Curriculum Vitae – Shane G. Henderson

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| Charles W. Lake, Jr. Chair in ProductivitySchool of Operations Research and Information Engineering |
| Cornell UniversityIthaca, NY 14853USA | Phone: (607) 255-9126Fax: (607) 255-9129replace@cornell.edu replace = sgh9<http://people.orie.cornell.edu/shane> |

**Academic qualifications:**

PhD (Operations Research) (1997) Stanford University, Stanford, CA., U.S.A.

MS (Statistics) (1995) Stanford University, Stanford, CA., U.S.A.

BSc (Hons) (Mathematics) (1992) University of Auckland, Auckland, New Zealand.

**Honours/distinctions**

* Cornell Tech Faculty Teaching Award. 2021.
* Appointed the Charles W. Lake, Jr. Chair in Productivity, July 1, 2020.
* **P**h.D.s **O**f **O**RIE **P**rofessor (P.O.O. Professor), 2019. Endowed by gift of 40c at Big Red Barn Party, 2019. (Yes, this is a joke – thanks Ben.)
* INFORMS Wagner Prize, 2018. Analytics and Bikes: Riding Tandem with Motivate to improve Mobility. With D. Freund, E. O’Mahony and D. B. Shmoys.
* Dantzig Dissertation Award, 2018. To Daniel Freund for work on which I am a co-author.
* INFORMS Fellow, Class of 2017.
* Professor of the Year, ORIE Master of Engin. Class, Cornell University, 2016.
* Tau Beta Pi Engineering Honor Society Professor of the Year, 2016.
* Dantzig Dissertation Award, 2016. To Eoin O’Mahony for work on which I am a co-author.
* Sonny Yau ’72 Excellence in Teaching Award, Cornell University (2014)
* Best Operations Research/Management Science Focused Student Paper. 2011 Winter Simulation Conference. "A Bayesian Approach to Stochastic Root Finding," Rolf Waeber, Peter I. Frazier and Shane G. Henderson.
* Top scientific oral abstract and winner of the Association of Air Medical Services Barbara A. Hess Research and Education Award. For work with Ornge on scheduling air-ambulance transports in Ontario, presented at the 2011 Air Medical Transport Conference. (Joint work with Russell MacDonald, Mahvareh Ahghari, Tim Carnes, David Shmoys.)
* Where's the BOOM? Awarded to undergraduates Thomas Byuen and German Gutierrez who presented research I co-advised with Eric Friedman on the game of Monopoly at the "Bits on our Minds" event at Cornell University showcasing computer-science related research. (2010)
* Professor of the Year, ORIE Master of Engin. Class, Cornell University (2009)
* Michael Tien Excellence in Teaching Award, Cornell University (2008)
* Professor of the Year, ORIE Master of Engin. Class, Cornell University (2008)
* Winter Simulation Conference, Ph.D. Colloquium Plenary speaker (2008).
* Teacher of the Year, ORIE, Cornell University (2004)
* Sonny Yau ’72 Excellence in Teaching Award, Cornell University (2003)
* Outstanding Teacher Award, ORIE, Cornell University (2003)
* Alpha Delta Phi Fraternity Nomination for Faculty Award (2002)
* NSF CAREER Award, (1999).
* Meritorious Service Award (1997). Editorial service, *Operations Research*.
* Honourable Mention: George E. Nicholson Student Paper Competition (1997)
* Thomas W. Ford Fellow, Stanford University (1996)
* Course Assistant of the Year, Operations Research, Stanford University (1994)
* Fulbright Scholar (1992-1997)
* Annual Prize in Applied Mathematics, University of Auckland (1991)
* Senior Scholar in Applied Mathematics, University of Auckland (1991)
* Senior Scholar in Pure Mathematics, University of Auckland (1990)
* New Zealand Computer Society Prize, University of Auckland (1989)

**Professional positions held:**

Charles W. Lake, Jr. Chair in Productivity. Cornell University. (7/1/2020 – present)

Director, School of Operations Research and Information Engineering, Cornell University. July 2017 – June 2019

Interim Director, School of Operations Research and Information Engineering, Cornell University. July 2009 - June 2010.

Professor, Cornell University (11/1/2008 – 6/30/2020)

Associate Professor, Cornell University (7/1/2004 – 10/31/2008)

Assistant Professor, Cornell University (7/2001 – 6/30/2004)

Assistant Professor, University of Michigan (Ann Arbor) (9/1999-6/2001)

Lecturer, University of Auckland, New Zealand (9/1997-9/1999)

Assistant Professor, University of Michigan (Ann Arbor) (9/1996-9/1997)

**Present research/professional specialty:**

Discrete-event simulation and simulation optimization with applications in healthcare, vehicle sharing and other service industries.

