

CURRICULUM VITÆ

Jeremy Staum

Associate Professor

Department of Industrial Engineering and Management Sciences
Robert R. McCormick School of Engineering and Applied Science
Northwestern University
Evanston, IL 60208-3119

Voice: (847) 491-2405

FAX: (847) 491-8005

e-mail: j-staum@northwestern.edu

url: www.iems.northwestern.edu/~staum/

• **Education**

Columbia University, Business, Ph.D., May 2001.

Stanford University, Statistics, M.S., January 1998.

University of Chicago, Mathematics, S.B., June 1996.

• **Professional Experience**

Associate Professor (2007–present), Assistant Professor (2003–2007), Department of Industrial Engineering and Management Sciences, Northwestern University.

Assistant Professor (2002–2003), Visiting Assistant Professor (2001–2002), School of Operations Research and Industrial Engineering, Cornell University.

Preceptor, Graduate School of Business, Columbia University (2001).

Associate, Quantitative Equity Derivatives, Banc of America Securities (1999–2000).

Director of Research (1998–1999), Research Analyst (1997–1998), PARADIGM Capital Management.

• **Honors**

Outstanding Simulation Publication Award, INFORMS Simulation Society, 2013.

Pentair-Nugent Professor, Northwestern University, 2009–2012.

Graduate Teaching Award, Northwestern University Dept. of IEMS, 2005, 2009, 2010.

Fellow, Center for Financial Research, Federal Deposit Insurance Corporation, 2009–2010.

Meritorious Service Award, *Operations Research*, 2008.

National Science Foundation Graduate Research Fellow, 1997–2000.

Student Marshal, University of Chicago, 1995–1996.

Elected to Sigma Xi scientific research society, 1996, and to Phi Beta Kappa, 1995.

• **Publications**

Journal Articles

- J. Staum, M. Feng, and M. Liu. “**Systemic Risk Components in a Network Model of Contagion**,” forthcoming, *IIE Transactions*.

- P. Salemi, B. L. Nelson, and J. Staum. “**Moving Least Squares Regression for High Dimensional Stochastic Simulation Metamodeling**,” forthcoming, *ACM Transactions on Modeling and Computer Simulation*.
- J. Staum. “**Non-Negative Risk Components**,” forthcoming, *Journal of Risk*.
- M. Feng, A. Wächter, and J. Staum. “**Practical Algorithms for Value-at-Risk Portfolio Optimization Problems**,” *Quantitative Finance Letters* 3 (2015), 1-9.
- J. Staum. “**Excess Invariance and Shortfall Risk Measures**,” *Operations Research Letters* 41:1 (2013), 47-53.
- J. Staum. “**Systemic Risk Components and Deposit Insurance Premia**,” *Quantitative Finance* 12:4 (2012), 651-662.
- Y. Sun, D. W. Apley, and J. Staum. “**Efficient Nested Simulation for Estimating the Variance of a Conditional Expectation**,” *Operations Research* 59:4 (2011), 998-1007.
- H. Lan, B. L. Nelson, and J. Staum. “**A Confidence Interval Procedure for Expected Shortfall via Two-Level Simulation**,” *Operations Research* 58:5 (2010), 1481-1490.
- M. Liu and J. Staum. “**Sensitivity Analysis of the Eisenberg-Noe Model of Contagion**,” *Operations Research Letters* 38:5 (2010), 489-491.
- M. Liu and J. Staum. “**Stochastic Kriging for Efficient Nested Simulation of Expected Shortfall**,” *Journal of Risk* 12:3 (2010), 3-27.
- B. Ankenman, B. L. Nelson, and J. Staum. “**Stochastic Kriging for Simulation Metamodeling**,” *Operations Research* 58:2 (2010), 371-382.
 - * Winner of the Outstanding Simulation Publication Award from the INFORMS Simulation Society.
- R. E. Baysal and J. Staum. “**Empirical Likelihood for Value at Risk and Expected Shortfall**,” *Journal of Risk* 11:1 (2008), 3-32.
- V. Lesnevski, B. L. Nelson, and J. Staum. “**An Adaptive Procedure for Simulating Coherent Risk Measures Based on Generalized Scenarios**,” *Journal of Computational Finance* 11:4 (2008), 1-31.
- V. Lesnevski, B. L. Nelson, and J. Staum. “**Simulation of Coherent Risk Measures Based on Generalized Scenarios**,” *Management Science* 53 (2007), 1756-1769.
- B. L. Nelson and J. Staum. “**Control Variates for Screening, Selection and Estimation of the Best**,” *ACM Transactions on Modeling and Computer Simulation* 16 (2006), 52-75.
- J. Staum. “**Fundamental Theorems of Asset Pricing for Good Deal Bounds**,” *Mathematical Finance* 14 (2004), 141-161.
- P. Glasserman and J. Staum. “**Resource Allocation among Simulation Time Steps**,” *Operations Research* 51 (2003), 908-921.
- P. Glasserman and J. Staum. “**Conditioning on One-Step Survival for Barrier Option Simulations**,” *Operations Research* 49 (2001), 923-937.
- J. M. Park and J. C. Staum. “**Fund of Funds Diversification: How Much is Enough?**” *Journal of Alternative Investments* 1 (1998), 39-42.

