Mark Huber — Curriculum Vitae

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Data Scientist specializing in computational probability, with a focus on Monte Carlo simulation for statistical applications, approximation algorithms, and numerical integration in high dimensions.

Education

Harvey Mudd College
Bachelors of Science in Mathematics — *1994*

Cornell University
Masters in Operations Research and Industrial Engineering — *1997*

Cornell University
PhD in Operations Research and Industrial Engineering — *1999*

Experience

Chemistry Animation Project — **California Inst. of Technology**
Computer Animator — *1991, 1992*

ONR Graduate Fellowship — **Naval Undersea Warfare Center**
Visiting Researcher — *1995*

Data Mining Group — **IBM Almaden**
Visiting Researcher — *1996*

School of Operations Research and Industrial Engineering — **Cornell University**
Teaching Assistant — *1999*

Department of Statistics — **Stanford University**
NSF Postdoc in the Mathematical Sciences — *1999-2001*

Joint appointment in Mathematics and Statistical Science — **Duke University**
Assistant Professor — *2001-2009*

Department of Mathematical Sciences — **Claremont McKenna College**
Associate Professor — *2009-2012*

Department of Mathematical Sciences — **Claremont McKenna College**
Fletcher Jones Foundation Associate Professor of Mathematics and Statistics and George R. Roberts Fellow — *2012-2018*

Department of Mathematical Sciences — **Claremont McKenna College**
Chair — *2016-2019*

Computer Science Sequence — **Claremont McKenna College**
Director — *2016-present*

Data Science Sequence — **Claremont McKenna College**
Director — *2018-present*

Department of Mathematical Sciences — **Claremont McKenna College**
Fletcher Jones Foundation Professor of Mathematics and Statistics and George R. Roberts Fellow — *2018-present*

Summer Undergraduate Research — **Claremont McKenna College**
Director — *2019-2020*

Data Science Major — **Claremont McKenna College**
Program Director — *2020-present*

Publications

Book length works

[1] Mark Huber. *Probability: Lectures and Labs*. Learning College Mathematics. Independent, 2019.

[2] Mark L. Huber. *Perfect Simulation*. Number 148 in Chapman & Hall/CRC Monographs on Statistics & Applied Probability. CRC Press, 2015.

[3] M. L. Huber. *Perfect Sampling with Bounding Chains*. PhD thesis, Cornell University, 1999.

Published and accepted articles

[4] Mark Huber. Generating from the Strauss process using stitching. In *International Conference on Monte Carlo and Quasi-Monte Carlo Methods in Scientific Computing*, pages 241–251. Springer, 2022.

[5] Ilana Shapiro and Mark Huber. Markov chains for computer music generation. *Journal of Humanistic Mathematics*, 11(2):167–195, 2021.

[6] M. Huber. A probabilistic approach to the Fibonacci sequence. *The Mathematical Intelligencier*, 42:29–33, September 2020.

[7] M. Huber. Halving the bounds for the Markov, Chebyshev, and Chernoff inequalities through smoothing. *American Mathematical Monthly*, 126:915–927, 2019. arXiv:1803.06361.

[8] M. Huber. An optimal (ϵ, δ)-approximation scheme for the mean of random variables with bounded relative variance. *Random Structures Algorithms*, 55:356–370, 2019.

[9] M. Huber. Adaptive Markov chain Monte Carlo algorithms. In N. Balakrishnan, T. Colton, B. Everitt, W. Piegorsch, F. Ruggeri, and J. L. Teugels, editors, *Wiley StatsRef-Statistics Reference Online*. Wiley, 2019. doi:10.1002/9781118445112.stat07851.

[10] M. Huber and Nevena Marić. Admissible Bernoulli correlations. *Journal of Statistical Distributions and Applications*, 6(2), 2019.

[11] M. Huber and B. Jones. Faster estimates of the mean of bounded random variables. *Mathematics and Computers in Simulation*, 161:93–101, 2019.

[12] J. Banks, S. Garrabrant, M. Huber, and A. Perizzolo. Using TPA for approximating the number of linear extensions. *J. Discrete Algorithms*, 51:1–11, 2018. arXiv:1010.4981.

[13] M. Huber. Adaptive Monte Carlo integration. In N. Balakrishnan, T. Colton, B. Everitt, W. Piegorsch, F. Ruggeri, and J. L. Teugels, editors, *Wiley StatsRef-Statistics Reference Online*. Wiley, 2018. doi:10.1002/9781118445112.stat08070.