### Research sponsorship

* + NSF “RAISE: IHBEM. Behavioral Heterogeneity and Uncertainty in Epidemiological Models” 9/1/2022 – 8/31/2025. Co-PIs: B. Cornwell, P. Frazier, G. Meredith, D. Shmoys.
	+ NSF “Stochastic Modeling and Optimization for New Directions in Emergency Medical Services” 7/1/2021 – 6/30/2024.
* Ornge. “A Simulation Model of ORNGE Urgent/Emergent Transfers.” 5/20 - 12/20.
* TRIPODS+X:RES: “Collaborative research: the future of the road - a data-driven redesign of the urban transit ecosystem.” 10/1/2018 – 9/30/2020. Co-PIs Sid Banerjee, Ramesh Johari, Samitha Samaranayake, David Shmoys.
* ARO “Operations and the sharing economy: mechanisms for on-demand resource sharing with military applications.” 2/9/2017 – 2/9/2020. Co PI: Sid Banerjee.
* Microsoft Azure Research Award 9/2/2016 – 7/28/2017.
* NSF “Stochastic optimization models and methods for the sharing economy.” 9/1/2015 – 8/31/2018. Co PI: David B. Shmoys.
* Cornell Tech Faculty Exchange Program. S. Henderson, G. Shih, D. Shmoys and R. Zabih. 5/29/14 – 5/28/15.
* XSEDE. "Developing stochastic simulation optimization algorithms." Computer time on large-scale parallel computing platforms through an NSF initiative. 10/01/12 – June 30, 2016. Co-PI Susan Hunter.
* Cornell Engineering Learning Initiatives. Undergraduate research award. Summer 2012.
* NSF "Collaborative Research: Design Principles for Parallel Simulation Optimization." 7/1/12-6/30/15. (Collaboration with Raghu Pasupathy, Virginia Tech.)
* NSF "Workshop: Simulation in Complex Service Systems." 5/1/2011 - 12/31/2011. Co-PIs Peter Haas and Pierre L'Ecuyer.
* Cornell McCormick Teaching Grant. 7/1/10 - 6/30/11. Improving ENGRD 2700. Basic Engineering Probability and Statistics. Co-PIs Bruce Turnbull and Dawn Woodard.
* NSF "Statistical Analysis of Emergency Services Data." 7/1/09-6/30/12. Co-PIs David Matteson and Dawn Woodard.
* NSF “Collaborative Research: Inference, Analysis, and Assessment in Simulation Optimization." 7/1/08 – 6/30/11. (Collaboration with Raghu Pasupathy, Virginia Tech.)
* NSF “Approximate Dynamic Programming, Simulation Optimization, and Emergency Services.” 7/1/08 – 6/30/11. Co-PI Huseyin Topaloglu.
* NSF “Workshop: Simulation for better decisions in an uncertain world. July 5-7, 2007 at INSEAD in Fontainebleau, France”
* Cornell Engineering Learning Initiatives - Undergraduate research award. Fall 2006.
* NSF “Structured Simulation Optimization and Analysis.” 2004 - 2007
* IBM Ph.D. Fellowship for Soumyadip Ghosh, September 2002 – May 2004
* NSF “Large Scale Simulation of Manufacturing and Communication Systems.” 2000 – 2004.
* NSF CAREER “Resource Allocation Under Uncertainty.” 2000 – 2004.
* Chrysler Challenge Fund. “Problem solving utilizing statistical simulation models.” 1997 – 1998.
* Rackham Graduate School, University of Michigan. 1996 – 2000

### Professional activities

*Faculty Advisor:* Cornell Quidditch Club. Jan 2012 – Dec 2016.

*Organizational Leadership*

*Chair:* INFORMS Applied Probability Society. Oct 2010 - Oct 2012.

*Member:* INFORMS Subdivisions Council. 2005 – 2006.

*Member:* INFORMS Sections and Societies Committee. 2010-2014, 2023-.

*Council Member:* INFORMS Applied Probability Society. 2002 – 2004.

*Newsletter Editor*: INFORMS College on Simulation. July 2002 – June 2004.

*Secretary*: INFORMS Simulation Society. July 2004 – 2005.

*Treasurer*: Operational Research Society of New Zealand 1999.

*Conference Organization*

*Conference Co-Chair (With Mark E Lewis):* 2009 INFORMS Applied Probability Conference

*Conference Program Co-Chair:* Simulation Society Research Workshop. 2007, 2011.

*Conference Review Committee:* 2012 Winter Simulation Conference: Analysis Methodology.

*Organizing committee*:

33rd Annual Conference of the Operational Research Society of New Zealand. 1998.

INFORMS Applied Probability Conference (Program committee only) 2005, 2007

INFORMS Practice Meeting, 2005, 2006, 2007

*Track Coordinator:*

IFORS Hawaii 2005. Applied Probability

WSC 2005. Analysis Methodology

WSC 2016. Advanced Tutorials

*Editorial Work*

*Editor in Chief:* Stochastic Systems. April 2017 – April 2023

*Area Editor:* Operations Research – Simulation Department. Jan 2006 – Dec 2011.

*Guest Co-Editor*: TOMACS Special Issue on Simulation for Complex Service Systems

*Associate Editor*:

ACM Transactions on Modeling and Computer Simulation. 2000 – Dec 2009.
Mathematics of Operations Research 2002 – Dec 2005.
Operations Research Letters 2002 – Dec 2009.

Management Science. Jan 2010 - present.

Stochastic Systems. September 2010 - 2016.

*Editor (Jointly with Barry L. Nelson):* “Handbook of Simulation” 2006. Elsevier Science series “Handbooks in Operations Research & Management Science.

*Proceedings Co-Editor (Jointly with Bahar Biller, Ming-Hua Hsieh and John Shortle):* Proceedings of the 2007 Winter Simulation Conference

*Prize Committees*

*Selection Committee:* INFORMS J.F.I.G. Student Paper Competition. 2012.

*Selection Committee*: INFORMS Nicholson Prize 2003, 2004, 2015, 2016.

*Selection Committee*: INFORMS Expository Writing Award 2014-2016.