Book Chapters

- J. Staum. “**Counterparty Contagion in Context: Contributions to Systemic Risk,**” in *Handbook on Systemic Risk*, ed. J.-P. Fouque and J. Langsam, Cambridge University Press (2013), 512-544.
- J. Staum. “**Monte Carlo Computation in Finance,**” in *Monte Carlo and Quasi-Monte Carlo Methods 2008*, ed. P. L’Ecuyer and A. B. Owen, Springer-Verlag (2009), 19–42.
- S. C. Tsai, B. L. Nelson, and J. Staum. “**Combined Screening and Selection of the Best with Control Variates,**” in *Advancing the Frontiers of Simulation: A Festschrift in Honor of George Samuel Fishman*, ed. C. Alexopoulos, D. Goldsman, and J. R. Wilson, Springer-Verlag (2009), 263–290.
- J. Staum. “**Incomplete Markets,**” in *Handbooks in Operations Research and Management Science Vol. 15: Financial Engineering*, ed. J. R. Birge and V. Linetsky, Elsevier (2008), 511–563.

Refereed Conference Proceedings (bold titles are those not replicated by other publications)

- M. Feng and J. Staum. “Green Simulation Designs for Repeated Experiments,” *Proceedings of the 2015 Winter Simulation Conference*, ed. L. Yilmaz, W. K. V. Chan, I. Moon, T. M. K. Roeder, C. Macal, and M. D. Rossetti, IEEE Press, 403-413.
- I. Rosenbaum and J. Staum. “**Database Monte Carlo for Simulation on Demand,**” *Proceedings of the 2015 Winter Simulation Conference*, ed. L. Yilmaz, W. K. V. Chan, I. Moon, T. M. K. Roeder, C. Macal, and M. D. Rossetti, IEEE Press, 679-688.
- P. Salemi, B. L. Nelson, and J. Staum. “Discrete Optimization via Simulation using Gaussian Markov Random Fields,” in *Proceedings of the 2014 Winter Simulation Conference*, ed. A. Tolk, S. D. Diallo, I. O. Ryzhov, L. Yilmaz, S. Buckley, and J. A. Miller, IEEE Press, 3809-3820.
- I. Rosenbaum and J. Staum. “Multilevel Monte Carlo Metamodeling,” *Proceedings of the 2013 Winter Simulation Conference*, ed. R. Pasupathy, S.-H. Kim, A. Tolk, R. Hill, and M. E. Kuhl, IEEE Press, 509-520.
- P. Salemi, J. Staum, and B. L. Nelson. “**Generalized Integrated Brownian Fields for Simulation Metamodeling,**” *Proceedings of the 2013 Winter Simulation Conference* ed. R. Pasupathy, S.-H. Kim, A. Tolk, R. Hill, and M. E. Kuhl, IEEE Press, 543-554.
- P. Salemi, B. L. Nelson, and J. Staum. “Moving Least Squares Regression for High Dimensional Simulation Metamodeling,” *Proceedings of the 2012 Winter Simulation Conference*, ed. C. Laroque, J. Himmelspach, R. Pasupathy, O. Rose, and A. M. Uhrmacher, IEEE Press, 292-303.
- M. Liu, B. L. Nelson, and J. Staum. “**An Efficient Simulation Procedure for Point Estimation of Expected Shortfall,**” *Proceedings of the 2010 Winter Simulation Conference*, ed. B. Johansson, S. Jain, J. Montoya-Torres, J. Hugan, and E. Yücesan, IEEE Press, 2821-2831.
- M. Liu, B. L. Nelson, and J. Staum. “**Simulation on Demand for Pricing Many Securities,**” *Proceedings of the 2010 Winter Simulation Conference*, ed. B. Johansson, S. Jain, J. Montoya-Torres, J. Hugan, and E. Yücesan, IEEE Press, 2782-2789.

