Annotated bibliography to accompany a talk
"Case studies in torpid mixing"
at the DIMACS Workshop
"Probabilistic Analysis of Algorithms for Hard Problems"

- B. Bollobás, G. Grimmett and S. Janson, The random-cluster model on the complete graph, *Probability Theory and Related Fields* **104** (1996), 283–317.

  Phase transition in the random cluster model on K_n.

- Christian Borgs, Jennifer T. Chayes, Alan Frieze, Jeong Han Kim, Prasad Tetali, Eric Vigoda and Van Ha Vu, Torpid mixing of some Markov chain Monte Carlo algorithms in statistical physics, *Proceedings of the 40th IEEE Symposium on Foundations of Computer Science*, IEEE Computer Society Press, 1999, 218–229.

  Torpid mixing of Swendsen-Wang for the physically realistic (and technically difficult) square lattice.

- R. G. Edwards and A. D. Sokal, Generalizations of the Fortuin-Kasteleyn-Swendsen-Wang representation and Monte Carlo algorithm, *Physical Review D* **38** (1988), 2009–2012.

  Relationship between the Potts and random cluster models.

- Leslie Ann Goldberg, Automating Pólya theory: the computational complexity of the cycle index polynomial, *Information and Computation* **105** (1993), 268–288.

- Leslie Ann Goldberg and Mark Jerrum, The "Burnside process" converges slowly, *Internal Report ECS-LFCS-98-387*, Department of Computer Science, University of Edinburgh, June 1998.
  `http://www.dcs.ed.ac.uk/lfcsreps/EXPORT/98/ECS-LFCS-98-387/index.html`

  One of the primary sources for this talk.

- Vivek Gore and Mark Jerrum, The Swendsen-Wang process does not always mix rapidly, *Proceedings of the 29th ACM Symposium on Theory of Computation* (STOC), ACM Press, 1997, 674–681.

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- Mark Jerrum, Computational Pólya theory. In "Surveys in Combinatorics 1995," *London Mathematical Society Lecture Note Series* **218**, Cambridge University Press, 1995, 103–118.

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- P. M. Neumann, A lemma that is not Burnside's, *Mathematical Scientist* **4** (1979), 133–141.

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  Large deviation result for the giant component.

Mark Jerrum, November 1999