*Selection Committee*: INFORMS Impact Award 2015-2016.

*Selection Committee*: INFORMS Pierskalla Award 2016-2018, 2023.

*Selection Committee:* INFORMS Lanchester Prize. 2018-2019.

*Selection Committee:* INFORMS Fellows. 2018-2020. Chair in 2020.

*Selection Committee:* INFORMS Prize. 2021-present.

*Referee*: Management Science, Operations Research, Mathematics of Operations Research, ACM Transactions on Modeling and Computer Simulation, Manufacturing and Service Operations Management, Annals of Applied Probability, Mathematical Programming, Interactive Transactions of OR/MS, INFORMS Journal on Computing, Annals of Operations Research, Stochastic Models, IEEE Transactions on Automatic Control, Performance Evaluation, NSF, NSERC, European Science Foundation etc.

*Member:* Institute for Operations Research and Management Science (INFORMS),
Operational Research Society of New Zealand,
American Academy of Arts and Sciences.

*Mentor:* Cornell Teaching Partnership Program

**Research Supervision**

Qingyuan (Amber) Chen. PhD. Cornell University. TBD. Started Spring 2023. Co-advised with Dave Goldberg.

George Yu. PhD. Cornell University. Optimization modeling for epidemic control. Started Spring 2023.

Natthawut (Boom) Boonsiriphatthanajaroen. PhD. Cornell University. Constrained simulation optimization. Started Spring 2023.

Matthew Ford. PhD. Cornell University. Simulation optimization. Started Summer 2021.

Hemeng (Maggie) Li. PhD. Cornell University. Modeling volunteer programs in emergency medical services. Started Summer 2020.

Alyf Janmohamed. PhD. Cornell University. Electric bike fleets. Started Fall 2019. Co-advised with D. Shmoys.

Haici Tan. M.S. Cornell University. Surgery scheduling. Fall 2018-May 2022.

Woo-Hyung Cho. PhD. Cornell University. Patient flow and appointment scheduling in medical imaging. Started Spring 2017. Co-advised with D. Shmoys.

David Eckman. Ph.D. Cornell University. Reconsidering ranking-and-selection guarantees. 2019. First position: postdoc at Northwestern University.

Sijia Ma. Ph.D. Cornell University. Sequential ranking and selection procedures and sample complexity. 2018. First position: Google Beijing.

Stephen Pallone. Ph.D. Cornell University. Adaptive Bayes-optimal methods for stochastic search with applications to preference learning. 2017. Co-chair with Peter I. Frazier. First position: Uber.

Nanjing Jian. Ph.D. Cornell University. Exploring and exploiting structure in large scale simulation optimization. 2017. First position: Amazon.

Patrick Steele. Ph.D. Cornell University. Vehicle routing problems. Co-chair with David Shmoys. 2016. First position: Wayfair.

Chaoxu Tong. Ph.D. Cornell University. Some resource allocation problems. Co-chair with David Shmoys. 2016. First position: Uber.

Eric Cao Ni. Ph.D. Cornell University. Efficient ranking and selection in parallel computing environments. 2015. First position: Morgan Stanley.

Susan Hunter. Postdoctoral Scholar. Cornell University. Sep 2011-Aug 2013. First position: Purdue.

Kenneth Chong. Ph.D. Cornell University. Models for decision-making and performance evaluation in emergency medical service systems. 2016. Co-chair with Mark E. Lewis. First position: Google.

Rolf Waeber. Ph.D. Cornell University. Probabilistic bisection search for stochastic root-finding. 2013. Co-chair with Peter I. Frazier. First position Cantor Fitzgerald.

Brad Westgate. Ph.D. Cornell University. Vehicle travel time distribution estimation and map-matching via Markov Chain Monte Carlo methods. 2012. Primary advisor: Dawn Woodard. I played a close supporting role.

Matt Maxwell. Ph.D. Cornell University. Approximate dynamic programming policies and performance bounds for ambulance redeployment. 2011. Co-chair with Huseyin Topaloglu. First position, S.A.S.

Spyros Schismenos. Ph.D. Cornell University. A Probabilistic Analysis of Low-Rank Approximations in Optimization. 2008. Co-chair with Adrian Lewis. First position J. P. Morgan.

Mateo Restrepo. Ph.D. Cornell University. Computational Methods for Static Allocation and Real-Time Redeployment of Ambulances. 2008. Co-chair with Huseyin Topaloglu. First position Morgan Stanley.

Samuel Ehrlichman. Ph.D. Cornell University. Adaptive Stochastic Simulation for Structured Problems. 2008. First position Jane St. Capital.

Sujin Kim. PhD. Cornell University. Adaptive Control Variates in Monte Carlo Simulation. 2006. First position Purdue University.

Millie Chu. Ph.D. Cornell University. Robust Intensity Modulated Radiation Therapy Treatment Planning. 2005. First position T-Mobile.

Samuel Steckley. Ph.D. Cornell University. Estimating the Density of a Conditional Expectation. 2005. First position Mitre Corporation.

Soumyadip Ghosh. Ph.D. Cornell University. Dependence in Stochastic Simulation Models. 2004. First position IBM Research.

Jeffrey Ohlmann. Ph.D. University of Michigan. Compressed Annealing. (Co-chair with Jim Bean.) 2003. First position University of Iowa Business School.

Julius Atlason. Ph.D. University of Michigan. Simulation-Based Cutting Plane Methods for Optimization of Service Systems. (Co-chair with Marina Epelman.) First position THOR Institute.