- W. Xie, B. L. Nelson, and J. Staum. “**The Influence of Correlation Functions on Stochastic Kriging Metamodels**,” *Proceedings of the 2010 Winter Simulation Conference*, ed. B. Johansson, S. Jain, J. Montoya-Torres, J. Hugan, and E. Yücesan, IEEE Press, 1067-1078.
- J. Staum. “**Better Simulation Metamodeling: The Why, What, and How of Stochastic Kriging**,” *Proceedings of the 2009 Winter Simulation Conference*, ed. M. D. Rossetti, R. R. Hill, B. Johansson, A. Dunkin, and R. G. Ingalls, IEEE Press, 119-133.
- M. Liu and J. Staum. “Estimating Expected Shortfall with Stochastic Kriging,” *Proceedings of the 2009 Winter Simulation Conference*, ed. M. D. Rossetti, R. R. Hill, B. Johansson, A. Dunkin, and R. G. Ingalls, IEEE Press, 1249-1260.
 - * Winner of the Best Student Research Paper Award from the INFORMS Financial Services Section and the Best Ph. D. Student Paper Award from the INFORMS Simulation Society.
- B. Ankenman, B. L. Nelson, and J. Staum. “Stochastic Kriging for Simulation Meta-modeling,” in *Proceedings of the 2008 Winter Simulation Conference*, ed. S. J. Mason, R. R. Hill, L. Mönch, O. Rose, T. Jefferson, and J. W. Fowler, IEEE Press, 362-370.
- R. E. Baysal, B. L. Nelson, and J. Staum. “**Response Surface Methodology for Simulating Hedging and Trading Strategies**,” in *Proceedings of the 2008 Winter Simulation Conference*, ed. S. J. Mason, R. R. Hill, L. Mönch, O. Rose, T. Jefferson, and J. W. Fowler, IEEE Press, 629-637.
- H. Lan, B. L. Nelson, and J. Staum. “A Confidence Interval for Tail Conditional Expectation via Two-Level Simulation,” in *Proceedings of the 2007 Winter Simulation Conference*, ed. S. G. Henderson, B. Biller, M.-H. Hsieh, J. Shortle, J. D. Tew, and R. R. Barton, IEEE Press, 949-957.
- H. Lan, B. L. Nelson, and J. Staum. “**Two-Level Simulations for Risk Management**,” in *Proceedings of the 2007 INFORMS Simulation Society Research Workshop*, INSEAD, ed. S. Chick, C.-H. Chen, S. G. Henderson, and E. Yücesan, 102-107.
- V. Lesnevski, B. L. Nelson, and J. Staum. “An Adaptive Procedure for Simulating Coherent Risk Measures Based on Generalized Scenarios,” in *Proceedings of the 2006 Winter Simulation Conference*, ed. L. F. Perrone, F. P. Wieland, J. Liu, B. G. Lawson, D. M. Nicol, and R. M. Fujimoto, IEEE Press, 733-740.
- V. Lesnevski, B. L. Nelson, and J. Staum. “**Simulation of Coherent Risk Measures**,” in *Proceedings of the 2004 Winter Simulation Conference*, ed. R. G. Ingalls, M. D. Rossetti, J. S. Smith, and B. A. Peters, IEEE Press, 1579-1585.
- J. Staum, S. Ehrlichman, and V. Lesnevski. “**Work Reduction in Financial Simulations**,” in *Proceedings of the 2003 Winter Simulation Conference*, ed. S. Chick, P. J. Sánchez, D. Ferrin, and D. J. Morrice, IEEE Press, 311-318.
- J. Staum. “**Efficient Simulations for Option Pricing**,” in *Proceedings of the 2003 Winter Simulation Conference*, ed. S. Chick, P. J. Sánchez, D. Ferrin, and D. J. Morrice, IEEE Press, 258-266.
- J. Staum. “Simulation in Financial Engineering,” in *Proceedings of the 2002 Winter Simulation Conference*, ed. E. Yücesan, C.-H. Chen, J. L. Snowdon, and J. M. Charnes, IEEE Press, 1481-1492.

