Biophysics: An Introduction. By Rodney M.J. Cotterill. Hoboken, New Jersey: John Wiley & Sons, Ltd., 2002. 408 pp. $115.00, hardcover; $39.95, paperback.

This instructional book is based on a course in biophysics taught by Rodney Cotterill at the Danish Technical Institute. Cotterill begins by providing perspective to the burgeoning field of biophysics. The reader is then taken through the developments in physics that made it possible for physicists to contribute to biology. The author then proceeds to concepts of increasing complexity, from atoms to molecules, structures, systems, and finally the behavior of organisms.

Each subject is dealt in two ways: an intuitive qualitative description of concepts and a rigorous quantitative picture of the same. The benefit of such a structure is a qualitative understanding that helps one to place the mathematical equations in context easily. The author is very skilled in simplifying complex concepts like atomic structure and probabilistic distribution of electrons into intuitive logical notions. As a biologist, with a love for mathematics, this book was perfect for my initial grasp of biophysical concepts. A supplementary website, http://info.fysik.dtu.dk/Brainscience/rodney.html, provides additional color images, simulations, and solutions to problems. The book has appendices that serve as primers on abstract concepts like quantum mechanics.

The text is useful for students comfortable with the mathematical rigor of physics seeking the physical underpinnings of biology and for the biologist who seeks to obtain a qualitative and conceptual understanding of biophysics.

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A Dictionary of Genetics, Sixth Edition. By Robert C. King and William D. Stansfield. Oxford, United Kingdom: Oxford University Press, 2002, 530 pp., $29.95.

For some, the release of a new Dictionary of Genetics may seem a somewhat underwhelming event. For me, however, the sixth edition of this venerable reference arrived just in time to be of absolutely paramount use.

This fall, I was hard at work preparing for my departmental qualifying exam, where in students are examined on all aspects of two research proposals and any more general areas tangential to these. To succeed at such a test, it is necessary to have a broad — though not always exhaustive — grasp of the multidisciplinary landscape in which your chosen field resides. For students or professionals seeking this type of high-altitude understanding, the Dictionary of Genetics is, in my view, in a class by itself.

As its title implies, this book is a reference volume, and a relatively slim one. Inexpensive, highly readable, and concise, the Dictionary of Genetics now boasts some 7,000 definitions and nearly 400 illustrations. Predictably, these concepts cover not only genetics, but also the increasingly intertwined areas of biochemistry, immunology, molecular biology, and microbiology; in addition, we are offered appendices of taxonomies, genome statistics, online references, and a quaint timeline of genetic research and discovery. While these supplemental resources offer a unique and often intriguingly distracting diversion, do not be misled: the true heart of this reference is its core of definitions.

During my exam preparation, no other reference came close to matching the utility of this clear, concise little volume for immediately quenching the urgent thirst for knowledge so peculiar to frantic studying. The vast resources of the Internet have conditioned us to expect instant gratification in our searches for information; rather than reading a textbook in a linear fashion,