Joyce Yen. Acted as "second supervisor" in absence of true supervisor (Professor John R. Birge). Stochastic Integer Programming as applied to the Airline Crew Scheduling Problem. Ph.D. December 2000. University of Michigan.

Richard Thomson. Decision Support for Call Centre Design and Management. M.E. Completed July 1998. Primary advisor Ilze Ziedins. Auckland University.

Michael Somervell. Progressive Hedging in Parallel. M.E. Co-advised by Andy Philpott. Completed September 1998. Auckland University.

David Teirney. Yacht Match Race Simulation. M.E. (In conjunction with Team New Zealand, co-advised by Andy Philpott.) Completed July 1999. Auckland University.

**Publications**

## Books and Book Chapters

1. S. G. Henderson and A. J. Mason. 2004. Ambulance service planning: simulation and data visualization.In M. L. Brandeau, F. Sainfort, and W. P. Pierskalla, eds, *Operations Research and Health Care: A Handbook of Methods and Applications,* 77-102. Kluwer Academic, Boston.
2. S. G. Henderson. 2006. Mathematics for simulation.In *Simulation*. S. G. Henderson and B. L. Nelson, eds. Handbooks in OR and MS. Elsevier Science. 2006.
3. S. G. Henderson and B. L. Nelson. 2006. Stochastic simulation. In *Simulation*. S. G. Henderson and B. L. Nelson, eds. Handbooks in OR and MS. Elsevier Science. 2006.
4. Shane G. Henderson and Barry L. Nelson, eds. 2006. *Simulation*. Handbooks in OR and MS. Elsevier Science.
5. S. G. Henderson, B. Biller, M.-H. Hsieh, J. Shortle, J. Tew and R. R. Barton. *Proceedings of the 2007 Winter Simulation Conference*. IEEE. Piscataway, NJ.
6. Ghosh, S. and S. G. Henderson. 2009. Patchwork distributions. In "Advancing the Frontiers of Simulation: A Festschrift in Honor of George Samuel Fishman." C. Alexopoulos, D. Goldsman and J.R. Wilson, eds. Springer International Series in Operations Research & Management Science, Volume 133. Pages 65-86.
7. Henderson, S. G. 2009. Operations research tools for addressing current challenges in emergency medical services. Wiley Encyclopedia of OR/MS.
8. Kim, S., R. Pasupathy and S. G. Henderson. 2015. A guide to sample-average approximation. Handbook of Simulation Optimization. Edited by Michael C. Fu.
9. Freund, D., S. G. Henderson and D. B. Shmoys. 2019. Bike Sharing. In Sharing Economy: Making Supply Meet Demand. Ming Hu, Ed. Springer. 435 – 459.
10. Freund, D., A Norouzi-Fard, A. J. Paul, C. Wang, S. G. Henderson, D. B. Shmoys. 2019. Data-Driven Rebalancing Methods for Bike-Share Systems. In Analytics for the sharing economy: Mathematics, Engineering and Business perspectives. B. Ghaddar, J. Naoum-Sawaya, F. Hausler, G. Russo and R. Shorten, eds. Springer.
11. Henderson, S. G., G. Gill and P. Patel. 2020. Pump allocation at a New Zealand Oil Refinery. In Murty, K., ed., *Models for Optimum Decision Making in Crude Oil Production and Refining*. Springer.
12. Glynn, P.W. and S. G. Henderson. 2022. A Central Limit Theorem for Empirical Quantiles in the Markov Chain Setting. Advances in Modeling and Simulation: Festschrift in honor of Pierre L’Ecuyer. Zdravko Botev, Alexander Keller, Christiane Lemieux, Bruno Tuffin, eds. Springer. 211-238

