. I agree with the author that endogenous or synthetic opioid peptides have significantly less favorable physiochemical properties for pain management compared with natural and synthetic opiates. The discovery of endogenous equivalents of opiates is such a remarkable event that I would have wished that more on this subject would have been included.

The editors and contributing authors of this book have performed a commendable job in dealing with this vast and complicated subject in this very ambitious project. This book is equally helpful for practicing physicians, pharmacologists, clinical chemists, and toxicologists as well as medical researchers in this field. I can recommend this book for the library of your institution or for your personal collection.

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The annual EuroRec Working Conference has become one of the most important gatherings of partners involved in the development and use of electronic health records (EHRs) in Europe. Twenty countries were represented at the 2001 conference in Aix, France, and these proceedings describe a range of topics dear to the heart of any dedicated electronic record strategist: interoperability, data content and design, impact on patient care, and role of the medical profession. Given today’s international climate, the reader may be immediately tempted to determine whether Europeans or Americans are leading in the various development fields. In fact, comparisons can be made based on the information presented by the distinguished authors, but at the same time the reader is drawn to identify where common lessons can be learned and which obstacles have been surmounted by a novel approach. The laboratorian without an extensive background in information technology (IT) may become lost in the phrases and terminology found in some of the papers, but anyone with a general appreciation of the importance of IT will benefit from the information conveyed on the universal topics of cultural and ethical considerations, security, privacy and data protection, business models, and political concerns.

Presentations entitled “Interference with the patient-doctor relationship—the cultural gap?”, “Lessons from observation”, and “Trust me, I’m a patient! The effect of an EHR on my consultation” demonstrate that paperless and networked processes still require a human factor to be successful. The focus on the patient can easily be lost when faced with the difficult challenges of user interface, security, data quality issues, cross-boundary integration, local agreements, audits, care pathways, and architecture configuration. Therefore, both the editor and the meeting organizers are to be congratulated on assembling an appropriate array of topics related to electronic records. It is also clear that although much progress is being made through the dedicated work of clinical European organizations such as SCHIN and IS4ALL (Information Society for All), much work remains to convince the European medical community that EHRs will achieve their promise of improving patient health. Although the clinical importance of the topics such as those describing efforts to incorporate universal access principles into health telematics applications is apparent, the laboratorian may be drawn more to the technical issues related to the security services that need to be an integral part of architecture and operation of each component.

Ideas conveyed in the chapter entitled “The Protection of Individuals by Protecting Medical Data in EHRs” underscore the importance of a code of ethics for all health information professionals regarding the design, development, and maintenance of EHRs and that such a code has application in the US as well as Europe. The complexity kicks up a notch with the descriptions of data modeling for a federated health record server and the associated information components. The chapter entitled “Information Architecture for a Federated Health Record Server” describes the 10 years of investigative work that led to common EHR architectures in Europe and is quite fascinating.

The chapters on “Standards Supporting Interoperability and EHCR Communication” and “Unified EHR Standard—Is Convergence Possible?” are excellent descriptions of the major global approaches to healthcare information portability, a vital component of the laboratory business. Distinctions are made between the various standards, including CEN TC251, Health Level 7, and ISO TC215. A unique comparison of the EHR to the essence of music is described in “Standards in Electronic Health Care Records: the EADG/BACH Paradigm”.

The IT-minded members of our clinical laboratory family will find much insight into what is happening in Europe and will gain an appreciation for the climate of EHR and how it differs from the US perspective. Such an understanding may ultimately lead to international compatibility, at least in the electronic patient record.

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WebCitings brings to our readers’ attention World Wide Web resources of interest to medical laboratorians. We attempt to highlight those sites that may not be well known but have valuable or unique content and, occasionally, those that may amuse. If there is a resource that you think would be useful to other readers of this journal, please let us know at webcitings@clinchem.aacc.org.

NIST/SEMATECH e-Handbook of Statistical Methods
The National Institute of Standards and Technology and the semiconductor consortium SEMATECH have teamed up to author this highly useful and informative handbook. It is superbly organized into eight sections, each with appropriate introduction, assumptions, methods, and case studies. Click on “Detailed Contents” to see the comprehensive nature of the site, but the sections on Exploratory Data Analysis, Measurement Process Characterization, Process Monitoring and Control, and Assessing Product Reliability will likely hold the highest interest for our readers.

Medical Biochemistry at the University of Kansas
http://www.kumc.edu/biochemistry/bioc800/opening.html
This site supports courses in medical biochemistry at the University of Kansas Medical Center; lecture content with slides presents the basics of biochemistry and molecular biology in a no-nonsense manner. Topics include the usual suspects: proteins, enzymes, bioenergetics, molecular genetics, lipids, regulation, and metabolism. There are sections on specific diseases and disease processes, including sickle cell, phenylketonuria (PKU), diabetes, and inflammation. It appears that this site has not been updated recently, and I noticed a few 404-errors; you can also take online exams dating from the mid-1990s.

Diseases of the Liver
http://cpmcnet.columbia.edu/dept/gi/dislist.html
These pages are maintained by Howard Worman, at Columbia, and list many liver diseases, conditions, and relevant information. The section on current papers has been moribund for quite some time; too bad, as Worman’s capsule descriptions and background information add considerable value to the studies listed.

Basic Hematology Web Tutorial
The visual interface of the Web makes it a natural for microscopic applications. This tutorial nicely summarizes normal hematopoiesis as well as red- and white-cell disorders. Textbook diagrams and photomicrographs abound, but the site design renders many pages poorly (and with illustrations that are smallish) if they are viewed with screen resolutions any greater than 800 × 600 pixels. There are useful examlike questions with popup answers.

Molecule of the Month
http://www.bris.ac.uk/Depts/Chemistry/MOTM/motm.htm
Since 1996 these pages have highlighted interesting compounds from Allcin to Zyban. Each month a new molecule is added. The same site hosts Molecules with Silly or Unusual Names (http://www.bris.ac.uk/Depts/Chemistry/MOTM/silly/silmols.htm). Commic acid is always good for a laugh!