[14] J. Feng, M. Huber, and Y. Ruan. Monte Carlo with user-specified relative error. In P. W. Glynn and A. Owen, editors, *Proceedings in Mathematics & Statistics: Monte Carlo and Quasi-Monte Carlo methods*, volume 241, chapter 12. Springer, 2018.

[15] M. Huber. Optimal linear Bernoulli factories for small mean problems. *Methodology and Computing in Applied Probability*, 19:631–645, 2017. arXiv:1507.00843. doi:10.1007/s11009-016-9518-3.

[16] K. Cloud and M. Huber. Fast perfect simulation of Vervaat perpetuities. *J. Complexity*, 42:19–30, 2017. arXiv:1510.01780.

[17] M. Huber. A Bernoulli mean estimate with known relative error distribution. *Random Structures Algorithms*, 50:173–182, 2017. arXiv:1309.5413.

[18] M. Huber. Nearly optimal Bernoulli factories for linear functions. *Combin. Probab. Comput.*, 25(4):577–591, 2016. arXiv:1308.1562.

[19] M. Huber and N. Marić. Simulation of multivariate distributions with fixed marginals and correlations. *J. Appl. Probab.*, 52(2):602–608, 2015. arXiv:1311.2002.

[20] M. Huber. Approximation algorithms for the normalizing constant of Gibbs distributions. *Ann. Appl. Probab.*, 51(1):92–105, 2015. arXiv:1206.2689.

[21] M. L. Huber and S. Schott. Random construction of interpolating sets for high dimensional integration. *Journal of Applied Probability*, 51(1):92–105, 2014. arXiv:1112.3692.

[22] Mark Huber. Near-linear time simulation of linear extensions of a height-2 poset with bounded interaction. *Chic. J. Theoret. Comput. Sci.*, 2014.

[23] M. Huber and N. Marić. Minimum correlation for any bivariate Geometric distribution. *ALEA Lat. Am. J. Probab. Math. Stat.*, pages 459–470, 2014. arXiv:1406.1779.

[24] M. Huber, E. Villella, D. Rozenfeld, and J. Xu. Bounds on the artificial phase transition for perfect simulation of the hard core Gibbs processes. *Involve*, 5(3):247–255, 2012.

[25] M. Huber. Spatial birth-death swap chains. *Bernoulli*, 18(3):1031–1041, 2012. arXiv:1006.5934.

[26] M. L. Huber and J. Law. Simulation reduction of the Ising model to general matchings. *Electronic Journal of Probability*, 17:1–15, 2012. Article 33, arXiv:0907.0477v1.

[27] M. L. Huber. Simulation reductions for the Ising model. *J. Stat. Theory Pract.*, 5(3):413–424, 2011. arXiv:0908.2151v1.

[28] Faheem Mitha and Mark L. Huber. Monotonic multigamma coupling for perfect sampling. *Journal of Statistical Computation and Simulation*, 82(4):603–622, 2012.

[29] M. Huber. Spatial point processes. In S. Brooks, A. Gelman, G. Jones, and X. Meng, editors, *Handbook of MCMC*, pages 227–252. Chapman & Hall/CRC Press, 2011.

[30] J. Møller, M. L. Huber, and R. L. Wolpert. The stationary Matérn hard core process of type III. *Stochastic Process. Appl.*, 120:2142–2158, 2010.

[31] M. L. Huber and S. Schott. Using TPA for Bayesian inference. *Bayesian Statistics 9*, pages 257–282, 2010.

[32] J. A. Fill and M. L. Huber. Perfect simulation of Vervaat perpetuities. *Electron. J. Probab.*, 15:96–109, 2010.

[33] D. B. Woodward, S. C. Schmidler, and M. Huber. Conditions for rapid mixing of parallel and simulated tempering on multimodel distributions. *Ann. of Appl. Prob.*, 19(2):617–640, 2009.

[34] D. B. Woodward, S. C. Schmidler, and M. Huber. Sufficient conditions for torpid mixing of parallel and simulated tempering. *Electron. J. Probab.*, 14:780–804, 2009.

[35] M. L. Huber and R. L. Wolpert. Likelihood-based inference for Matérn type-III repulsive point processes. *Adv. Appl. Prob.*, 41(4):958–977, 2009.

[36] M. Huber. Perfect simulation with exponential tails. *Random Structures Algorithms*, 33(1):29–43, 2008.