## Refereed Journal Articles (appeared or accepted)

1. Henderson, S. G., and P. W. Glynn. 1999. Derandomizing Variance Estimators. *Operations Research* **47** 907—916.
2. Chen, B., and Henderson, S. G. 2001. Two issues in setting call center staffing levels. *Annals of Operations Research*. **108** 175—192.
3. Ghosh, S., and S. G. Henderson. 2002. Chessboard distributions and random vectors with specified marginals and covariance matrix. *Operations Research.* **50** 820—834.
4. Henderson, S. G., and P. W. Glynn. 2002. Approximating martingales for variance reduction in Markov process simulation. *Mathematics of Operations Research.* **27** 253—271.
5. Henderson, S. G., and P. W. Glynn. 2001. Regenerative steady-state simulation of discrete-event systems. *ACM Transactions on Modeling and Computer Simulation* **11** 313—345.
6. Henderson, S. G., and P. W. Glynn. 2001. Computing densities for Markov chains via simulation. *Mathematics of Operations Research.* **26** 375—400.
7. Henderson, S. G., and P. W. Glynn. 2003. Nonexistence of a class of variate generation schemes. *Operations Research Letters* **31** 83—89.
8. Cooper, W. L., S. G. Henderson and M. E. Lewis. 2003. Convergence of simulation-based policy iteration. *Probability in the Engineering and Informational Sciences.* **17** 213—234.
9. Henderson, S. G., S. P. Meyn, and V. B. Tadic. 2003. Performance evaluation and policy selection in multiclass networks. *Discrete-Event Dynamic Systems.* **13** 149—189.
10. Atlason, J., M. Epelman and S. G. Henderson. 2004. Call center staffing with simulation and cutting plane methods. *Annals of Operations Research.* **127** 333—358.
11. Friedman, E., and S. G. Henderson. 2003. Fairness and efficiency in minimizing sojourn times. *Proceedings of the 2003 ACM SIGMETRICS International Conference on Measurement and Modeling of Computer Systems*. 229—237.
12. Henderson, S. G. 2003. Estimation for nonhomogeneous Poisson processes from aggregated data. *Operations Research Letters.* **31** 375—382.
13. Philpott, A. B., S. G. Henderson and D. Teirney. 2003. A simulation model for predicting yacht match race outcomes. *Operations Research*. **52** 1—16.
14. Ghosh, S., and S. G. Henderson. 2003. Behaviour of the NORTA method for correlated random vector generation as the dimension increases. *ACM Transactions on Modeling and Computer Simulation.* **13** 276—294*.*
15. Ohlmann, J., J. Bean and S. G. Henderson. 2004. Convergence in probability of compressed annealing. *Mathematics of Operations Research*. **29** 837—860.
16. Henderson, S. G. and B. Simon. 2004. Adaptive simulation using perfect control variates. *Journal of Applied Probability.* **41** 859—876.
17. Chu, M., Y. Zinchenko, S. G. Henderson and M. B. Sharpe. 2005. Robust optimization for intensity modulated radiation therapy treatment planning under uncertainty. *Physics in Medicine and Biology*. **50** 5463—5477.
18. Soumyadip Ghosh and Shane G. Henderson. 2006. Corrigendum: Behaviour of the NORTA method for correlated random vector generation as the dimension increases. ACM TOMACS. **16** 93—94.
19. Atlason, J., M. Epelman and S. G. Henderson. 2008. Optimizing call center staffing using simulation and analytic center cutting plane methods. *Management Science.* **54** 295—309.
20. Kim, S., and S. G. Henderson. 2007. Adaptive control variates for finite-horizon simulation. *Mathematics of Operations Research.* **32** 508—527.
21. Steckley, S. G. and S. G. Henderson. 2007. The error in steady-state approximations for the time-dependent waiting time distribution. *Stochastic Models.* **23** (2): 307 – 332.
22. Soumyadip Ghosh and Shane G. Henderson. 2009. Corrigendum: Behaviour of the NORTA method for correlated random vector generation as the dimension increases. ACM TOMACS. **19** (4) Article 20
23. Steckley, S. G., S. G. Henderson and V. Mehrotra. 2009. Forecast errors in service systems. *Probability in the Engineering and Informational Sciences.* **23** (2) 305-332.
24. Ehrlichman, S. M. T. and S. G. Henderson. 2007. Adaptive control variates for pricing multi-dimensional American options. *Journal of Computational Finance*. **11** (1)
25. Gorinsky, S., E. J. Friedman, S. G. Henderson and C. Jechlitschek. 2009. Efficient fair algorithms for message communication. Special Issue of *Simulation Modelling: Practice and Theory*. **17** (3): 513-527.
26. Restrepo, M., S. G. Henderson and H. Topaloglu. Erlang loss models for the static deployment of ambulances. *Health Care Management Science* 12(1) 67-79. 2009.
27. Maxwell, M., M. Restrepo, H. Topaloglu and S. G. Henderson, 2010. Approximate dynamic programming for ambulance redeployment. *INFORMS Journal on Computing*. **22** 266-281. http://joc.journal.informs.org/cgi/content/abstract/22/2/266
28. Matteson, D. S., M. W. McLean, D. B. Woodard and S. G. Henderson. 2011. Forecasting emergency medical service call arrival rates. *Annals of Applied Statistics*. **5** (2B) 1379-1406.
29. Woodard, D. B., D. S. Matteson and S. G. Henderson. 2011. Stationarity of generalized autoregressive moving average models. *Electronic Journal of Statistics* **5** 800-828*.*
30. Carlyle, W. M., S. G. Henderson and R. Szechtman. 2012. Allocating capacity in parallel queues to improve their resilience to deliberate attack. *Naval Research Logistics.* **58** (8) 731–742
31. Saltzman, E. A., J. H. Drew, L. M. Leemis and S. G. Henderson. 2012. Simulating multivariate nonhomogeneous Poisson processes using projections. *ACM Transactions on Modeling and Computer Simulation.* **22** (3) Article 15.
32. Waeber, R. P. I. Frazier and S. G. Henderson. 2012. A framework for selecting a selection procedure. *ACM Transactions on Modeling and Computer Simulation*. **22** (3) Article 16.
33. Henderson, S. G. and S. M. T. Ehrlichman. 2012. Sharpening comparisons via Gaussian copulas and semidefinite programming. *ACM Transactions on Modeling and Computer Simulation.* **22** (4) Article 22.
34. Westgate, B. S., D. B. Woodard, D. S. Matteson and S. G. Henderson. 2013. Travel time estimation for ambulances using Bayesian data augmentation. *Annals of Applied Statistics*. **7** (2) 1139–1161.
35. Carnes, T. A., S. G. Henderson, D. B. Shmoys, M. Ahghari and R. Macdonald. 2013. Mathematical programming guides air-ambulance routing at Ornge. *Interfaces*. **43** 232-239
36. Waeber, R. P. I. Frazier and S. G. Henderson. 2013. Bisection search with noisy responses. *SIAM Journal on Control and Optimization.* **51**(3), 2261–2279
37. MacDonald, R. D., M. Ahghari, L. Walker, T. A. Carnes, S. G. Henderson, D. B. Shmoys. 2014. A novel application to optimize utilization for non-urgent air transfers. *Air-Medical Journal* **33** (1) 34 – 39