- P. Glasserman and J. Staum. “**Stopping Simulated Paths Early,**” in *Proceedings of the 2001 Winter Simulation Conference*, ed. B. A. Peters, J. S. Smith, D. J. Medeiros, and M. W. Rohrer, IEEE Press, 318–324.
- J. Staum. “Simulation in Financial Engineering,” in *Proceedings of the 2001 Winter Simulation Conference*, ed. B. A. Peters, J. S. Smith, D. J. Medeiros, and M. W. Rohrer, IEEE Press, 123–133.

Submitted Papers

- M. Feng and J. Staum. “**Green Simulation: Reusing the Output of Repeated Experiments.**”
- A. Maggiar, A. Wächter, I. S. Dolinskaya, and J. Staum. “**A Derivative-Free Trust-Region Algorithm for the Optimization of Functions Smoothed via Gaussian Convolution Using Adaptive Multiple Importance Sampling.**”
- I. Rosenbaum and J. Staum. “**Multi-Level Monte Carlo Metamodeling.**”
- P. Salemi, E. Song, B. L. Nelson, and J. Staum. “**Discrete Optimization via Simulation using Gaussian Markov Random Fields.**”
- E. Song, B. L. Nelson, and J. Staum. “**Shapley Effects for Global Sensitivity Analysis: Theory and Computation.**”
- J. Staum, A. Wächter, A. Maggiar, and M. Feng. “**Uniform Convergence of Sample Average Approximation with Adaptive Importance Sampling.**”
- S. G. Steckley, S. G. Henderson, D. Ruppert, R. Yang, D. W. Apley, and J. Staum. “**Estimating the Density of a Conditional Expectation.**”
- R. Yang, D. W. Apley, and J. Staum. “**A Quadratic Programming Approach to Density Deconvolution with Additive Measurement Errors.**”

Technical Reports

- M. Liu and J. Staum. “Systemic Risk Components and Deposit Insurance Premia,” FDIC Center for Financial Research Working Paper 2011-03.
- J. Staum. “Pricing and Hedging in Incomplete Markets: Fundamental Theorems and Robust Utility Maximization,” Cornell ORIE Technical Report 1351 (2003).
- J. Staum. “**Ideological Platforms and Probabilistic Voting Equilibria,**” Cornell ORIE Technical Report 1344 (2002).
- J. M. Park and J. C. Staum. “**Performance Persistence in the Alternative Investment Industry,**” technical report, PARADIGM Capital Management (1998).

• **Research Funding**

Intel Parallel Computing Center “High Performance Computing in Financial Engineering” (2015-2016); with Nikos Hardavellas, Diego Klabjan, and Vadim Linetsky.

“Learning the Market’s Expectations,” McCormick Research Catalyst Award (2014-2015); with Vadim Linetsky.

“Stochastic Kriging: Modeling and Controlling Uncertainty in Simulation,” National Science Foundation Grant No. CMMI-0900354 (2009–2013), PI; with co-PIs Bruce Ankenman and

Barry Nelson.

IBM Faculty Award, 2009.

Unrestricted gift, NVIDIA Corporation, 2008.

“CIEG: High-Performance Computing for Design of Risk Management Simulation Procedures,” National Science Foundation Grant No. CMMI-0823273 (2008-2009), PI; with co-PI Barry Nelson (supplement to CMMI-0555485).

“Simulating Coherent Risk Measures,” National Science Foundation Grant No. CMMI-0555485 (2006–2009), PI; with co-PI Barry Nelson.

“Theoretical and Applied Probability on Stochastic Calculus, Numerical Methods, and Mathematical Finance,” National Security Agency Grant No. H98230-04-1-0047 (2004–2006), PI.

“Theoretical and Applied Probability on Stochastic Calculus, Numerical Methods, and Mathematical Finance,” National Science Foundation Grant No. DMS-0202958 (2002–2005), co-PI; with PI Philip Protter.