[37] M. Huber and J. Law. Fast approximation of the permanent for very dense problems. In *Proc. of 19th ACM-SIAM Symp. on Discrete Alg.*, pages 681–689, 2008.

[38] M. Huber. Perfect simulation for image restoration. *Stochastic Models*, 23(3):475–487, 2007.

[39] D. Hearn and M. Huber. The ancestral distance test: A topdown approach to detect correlated evolution in large lineages with missing character data and incomplete phylogenies. *Systematic Biology*, 55(5):803–817, 2006.

[40] M. Huber, Y. Chen, I. Dinwoodie, A. Dobra, and M. Nicholas. Monte Carlo algorithms for Hardy-Weinberg proportions. *Biometrics*, 62:49–53, Mar 2006.

[41] M. Huber. Fast perfect sampling from linear extensions. *Discrete Mathematics*, 306:420–428, 2006.

[42] M. Huber. Exact sampling from perfect matchings of dense regular bipartite graphs. *Algorithmica*, 44:183–193, 2006.

[43] B.P. Tighe, J.E.S. Socolar, D.G. Schaeffer, W.G. Mitchener, and M.L. Huber. Force distributions in a trigonal lattice of rigid bars. *Physical Review E*, 72(031306), 2005.

[44] Y. Chen, I. Dinwoodie, A. Dobra, and M. Huber. Lattice points, contingency tables, and sampling. *Contemporary Mathematics*, 374:65–78, 2005.

[45] M. Huber and G. Reinert. The stationary distribution in the Antivoter model: exact sampling and approximations. In *Stein's Method: Expository Lectures and Applications*, pages 79–94. IMS Lecture Notes 46, 2004.

[46] M. Huber. Perfect sampling using bounding chains. *Annals of Applied Probability*, 14(2):734–753, 2004.

[47] M. L. Huber. A bounding chain for Swendsen-Wang. *Random Structures Algorithms*, 22(1):43–59, 2003.

[48] A. T. Benjamin, M. T. Fluet, and M. L. Huber. Optimal token allocations in Solitaire Knock 'm Down. *The Electronic Journal of Combinatorics*, 8(2):1–8, 2001.

[49] J. A. Fill and M. L. Huber. The Randomness Recyler approach to perfect sampling. In *Proc. 53rd Session of the ISI*, pages 69–72, 2001.

[50] J. A. Fill and M. L. Huber. The Randomness Recycler: A new approach to perfect sampling. In *Proc. 41st Sympos. on Foundations of Comp. Sci.*, pages 503–511, 2000.

[51] M. L. Huber. A faster method for sampling independent sets. In *Proc. 11th ACM-SIAM Sympos. on Discrete Algorithms*, pages 625–626, 2000.

[52] S. T. Ahearn, M. L. Huber, and G. J. Sherman. Finite groups can be arbitrarily Hamiltonian. 27(3):1013–1016, 1999.

[53] M. L. Huber. Exact sampling and approximate counting techniques. In *Proc. 30th Sympos. on the Theory of Computing*, pages 31–40, 1998.

[54] M. L. Huber. Exact sampling using Swendsen-Wang. In *Proc. 10th Sympos. on Discrete Algorithms*, pages 921–922, 1999.

Preprints and Technical Reports

[55] Dootika Vats, Felipe Acosta, Mark L. Huber, and Galin L. Jones. Understanding linchpin variables in markov chain monte carlo. arXiv:2210.13574, submitted, 2023.

[56] M. Huber. Designing perfect simulation algorithms using local correctness. arXiv:1907.06748, 2019.

[57] M. Huber. Robust estimation of the mean with bounded relative standard deviation. arXiv:1908.05386, 2019.

[58] M. Huber. The Fundamental Theorem of perfect simulation. arXiv:1704.03561., 2017.

[59] M. Huber. Partially recursive acceptance rejection. arXiv:1701.00821, 2016.

[60] M. Huber. An estimator for Poisson means whose relative error distribution is known. arXiv:1605.09445., 2016.

[61] S. R. Garcia, M. Huber, and B. Lutz. Algebraic properties of Heilbronn's exponential sum: supercharacters, Fermat congruences, and Heath-Brown's bound. arXiv:1312.1034v2, 2015.

[62] C. Evans, J. Hardin, M. Huber, D. Stoebel, and G. Wong. Differential expression analysis for multiple conditions. arXiv:1410.3370., 2014.