38. Maxwell, M. S., S. G. Henderson and H. Topaloglu, 2013. Tuning approximate dynamic programming policies for ambulance redeployment via direct search. *Stochastic Systems* **3** (2) 322 – 361
39. Maxwell, M.S., E. C. Ni, C. Tong, S. R. Hunter, S. G. Henderson and H. Topaloglu. 2014. A bound on the performance of an optimal ambulance redeployment policy. *Operations Research* **62** (5) 1014—1027.
40. Zhou, Z., D. S. Matteson, D. B. Woodard, S. G. Henderson and A. C. Micheas. 2015. A spatio-temporal point process model for ambulance demand. *Journal of the American Statistical Association – Applications and Case Studies*. **110** (509) 6 – 15.
41. Ni, E. C. and S. G. Henderson. 2015. How hard are steady-state queueing simulations? *ACM Transactions on Modeling and Computer Simulation*. Special issue honoring Don Iglehart. **25** (4) Article 27.
42. Chong, K.C., S. G. Henderson and M. E. Lewis. 2016. The vehicle mix decision in emergency medical service systems. *Manufacturing & Service Operations Management*. **18** (3) 347 – 360.
43. Pallone, S. N., P. I. Frazier and S. G. Henderson. 2016. Coupled bisection for root ordering. *Operations Research Letters*. **44** (2) 165-169.
44. Westgate, B. S., D. B. Woodard, D. S. Matteson and S. G. Henderson. 2016. Large-network travel time distribution estimation for ambulances. *European Journal of Operational Research*. **252** (1) 322—333.
45. Steckley, S. G., S. G. Henderson, D. Ruppert, R. Yang, D. W. Apley and J. Staum. 2016. Estimating the density of a conditional expectation. *Electronic Journal of Statistics*. **10** 736–760
46. Ni, E. C., D. F. Ciocan, S. G. Henderson and S. R. Hunter. 2017. Efficient ranking and selection in parallel computing environments. *Operations Research*. **65** (3) 821-836.
47. Chong, K.C., S. G. Henderson, and M. E. Lewis. 2017. Two-class routing with admission control and strict priorities. *Probability in the Engineering and Informational Sciences*. **32** (2) 163-178.
48. Frazier, P. I., S. G. Henderson and R. Waeber. 2018. Probabilistic bisection converges almost as quickly as stochastic approximation. *Mathematics of Operations Research.* **44** (2), 651—667.
49. Steele, P., S. G. Henderson and D. B. Shmoys. 2018. Aggregating courier deliveries. *Naval Research Logistics*. **65** (3) 187-202.
50. Eckman, D. J. and S. G. Henderson. Reusing search data in ranking and selection: What could possibly go wrong? *ACM Transactions on Modeling and Computer Simulation* **28** (3) Article 18.
51. Jian, N. and S. G. Henderson. 2020. Estimating the probability that a function observed with noise is convex. *INFORMS Journal on Computing*. **32** (2) 376 – 389. <https://doi.org/10.1287/ijoc.2018.0847>
52. D. Freund, S. G. Henderson and D. B. Shmoys. 2018. Minimizing multimodular functions and allocating capacity in bike-sharing systems. *Production and Operations Management.* Extended abstract. **27** (12) 2346 – 2349.
53. Freund, D., S. G. Henderson, E. O’Mahony and D. B. Shmoys, 2019. Analytics and bikes: riding tandem with Motivate to improve mobility. *INFORMS Journal on Applied Analytics.* **49** (5) 310 – 323.
54. Ma, S. and S. G. Henderson. 2019. Predicting the simulation budget in ranking and selection procedures. *ACM Transactions on Modeling and Computer Simulation.* **29** (3) Article 14, 1 – 25.
55. Eckman, D. J. and S. G. Henderson. 2021. Fixed-confidence, fixed-tolerance guarantees for selection-of-the-best procedures. *ACM Transactions on Modeling and Computer Simulation*. 31 (1) Article 7, 1 – 33.
56. R. Dandekar, S. G. Henderson, H. M. Jansen, J. McDonald, S. Moka, Y. Nazarathy, C. Rackauckas, T. M. Stace, P. G. Taylor, A. Vuorinen. 2021. Safe Blues: the case for virtual safe virus spread in the long-term fight against epidemics. *Patterns* **2** 1-9.
<https://doi.org/10.1016/j.patter.2021.100220>.
57. Eckman, D. J. and S. G. Henderson. 2021. Posterior-based stopping rules for Bayesian ranking-and-selection procedures. *INFORMS Journal on Computing*. 34 (3) 1711-1728. <https://doi.org/10.1287/ijoc.2021.1132>
58. Frazier, P. I., J. M. Cashore, N. Duan, S. G. Henderson, A. Janmohamed, B. Liu, D. B. Shmoys, J. Wan and Y. Zhang. Modeling for COVID-19 College Reopening Decisions: Cornell, A Case Study. *Proceedings of the National Academy of Sciences*. **119** (2). <https://doi.org/10.1073/pnas.2112532119>
59. Pieter L. van den Berg, Shane G. Henderson, Caroline J. Jagtenberg and Hemeng Li. 2022. How should volunteers be dispatched to out-of-hospital cardiac arrest cases? *Queueing Systems*. **100** 437-439 <https://doi.org/10.1007/s11134-022-09752-z>
60. Genevive R. Meredith, Diego G. Diel, Peter I. Frazier, Shane G. Henderson, Gary A. Koretzky, Jiayue Wan, Lorin D. Warnick. 2022. Routine surveillance and vaccination on a University Campus during the Spread of the Omicron Variant. *Journal of the American Medical Association Network Open*. 5 (5) e2212906 - e2212906. <https://doi.org/10.1001/jamanetworkopen.2022.12906>
61. Daniel Freund, Shane G. Henderson and David B. Shmoys. 2022. Minimizing multimodular functions and allocating capacity in bike-sharing systems. *Operations Research.* **70** (5) 2715-2731.
62. Azam Asanjarani, Aminath Shausan, Keng Chew, Thomas Graham, Shane G. Henderson, Hermanus M. Jansen, Kirsty Short, Peter G. Taylor, Aapeli Vuorinen, Yuvraj Yadav, Ilze Ziedins, Yoni Nazarathy. 2022. Emulation of epidemics via Bluetooth-based virtual safe virus spread: experimental setup, software, and data. *PLOS Digital Health*. **1** (12) 1-23. <https://doi.org/10.1371/journal.pdig.0000142>
63. Eckman, D. J., S. G. Henderson and S. Shashaani. 2023. Diagnostic tools for evaluating and comparing simulation-optimization algorithms. *INFORMS Journal on Computing* **35** (2) 350-367. <https://doi.org/10.1287/ijoc.2022.1261>
64. Woo-Hyung Cho, David B. Shmoys and Shane G. Henderson. 2022. SPT optimality (mostly) via linear programming. *Operations Research Letters*. **51** 99-104. <https://doi.org/10.1016/j.orl.2022.12.007>
65. Jiayue Wan, Casey L. Cazer, Marin E. Clarkberg, Shane G. Henderson, Scarlett E. Lee, Genevive Meredith, Marwan Osman, David B. Shmoys, Peter I. Frazier. 2022. Booster vaccination protection against SARS-CoV-2 infections in young adults during an Omicron BA.1-predominant period: a retrospective cohort study. *PLOS Medicine*. To appear.
66. Eckman, D. J., S. G. Henderson and S. Shashaani. 2023. SimOpt: A testbed for simulation-optimization experiments. *INFORMS Journal on Computing* **35** (2) 495-508.