- **Presentations**

- Invited Seminars

1. “Systemic Risk Components in a Network Model of Contagion,” Dept. of Quantitative Methods, Colegio Universitario de Estudios Financieros (CUNEF), Complutense University of Madrid, September 2015.
2. “Recent Progress with Random Fields in Simulation Metamodeling,” H. Milton Stewart School of Industrial and Systems Engineering, Georgia Institute of Technology, April 2014.
3. “Simulation Experiment Design and Analysis: Getting More from Your Simulation Model, Faster,” Division of Decision and Information Sciences, Argonne National Laboratory, October–November 2013.
4. “Moving Least Squares Regression for High-Dimensional Simulation Metamodeling,” Dept. of Applied Mathematics, Illinois Institute of Technology, April 2012.
5. “Systemic Risk Components and Deposit Insurance Premia,” Center for Research in Financial Mathematics and Statistics, University of California at Santa Barbara, September 2010.
6. “Optimizing Capital Requirements for Systemic Risk,” IBM T. J. Watson Research Center, August 2010.
7. “Systemic Risk Components as Deposit Insurance Premia,” Dept. of ORFE, Princeton University, March 2010.
8. “Systemic Risk: The Next Frontier in Risk Management and Regulation,” IBM T. J. Watson Research Center, July 2009.
9. “Systemic Risk: The Next Frontier in Risk Management and Regulation,” Mornings at McCormick, McCormick School of Engineering and Applied Science, Northwestern University, May 2009.
10. Panelist, “Financial Engineering: Lessons From The Current Financial Crisis,” Dean’s Seminar Series, McCormick School of Engineering and Applied Science, Northwestern University, November 2008.

11. "Stochastic Kriging and its Applications," Dept. of Applied Mathematics, Illinois Institute of Technology, September 2008.
12. "Two-Level Simulations for Risk Measurement," Dept. of Mathematical Sciences, New Mexico State University, February 2008.
13. "Two-Level Simulations for Risk Measurement," Dept. of MS&E, Stanford University, February 2008.
14. "Two-Level Simulations for Risk Measurement," Dept. of IEOR, University of California at Berkeley, February 2008.
15. "Two-Level Simulations for Risk Measurement," School of ORIE, Cornell University, August 2007.
16. "Two-Level Simulations for Risk Measurement," Dept. of Applied Mathematics, Illinois Institute of Technology, April 2007.
17. "Simulation for Risk Measurement," Dept. of IEOR, Columbia University, February 2007.
18. "An Empirical Likelihood Confidence Region for Value-at-Risk and Tail Conditional Expectation," Dept. of Mathematics, University of Chicago, April 2006.
19. "An Empirical Likelihood Confidence Region for Value-at-Risk and Tail Conditional Expectation," Dept. of Mathematics, Purdue University, March 2006.
20. "Simulation of Coherent Risk Measures" and "Work Reduction in Financial Simulations," JP Morgan Chase, New York City, January 2005.
21. "Conjugate Duality in Pricing, Hedging, and Portfolio Optimization," Dept. of Mathematical Sciences, University of Texas at El Paso, October 2004.
22. "Pricing and Hedging in Incomplete Markets: Fundamental Theorems and Robust Utility Maximization," Fuqua School of Business, Duke University, January 2003.
23. "Pricing and Hedging in Incomplete Markets: Fundamental Theorems and Robust Utility Maximization," Institute for Mathematics, Humboldt University of Berlin, January 2003.
24. "Pricing and Hedging in Incomplete Markets: Fundamental Theorems and Robust Utility Maximization," Dept. of Mathematics, Federal Institute of Technology (ETH) Zürich, January 2003.
25. "Pricing and Hedging in Incomplete Markets: Fundamental Theorems and Robust Utility Maximization," Cornell Theory Center Manhattan, December 2002.
26. "Pricing and Hedging in Incomplete Markets: Fundamental Theorems and Robust Utility Maximization," Courant Institute of Mathematical Sciences, New York University, October 2002.
27. "Pricing and Hedging in Incomplete Markets: Fundamental Theorems and Robust Utility Maximization," Dept. of IEMS, Northwestern University, October 2002.
28. "Pricing and Hedging in Incomplete Markets: Fundamental Theorems and Robust Utility Maximization," School of ORIE, Cornell University, October 2002.
29. "Risk Measures and Pricing in Incomplete Markets," Dept. of Mathematics, University of Buenos Aires, December 2001.

30. "Importance Sampling with Non-Equivalent Measures," Dept. of Mathematics, Cornell University, October 2001.

