then Holmes's text would be an outstanding choice, providing a lot of flexibility. In summary, I strongly recommend this book for an introductory senior or graduate level course in applied mathematics.

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Random Graph Dynamics. *By Rick Durrett.* Cambridge University Press, Cambridge, UK, 2007. $64.00. x+212 pp., hardcover. ISBN 978-0-521-86656-9.

Around the year 2000 there was an extraordinary burst of publications associated with phrases like *complex networks, social networks, the web graph, six degrees of separation*, and *small worlds*, which spread rapidly from scientific literature into popular science awareness—Google Scholar shows that survey papers like [1, 6] quickly attracted literally thousands of citations. One aspect of this literature was its analysis of various simple-to-state mathematical models of random graphs, distinct from the classical Erdős–Rényi model much studied in probabilistic combinatorics. The early literature typically involved bare-hands calculations by authors without apparent knowledge of contemporary graduate-level mathematical probability. To people with such knowledge it was immediately clear that well-understood techniques from branching processes, percolation, and interacting particle models were readily applicable to these types of model (see, e.g., your reviewer's own unpolished 2003 lecture notes [2]), so there has been a subsequent steady stream of theorem-proof papers, both by workers switching from the classical Erdős–Rényi school and by those (like the author and reviewer) from mainstream mathematical probability.

As readers of his other books know, Durrett has a particular style—he writes arguments the way one should think directly about them in the first place, rather than via the elegant indirect approaches that often appear in much dug over fields. This is a "lecture notes" style rather than a "reference monograph" style, and indeed the book is an expansion of a Cornell summer workshop course. Following this style, Durrett has chosen a few topics, for each of which which he can develop a few interesting results in a few lectures, making no attempt to cover many topics or to say everything there is to say about these particular topics. The level of detail varies between (occasional) brief outlines and (more commonly) proofs with some details explicitly omitted, plus useful brief mentions of more sophisticated work in the literature.

The contents, in brief, are as follows. Chapter 2 concerns the Erdős–Rényi model, emphasizing branching process and random walk descriptions of component sizes; the structure of the giant component (central limit theorem for size and the diameter in the supercritical case); and the connectivity threshold. Chapter 3 is on random graphs with given degree distribution: their phase transition (for existence of the giant component), typical distances, and epidemics thereon. Chapter 4 moves from static to dynamic models, in particular the preferential attachment model famous for producing power-law degree distributions. This model is studied via a combination of direct calculation, martingales and urn models, and branching random walk. Percolation and the contact process (as epidemics) on this model are studied. Chapter 5 turns to small-world models, such as a cycle with random extra edges, and in this context questions such as path lengths and epidemic processes are re-studied. Chapter 6 turns to random walk on several of the previous models, studying mixing and hitting times, and the voter model (via its duality with coalescing random walk). The final, short Chapter 7 is a more focused account of one model, the CHKNS model.

Assuming you like the overall style, this book is very useful for two complementary audiences. If you have already seen some other account of random network models, then this book shows you how parts of their analysis can be "done right" by appealing in part to widely applicable general techniques, different from the techniques that would be emphasized in a combinatorics or statistical physics treatment. Conversely, if you are familiar with the general machinery of mainstream mathematical probability, then the book provides a pleasant and rewarding introduction to the definitions and analysis of these classes of models. However, if neither applies, then I suspect you would find the book somewhat hard to follow.

The closest alternative book, with partly overlapping topics, is Chung and Lu [3], which has a traditional monograph style—more careful and more self-contained, but less vivid and less inspiringly written.

Recounting in Chapter 1 the received history of the topic, the author (like most authors on this topic) is perhaps overcredulous about the real-world applicability of these types of model—see, e.g., [4] for a useful antidote to some of the ill-considered claims of the statistical physics community. Perhaps the broadest fields of honest applications are to areas of theoretical computer science, which can be found by browsing some of the extensive list of papers on Jon Kleinberg's course web site [5].

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Mathematics at Berkeley: A History. *By Calvin C. Moore.* A K Peters, Wellesley, MA, 2007. $39.00. xviii+341 pp., hardcover. ISBN 978-1-56881-302-8.

By 1910, Chicago, Harvard, and Princeton had become the premier mathematics departments in the United States. Half a century later the University of California at