## Submitted to/under revision for Archival Journals

1. Pieter L. van den Berg, Shane G. Henderson, Caroline J. Jagtenberg and Hemeng Li. 2021. Modeling the impact of community first responder systems. *Revised and resubmitted.*
2. Woo-Hyung Cho, Shane G. Henderson and David B. Shmoys. 2022. Scheduling with predictions. *Submitted.* <http://arxiv.org/abs/2212.10433>

*Refereed Conference Proceedings*

## Henderson, S. G., and S. P. Meyn. 1997. Efficient simulation of multiclass queueing networks. Proceedings of the 1997 Winter Simulation Conference. S. Andradottir, K. Healy, D. H. Withers, B. L. Nelson eds. IEEE. 216-223.

## Damerdji, H., S. G. Henderson, P. W. Glynn. 1997. Computational efficiency in output analysis. Proceedings of the 1997 Winter Simulation Conference. S. Andradottir, K. Healy, D. H. Withers, B. L. Nelson eds. IEEE. 208-215.

## Henderson, S. G., and A. Mason. 1998. Rostering by iterating integer programming and simulation. Proceedings of the 1998 Winter Simulation Conference. D. Medeiros and E. Watson, J. S. Carson, M. S. Manivannan eds. IEEE. 677-684.

## Glynn, P. W., and S. G. Henderson. 1998. Estimation of stationary densities for Markov chains. Proceedings of the 1998 Winter Simulation Conference. D. Medeiros and E. Watson, J. S. Carson, M. S. Manivannan eds. IEEE. 647-652.

## Henderson, S. G., and P. W. Glynn. 1999. Can the regenerative method be applied to discrete-event simulation? Proceedings of the 1999 Winter Simulation Conference. P. A. Farrington, H. B. Nembhard, J. Evans, D. Sturrock, eds. IEEE, Piscataway NJ. 367-373.

## Henderson, S. G., and A. Mason. 1999. Estimating ambulance requirements in Auckland, New Zealand. Proceedings of the 1999 Winter Simulation Conference. P. A. Farrington, H. B. Nembhard, J. Evans, D. Sturrock, eds. IEEE. 1670-1674.

## Henderson, S. G., and R. L. Tweedie. 2000. Perfect simulation for Markov chains arising from discrete-event simulation. In Proceedings of the 38th Annual Allerton Conference on Communication, Control, and Computing. 1125—1134.

## Henderson, S. G., B. A. Chiera, and R. M. Cooke. 2000. Generating “dependent” quasi-random numbers. Proceedings of the 2000 Winter Simulation Conference. J. A. Joines, R. R. Barton, K. Kang, and P. A. Fishwick, eds. IEEE. 527-536.

## Henderson, S. G. 2000. Mathematics for simulation. Proceedings of the 2000 Winter Simulation Conference. J. A. Joines, R. R. Barton, K. Kang, and P. A. Fishwick, eds. IEEE. 137-146.