Invited Conference Presentations

1. "Multi-Level Monte Carlo for Parametric Integration of a Discontinuous Function," Algorithms and Complexity for Continuous Problems, Schloss Dagstuhl (Leibniz-Zentrum für Informatik), Wadern, Germany, September 2015.
2. "Two Topics in Parametric Integration Applied to Stochastic Simulation in Industrial Engineering," Information-Based Complexity and Stochastic Computation, Institute for Computational and Experimental Research in Mathematics, Providence, RI, September 2014.
3. "Systemic Risk: How to Mitigate the Risk of Financial System Instability," Global Derivatives USA, Chicago, IL, November 2012.
4. "Systemic Risk Components in a Network Model of Contagion," Critical Challenges at the Interface of Mathematics and Engineering, University of Illinois at Urbana-Champaign, September 2012.
5. "Excess-Invariance and Non-Negativity in Risk Management," INFORMS Annual Meeting, Charlotte, NC, November 2011.
6. "Systemic Risk Components in a Network Model of Contagion," 7th International Congress on Industrial & Applied Mathematics, Vancouver, Canada, July 2011.
7. "Excess Invariance and Non-Negativity in Risk Measurement and Attribution," 2nd Workshop on Financial and Insurance Mathematics, Niedersächsische Technische Hochschule, Braunschweig, Germany, June 2011.
8. "Déjà Vu All Over Again: Efficiency in Repeated Financial Simulations," Workshop on Computational Methods in Finance, Fields Institute, Toronto, March 2010.
9. "Systemic Risk Components as Deposit Insurance Premia," Federal Deposit Insurance Corporation Center for Financial Research Workshop, Washington, DC, December 2009.
10. "Better Simulation Metamodeling: The Why, What, and How of Stochastic Kriging," Winter Simulation Conference, Austin, TX, December 2009.
11. " $1\frac{1}{2}$ -level Simulation," 15th INFORMS Applied Probability Society Conference, Ithaca, NY, July 2009.
12. "Systemic Risk: The Next Frontier in Risk Management and Regulation," Modeling High Frequency Data in Finance, Hoboken, NJ, July 2009.
13. "Response Surface Methodology for Simulating Hedging and Trading Strategies," Efficient Monte Carlo: From Variance Reduction to Combinatorial Optimization, Sønderborg, Denmark, July 2008.
14. "Simulation on Demand," 8th International Conference on Monte Carlo and Quasi-Monte Carlo Methods in Scientific Computing, Montréal, July 2008.
15. "Monte Carlo and Quasi-Monte Carlo Methods in Finance," 8th International Conference on Monte Carlo and Quasi-Monte Carlo Methods in Scientific Computing, Montréal, July 2008.

16. "A Confidence Interval for Tail Conditional Expectation via Two-Level Simulation," Winter Simulation Conference, Washington, DC, December 2007.
17. "An Adaptive Procedure for Simulating Coherent Risk Measures Based on Generalized Scenarios," Winter Simulation Conference, Monterey, CA, December 2006.
18. "Robustness and Ambiguity Aversion in Portfolio Optimization and Derivative Security Pricing," 3rd Rutgers-Stevens Workshop on Optimization of Stochastic Systems, Piscataway, NJ, September 2005.
19. "Simulation of Coherent Risk Measures," Winter Simulation Conference, Washington, DC, December 2004.
20. "Simulation of Coherent Risk Measures," INFORMS Annual Meeting, Denver, October 2004.
21. "Good Deal Bounds for Valuation of Real and Financial Options," INFORMS Annual Meeting, Denver, October 2004.
22. "Conjugate Duality in Pricing, Hedging, and Portfolio Optimization," AMS Western Sectional Meeting, Albuquerque, October 2004.
23. "Efficient Simulations for Option Pricing," Winter Simulation Conference, New Orleans, December 2003.
24. "Work Reduction in Financial Simulations," Winter Simulation Conference, New Orleans, December 2003.
25. "Work Reduction in Financial Simulations," INFORMS Annual Meeting, Atlanta, October 2003.
26. "Simulation in Financial Engineering," Winter Simulation Conference, San Diego, December 2002.
27. "Simulation in Financial Engineering," Winter Simulation Conference, Arlington, Virginia, December 2001.
28. "Early Stopping in Financial Simulations," Randomized Algorithms in Finance, Mathematical Sciences Research Institute, Berkeley, California, March 2001.
29. "Conditioning on One-Step Survival for Barrier Option Simulations," INFORMS Annual Meeting, Philadelphia, November 1999.