External funding and awards

Postdoctoral Fellow in the Mathematical Sciences
National Science Foundation *1999–2001*
Perfect simulation techniques

CAREER award
National Science Foundation *2005–2011*
Perfect sampling techniques for high-dimensional integration

DMS grant
National Science Foundation *2014-2018*
Improved Monte Carlo methods for high dimensional sums and integrals

Book Reviews

Ten great ideas about chance **P. Diaconis and B. Skyrms**
M. Huber, AMS Notices 66:6, 2019

An Introduction to Optimization (3rd ed.) **E. K. P. Chong and S. H. Zak**
M. Huber, JASA, 104:421, 2009

Introduction to Stochastic Calculus Applied to Finance (2nd ed.) **D. Lamberton and B. Lapeyre**
M. Huber, JASA, 104:1726, 2009

Monte Carlo and Quasi-Monte Carlo Sampling **C. Lemieux**
M. Huber, JASA, 105:876, 2010

Probability Theory: An Analytic View (2nd ed.) **D. W. Stroock**
M. Huber, JASA, 107:853, 2012

Selected Videos

The Alternating Series Test `https://www.youtube.com/watch?v=svPB4L__EC8&t=85s`
M. Huber *Dec 2016*

Properties of expected value `https://www.youtube.com/watch?v=XuAzQZ66TpM&t=21s`
M. Huber *Oct 2016*

Convergence of random variables `https://www.youtube.com/watch?v=XuAzQZ66TpM&t=21s`
M. Huber *Oct 2016*

Swapping limits and expectation `https://www.youtube.com/watch?v=jpxBJITM9i4&t=2s`
M. Huber *Oct 2016*

Rigorous limits `https://www.youtube.com/watch?v=vmSyC33jRbE`
M. Huber *Oct 2016*

Sets, logic, and proofs `https://www.youtube.com/watch?v=0ya83f_kfRU&t=21s`
M. Huber *Oct 2016*

Antidifferentiation of Linear Over Quadratic `https://www.youtube.com/watch?v=7FSsUZJ4xVY`
M. Huber *Apr 2014*

Factorials `https://www.youtube.com/watch?v=BuaUQrRHOTc`
M. Huber *Apr 2014*

Exponential Growth and Separation of Variables `https://www.youtube.com/watch?v=KB2iHuoqpB8`
M. Huber *Feb 2014*

For all and there exists https://www.youtube.com/watch?v=qni0TKd0DgU
M. Huber *Feb 2014*

Supremum and Infimum https://www.youtube.com/watch?v=Bl2G6ZGsBvk&t=1s
M. Huber *Feb 2014*

Six Derivatives to Memorize https://www.youtube.com/watch?v=lRyrewyC2xs
M. Huber *Mar 2013*

Antidifferentiation of a function of a line https://www.youtube.com/watch?v=qm-tXwmQpKQ
M. Huber *Mar 2013*

Probability for continuous random variables https://www.youtube.com/watch?v=rBRkEuU4SNI
M. Huber *Feb 2013*

Indicator Functions https://www.youtube.com/watch?v=V3pnr5gmJC8&t=35s
M. Huber *Feb 2013*

Antidifferentiation with the Chain Rule https://www.youtube.com/watch?v=9-ftis8vrXg
M. Huber *Dec 2012*

Integration by Parts https://www.youtube.com/watch?v=NkAkVWtbRZw
M. Huber *Nov 2012*

Selected invited and contributed talks

Southern California Probability Symposium **IPAM-UCLA, Los Angeles, California**
Bernoulli factories and local correctness *December 2019*

California Mathematics Project **Cal Poly - Pomona, California**
Data Visualization Tools *December 2019*

Statistics Colloquium **Stanford University, California**
Robust Estimation for Monte Carlo data *October 2019*

University of California - Riverside, Statistics Colloquium **Riverside, California**
Robust Estimation for Monte Carlo data *October 2019*

Algebra, Number Theory, and Combinatorics Seminar **Claremont, California**
Bounds on matrix multiplication: history and questions *March 2019*

13th International Conference on Monte Carlo and Quasi Monte Carlo Methods **Rennes, France**
Improved light tailed sample averages for robust estimation of the mean *July 2018*

LMS Invited Lecture Series on Computational Statistics **University of Warwick, UK**
Perfect Simulation Short course *July 2018*

The 2017 IISA International Conference on Statistics **Hyderabad, India**
Estimates for Monte Carlo data with user-specified error bounds *Dec 2017*

