References and Suggestions for Further Reading

- in networks," Phys. Rev. E **69**, 026113-1–15 (2004). These papers describe an algorithm for detecting the heirarchical structure of networks.
- J. A. Niesse, R. P. White, and H. R. Mayne, "Genetic algorithm approaches to minimum energy geometry of aromatic hydrocarbon clusters," J. Chem. Phys. 108, 2208–2218 (1998).
- Z. Olami, H. J. S. Feder, and K. Christensen, "Self-organized criticality in a continuous, nonconservative cellular automaton modeling earthquakes," Phys. Rev. Lett. 68, 1244 (1992).
- Suzana Moss de Oliveira, Jorge S. Sá Martins, Paulo Murilo C. de Oliveira, Karen Luz-Burgoa, Armando Ticona, and Thadeu J. P. Penna, "The Penna model for biological aging and speciation," Computing in Science and Engineering 6 (3), 74–81 (2004). Also see Dietrich Stauffer, "The complexity of biological ageing," cond-mat/0310038.
- Elaine S. Oran and Jay P. Boris, *Numerical Simulation of Reactive Flow*, 2nd ed. (Cambridge University Press, 2002). Although much of this book assumes an understanding of fluid dynamics, the discussion of simulation methods and the numerical solution of the differential equations of fluid flow does not require much background.
- Michel Peyrard, "Nonlinear dynamics and statistical physics of DNA," Nonlinearity 17, R1–R40 (2004). The author describes a simple mechanical model of DNA (see Figure 10 and Equation (1)) that is in the same spirit as the Burridge–Knopoff model of earthquakes.
- William Poundstone, *The Recursive Universe* (Contemporary Books, 1985). A book on the Game of Life that attempts to draw analogies between the patterns of life and ideas of information theory and cosmology.
- Drek de Solla Price, "Networks of scientific papers," Science 149, 510–515 (1965); "A general theory of bibliometric and other cummulative advantage processes," J. Amer. Soc. Inform. Sci. 27, 292–306 (1976). Possibly the first description of a scale-free network and the explanation for power law distributions.
- Daniel H. Rothman and Stéphane Zalesk, *Lattice-Gas Cellular Automata* (Cambridge University Press, 1997). This text includes a discussion of fluid flow through porous media as well as the lattice Boltzmann method for simulating fluids. Also see Daniel H. Rothman and Stéphane Zaleski, "Lattice-gas models of phase separation: interfaces, phase transitions, and multiphase flow," Rev. Mod. Phys. **66**, 1417–1479 (1994).
- David E. Rumelhart and James L. McClelland, *Parallel Distributed Processing: Explorations in the Microstructure of Cognition*, Vol. 1: *Foundations* (MIT Press, 1986). See also Vol. 2 on applications.
- Robert Savit, Radu Manuca, and Rick Riolo, "Adaptive competition, market efficiency, and phase transitions," Phys. Rev. Lett. 82, 2203 (1999). Analysis of the scaling behavior of the minority game.
- Herbert A Simon, "On a class of skew distribution functions," Biometrika 42, 425–440 (1955). An early paper that shows power laws coming from preferential attachment.
- V. Sood and S. Redner, "Voter model on heterogeneous graphs," Phys. Rev. Lett. **94**, 178701 (2005).
- Dietrich Stauffer, "Monte Carlo simulations of Sznajd models," J. Artificial Societies and Social Simulation 5(1) paper #4 (2002). This paper and other relevant papers can be found at <jasss.soc.surrey.ac.uk>.

- Dietrich Stauffer, "Cellular automata," Chapter 9 in Fractals and Disordered Systems, Armin Bunde and Shlomo Havlin, eds. (Springer-Verlag, 1991). Also see Dietrich Stauffer, "Programming cellular automata," Computers in Physics 5 (1), 62 (1991).
- Daniel L. Stein, ed., Lectures in the Sciences of Complexity, Vol. 1 (Addison-Wesley, 1989);
 Erica Jen, ed., Lectures in Complex Systems, Vol. 2 (Addison-Wesley, 1990);
 Daniel L. Stein and Lynn Nadel, eds., Lectures in Complex Systems, Vol. 3 (Addison-Wesley, 1991).
- Patrick Sutton and Sheri Boyden, "Genetic algorithms: A general search procedure," Am. J. Phys. 62, 549–552 (1994). This readable paper discusses the application of genetic algorithms to Ising models and function optimization.
- K. Sznajd-Weron and J. Sznajd, "Opinion evolution in closed community," Int. J. Mod. Phys. C 11 (6), 1157–1165 (2000).
- Tommaso Toffoli and Norman Margolus, *Cellular Automata Machines—A New Environment for Modeling* (MIT Press, 1987). See also Norman Margolus and Tommaso Toffoli, "Cellular automata machines," in the volume edited by Doolen et al.
- D. J. Tritton, *Physical Fluid Dynamics*, 2nd ed. (Oxford Science Publications, 1988). An excellent introductory text that integrates theory and experiment. Although there is only a brief discussion of numerical work, the text provides the background useful for simulating fluids.
- M. Mitchell Waldrop, *Complexity: The Emerging Science at the Edge of Order and Chaos* (Simon and Schuster, 1992). A popular exposition of complexity theory.
- Stephen Wolfram, ed., *Theory and Applications of Cellular Automata* (World Scientific, 1986). A collection of research papers on cellular automata that range in difficulty from straightforward to specialists only. An extensive annotated bibliography is also given. Two papers in this collection that discuss the classification of one-dimensional cellular automata are S. Wolfram, "Statistical mechanics of cellular automata," Rev. Mod. Phys. 55, 601–644 (1983), and S. Wolfram, "Universality and complexity in cellular automata," Physica B 10, 1–35 (1984).
- Stephen Wolfram, A New Kind of Science (Wolfram Media, 2002). This book discusses many important ideas and computer experiments on cellular automata. More information can be found at http://www.stephenwolfram.com/. An interesting review of this book is given by L. Kadanoff, "Wolfram on cellular automata," Phys. Today 55 (7), 55-56 (2002).
- László Zalányi, Gábor Csárdi, Tamás Kiss, Máté Lengyel, Rebecca Warner, Jan Tobochnik, and Péter Érdi, "Properties of a random attachment growing network," Phys. Rev. E. **68**, 066104-1–9 (2003).