Contributed Conference Presentations

1. "Systemic Risk Components in a Network Model of Contagion," INFORMS Annual Meeting, Charlotte, NC, November 2011.
2. "Systemic Risk Components in a Network Model of Contagion," Financial Networks Conference, Geneva Finance Research Institute, Geneva, Switzerland, June 2011.
3. "Response Surface Methodology for Simulating Hedging and Trading Strategies," Winter Simulation Conference, Miami, FL, December 2008.
4. "Two-Level Simulations for Risk Measurement," 2007 INFORMS Simulation Society Workshop, Fontainebleau, France, July 2007.
5. "Good Deal Bounds for Valuation of Real and Financial Options," Bachelier Finance Society 3rd World Congress, Chicago, IL, July 2004.

6. “Ideological Platforms and Probabilistic Voting Equilibria,” Public Choice Society, San Diego, CA, March 2002.
7. “Conditioning on One-Step Survival for Barrier Option Simulations,” Computational Intelligence in Financial Engineering, New York City, March 1999.

- **Service**

- Service to Northwestern

- IEMS Director of Graduate Studies (2011–present).

- IEMS Graduate Committee (2009–present).

- Undergraduate advisor (2009–present), freshman advisor (2003–2009).

- Advisory Council for Academic Affairs, The Graduate School (2012–2015).

- IEMS faculty search committee (2009–2010).

- IEMS departmental seminar coordinator (2006–2007).

- IEMS undergraduate Honors Program chair (2004–2009).

- IEMS Undergraduate Committee (2003–2009).

- Editorial Service

- Associate Editor of *Management Science* (2011–2015).

- Department Editor for Financial Engineering, *IIE Transactions* (2009–2015).

- Associate Editor of *Operations Research* (2006–2010).

- Associate Editor of *Naval Research Logistics* (2006–2009).

- Associate Editor of *ACM Transactions on Modeling and Computer Simulation* (2006–2009).

- Professional Service

- INFORMS Simulation Society Outstanding Publication Award Committee (2014–2016).

- Track coordinator, Winter Simulation Conferences 2007 and 2011.

- Advisory board, Leibniz Lab of Insurance and Financial Mathematics (2010–present).

- Program committee, INFORMS Applied Probability Society Conference 2009, Analysis Methodology track of Winter Simulation Conferences 2013 and 2014.

- Session coordinator, INFORMS Annual Meeting 2004, Winter Simulation Conferences 2004 and 2006.

- Grant proposal reviewer for National Science Foundation, National Security Agency, and Natural Sciences and Engineering Research Council of Canada.

- **Ph.D. Student Advising and Co-Advising**

- Mingbin Feng, “Green Simulation: Reusing the Output of Repeated Experiments,” expected Summer 2016.

- Imry Rosenbaum, “Multi-Level Monte Carlo and Database Monte Carlo for Stochastic Simulation Metamodeling,” expected Summer 2016.

- Peter Salemi, “Gaussian Markov Random Fields and Moving Least Squares for Metamodeling and Optimization in Stochastic Simulation,” August 2014.

- Ming Liu, “Efficient Simulation in Financial Risk Management,” December 2010.

Hai Lan, “Two-Level Simulation of Expected Shortfall: Confidence Intervals, Efficient Simulation Procedures, and High-Performance Computing,” June 2010.

R. Evren Baysal, “Advances in Risk Management Simulation,” December 2008.

Vadim Lesnevski, “Simulation of Coherent Risk Measures Based on Generalized Scenarios,” December 2006.

- **Courses Taught**

- **Northwestern University**

- IEMS 315 Stochastic Models and Simulation

- IEMS 317 Discrete-Event Systems Simulation

- IEMS 326 Economics and Finance for Engineers

- IEMS 460-2 Stochastic Models II

- IEMS 465 Simulation Experiment Design and Analysis

- IEMS 475 Simulation in Financial Engineering

- PHIL 109-6 Freshman Seminar

- Eudaimonologies: The Philosophers’ Guides to Happiness

- **Cornell University**

- ORIE 468/568 Financial Engineering with Stochastic Calculus I

- ORIE 469/569 Financial Engineering with Stochastic Calculus II

- ORIE 565 Applied Financial Engineering

- **Columbia University**

- FINC 9311 Continuous Time Finance