LMS-EPSRC Symp. on Markov Processes, Mixing Times, and Cutoff **University of Durham, UK**
Cutoff phenomena in perfect simulation *Aug 2017*

International Statistical Institute World Congress **Marrakech, Morocco**
Linear time perfect simulation for Markov random fields *Jul 2017*

Monte Carlo Methods and Applications (MCM 2017) **Montréal, Canada**
Faster estimates with user-specified error for $[0,1]$ random variables *Jul 2017*

Southern California Applied Mathematics Symposium **UC Irvine, California**
Faster Monte Carlo with fewer samples (Plenary Speaker) *Jun 2017*

Statistics Seminar Duke University **Durham, North Carolina**
Fast user-specified relative error estimates *Mar 2017*

Atul Vyas Memorial Lecture **Claremont, California**
How to roll a five sided die *Nov 2016*

Monte Carlo and Quasi-Monte Carlo Methods in Scientific Computing **Stanford University, Calif.**
Monte Carlo with user-specified error *Aug 2016*

Retrospective Monte Carlo Workshop **University of Warwick, UK**
A Bernoulli Factory using the Fundamental Theorem of Perfect Simulation *Jul 2016*

Statistics Seminar **Technische Universität Dortmund, Germany**
The Fundamental Theorem of Perfect Simulation *Jun 2016*

CPET Landscape of Educational Technology for Liberal Arts Education **Claremont, USA**
Using video for classes *Feb 2016*

Claremont Colleges Library Discourse Series **Claremont, USA**
Humanistic Mathematics: A Philsophy, a Journal, and a Community *Nov 2015*

George Mason University Statistics Colloquium **Fairfax, USA**
Bounded variance Monte Carlo estimates *Oct 2015*

AMS Fall Western Sectional Meeting **Fullerton, USA**
Fast approximation algorithms for partition functions of Gibbs distributions *Oct 2015*

Stochastic Processes and their Applications **Oxford, UK**
Better rigorous tail bounds for general Monte Carlo estimation *Jul 2015*

CRISM Seminar **University of Warwick, UK**
Optimal linear Bernoulli factories for small mean problems *Jul 2015*

Statistics Seminar **University of Minnesota, Minnesota**
Bounding relative error of Monte Carlo estimates *Mar 2015*

Mathematics Seminar **University of Wisconsin, Wisconsin**
Understanding relative error in Monte Carlo simulations *Mar 2015*

UFL Statistics Colloquium **Gainesville, Florida**
Obtaining relative error of estimates without the Central Limit Theorem *Oct 2014*

USC Mathematics Colloquium **Los Angeles, California**
Building a better Bernoulli Factory *Sep 2014*

Strategic Educational Technology Summit **Claremont, USA**
Using Instructional Videos in and out of the classroom *Apr 2014*

Fifth IMS-ISBA joint meeting: MCMSki IV **Chamonix, France**
Perfect simulation for image analysis *Jan 2014*

Gateways to Exploring Mathematical Sciences (GEMS) **Claremont, USA**
The Monty Hall Problem *Nov 2013*

AMS Western Sectional Meeting **Riverside, USA**
Fast approximation algorithms for partition functions of Gibbs distributions *Nov 2013*

Statistics Seminar **University of Kentucky, USA**
An unbiased estimator heads with relative error independent of p *Oct 2013*

JSM 2013 Annual Meeting **Montreal, Canada**
Controlling error for combinatorial structures *Aug 2013*

ISBA 2012 World Meeting **Kyoto, Japan**
Fast approximation algorithms for partition functions of Gibbs distributions *June 2012*

Department of Statistics Seminar **The Ohio State UniversityUSA**
Fast approximation algorithms for Gibbs partition functions *May 2012*

Statistics Speakers Series **UCLA Department of Statistics**
Perfect Simulation of Repulsive Point Processes *Nov 2011*

Mathematical and Computer Science Colloquium **University of Missouri-St. Louis**
Partially Recursive Acceptance Rejection *Oct 2011*

Greek stochastics γ — **Crete, Greece**
The Paired Product Estimator for normalizing constants of Gibbs distributions — *June 2011*

Natural Science Colloquium — **Pepperdine University**
Adative Monte Carlo Methods for Numerical Integration — *Mar 2011*

Fall Western Sectional AMS meeting — **UCLA**
Near linear time perfect simulation of corrugated surfaces — *Oct 2010*

Monte Carlo and Quasi-Monte Carlo Methods — **Warsaw, Poland**
Using TPA for Monte Carlo Integration — *Aug 2010*

9th Valencia International Meeting on Bayesian Statistics, (invited talk) — **Alicante, Spain**
Using TPA for Bayesian Inference — *Jun 2010*

Applied Mathematics and Statistics Department Seminar — **UC Santa Cruz**
Approximation of Normalizing Constants Using Random Cooling Schedules — *Apr 2010*

Statistics Department Seminar — **UC Riverside, CA, USA**
Approximation of Normalizing Constants Using Random Cooling Schedules — *Feb 2010*

Joint Mathematics Meetings — **San Francisco, CA, USA**
Spatial Birth-Death-Swap Chains — *Jan 2010*

Claremont Colleges Mathematics Colloquium — **Claremont, CA, USA**
Better numerical integration through randomness — *Nov 2009*

AMS Fall Western Meeting (invited talk) — **UC Riverside, CA, USA**
Simulation reductions for the Ising model — *Nov 2009*

Joint Statistical Meetings (invited talk) — **Washington D.C.**
Speeding up the product estimator using random temperatures — *Aug 2009*

Department of Statistics Colloquium — **University of Aalborg, Denmark**
Perfect simulation of repulsive point processes — *May 2009*

EPSRC Symposium Workshop on Markov Chain-Monte Carlo — **Warwick, UK**
Perfect simulation of Matérn type III processes — *Mar 2009*

Computational Algebraic Statistics, Theories and Applications — **Kyoto, Japan**
Sampling linear extensions for inference — *Dec 2008*

Department of Applied Mathematics and Statistics Seminar — **The Johns Hopkins University**
Perfect simulation of Matérn type III point processes — *Oct 2008*

Department of Mathematics Probability Seminar — **Duke University, North Carolina**
Conditions for Parallel and Simulated Tempering to be fast or slow — *Oct 2008*

Stochastics Seminar, School of Mathematics — **Georgia Institute of Technology, USA**
Perfect simulation of Matérn type III point processes — *Oct 2008*

School of Operations Research and Industrial Engineering Colloquium — **Cornell University**
Dealing with Matérn type III point processes — *Sep 2008*

Advances in Analysis of Monte Carlo Methods workshop — **Harvard University, Massachusetts**
An Overview of Perfect Sampling Methods — *Dec 2007*

School of Statistics Seminar — **University of Minnesota**
Perfect simulation of repulsive point processes — *Oct 2007*

New Developments in MCMC (invited talk) — **Warwick, UK**
Perfect simulation with the Randomness Recycler for arbitrary state spaces — *Aug 2006*

Department of Mathematics — **UC Davis**
Advanced Acceptance/Rejection Methods for Monte Carlo Algorithms — *Mar 2006*

Joint Statistical Meetings (contributed talk) — **Toronto, Canada**
Time Dependent Update Functions for Perfect Sampling — *Aug 2004*

IMS meeting (invited talk) **Singapore**
Time dependent update functions for perfect sampling *Mar 2004*

Mathematics Colloquium **University of Ulm, Germany**
Perfect Sampling: techniques and challenges *Dec 2003*

Mathematisches Forschungsinstitut Oberwolfach (plenary lecture) **Oberwolfach, Germany**
Perfect sampling *Dec 2003*

Opening conference Stochastic Computation program SAMSI (contributed talk) **Durham, NC**
Perfect sampling for some mixtures of distributions *Sep 2003*

Electrical and Computer Engineering Seminar **NC State**
Bounding chain techniques for perfect sampling *Feb 2003*

Undergraduate workshop in the Stochastic Computation Program, SAMSI **Durham, NC**
Stochastic Computation Techniques *Feb 2003*

First Cape Cod workshop on Monte Carlo methods (invited talk) **Cape Cod, MA**
Introduction to the Randomness Recycler *Sep 2002*

Statistics Colloquium **University of North Carolina at Chapel Hill**
Using the Randomness Recycler *Feb 2002*

53rd Annual Meeting of the International Statistical Institute (invited talk) **Seoul, South Korea**
The Randomness Recycler approach to perfect simulation *Aug 2001*

Seminar **IBM Research-Almaden**
A new approach to perfect sampling from nasty distributions *Sep 2000*

Department of Statistics Colloquium **Stanford University**
A new approach to perfect sampling from nasty distributions *Jul 2000*