## Ghosh, S., and S. G. Henderson. 2001. Chessboard distributions. Proceedings of the 2001 Winter Simulation Conference. B. A. Peters, J. Smith, D. Medeiros, M. Rohrer, eds. IEEE. 385—393.

## Henderson, S. G. 2001. Mathematics for simulation. Proceedings of the 2001 Winter Simulation Conference. B. A. Peters, J. Smith, D. Medeiros, M. Rohrer, eds. IEEE. 83—94.

## Ghosh, S., and S. G. Henderson. 2002. Properties of the NORTA method in higher dimensions. Proceedings of the 2002 Winter Simulation Conference. E.Yücesan, C.-H. Chen, J. L. Snowdon, and J. M. Charnes, eds. IEEE. 263—269.

## Barton, R. R., R. C. H. Cheng, S. E. Chick, S. G. Henderson, A. M. Law, L. M. Leemis, B. W. Schmeiser, L. W. Schruben, J. R. Wilson. 2002. Panel on current issues in simulation input modeling. Proceedings of the 2002 Winter Simulation Conference. E.Yücesan, C.-H. Chen, J. L. Snowdon, and J. M. Charnes, eds. IEEE. 353—369.

## Atlason, J., M. A. Epelman, and S. G. Henderson. 2003. Using simulation to approximate subgradients of convex performance measures in service systems. Proceedings of the 2003 Winter Simulation Conference. S. Chick, P. J. Sánchez, D. Ferrin, and D. J. Morrice, eds. IEEE. 1824—1832.

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## Henderson, S. G. 2003. Input model uncertainty: Why do we care and what should we do about it? Proceedings of the 2003 Winter Simulation Conference. S. Chick, P. J. Sánchez, D. Ferrin, and D. J. Morrice, eds. IEEE, Piscataway, NJ. 90—100.

## Kim, S. and S. G. Henderson. 2004. Adaptive control variates. Proceedings of the 2004 Winter Simulation Conference. R. Ingalls, M. Rossetti, J. Smith and B. Peters, eds. IEEE, Piscataway, NJ. 621—629.

## Henderson, S. G. 2005. Should we model dependence and nonstationarity, and if so how? Proceedings of the 2005 Winter Simulation Conference. M. E. Kuhl, N. M. Steiger, F. B. Armstrong, and J. A. Joines, eds. IEEE, Piscataway, NJ. 120-129.

## Steckley, S. G., S. G. Henderson and V. Mehrotra. 2005. Performance measures for service systems with a random arrival rate. Proceedings of the 2005 Winter Simulation Conference. M. E. Kuhl, N. M. Steiger, F. B. Armstrong, and J. A. Joines, eds. IEEE, Piscataway, NJ.

## Pasupathy, R., and S. G. Henderson. 2006. A testbed of simulation-optimization problems. Proceedings of the 2006 Winter Simulation Conference. L. F. Perrone, F. P. Wieland, J. Liu, B. G. Lawson, D. M. Nicol, and R. M. Fujimoto, eds. IEEE, Piscataway, NJ. 255—263.

## Ehrlichman, S. M. T., and S. G. Henderson. 2006. American options from MARS. Proceedings of the 2006 Winter Simulation Conference. L. F. Perrone, F. P. Wieland, J. Liu, B. G. Lawson, D. M. Nicol, and R. M. Fujimoto, eds. IEEE, Piscataway, NJ. 719—726.

## Kim, S., and S. G. Henderson. 2007. Non-linear control variates for regenerative steady-state simulation. Proceedings of the 2007 Winter Simulation Conference. S. G. Henderson, B. Biller, M.-H. Hsieh, J. Shortle, J. D. Tew, and R. R. Barton, eds. IEEE Piscataway, NJ. 430—438.

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## Ehrlichman. S. M. T. and S. G. Henderson. 2008. Comparing Two Systems: Beyond Common Random Numbers. Proceedings of the 2008 Winter Simulation Conference. S. J. Mason, R. R. Hill, L. Mönch, O. Rose, eds. IEEE, Piscataway NJ. 245—251.

## Henderson, S. G. 2008. Staying Sane on the Tenure Track. Proceedings of the 2008 Winter Simulation Conference. S. J. Mason, R. R. Hill, L. Mönch, O. Rose, eds. IEEE, Piscataway NJ. 2954—2959.

## Kim, S. and S. G. Henderson. 2008. The Mathematics of Continuous-Variable Simulation Optimization. Proceedings of the 2008 Winter Simulation Conference. S. J. Mason, R. R. Hill, L. Moench, O. Rose, eds. IEEE, Piscataway NJ. 122-132.

* 1. Friedman, E. J., S. G. Henderson, T. Byuen, and G. Gutiérrez Gallardo. 2009. Estimating the probability that the game of Monopoly never ends. Proceedings of the 2009 Winter Simulation Conference. M. D. Rossetti, R. R. Hill, B. Johansson, A. Dunkin, and R. G. Ingalls, eds. IEEE, Piscataway NJ. 380-391*.*
	2. Maxwell, M. S., S. G. Henderson, H. Topaloglu. 2009. Ambulance redeployment: An approximate dynamic programming approach. Proceedings of the 2009 Winter Simulation Conference. M. D. Rossetti, R. R. Hill, B. Johansson, A. Dunkin, and R. G. Ingalls, eds. IEEE, Piscataway NJ. 1850-1860*.* Best Applied Paper Finalist.
	3. Rolf Waeber, Peter I. Frazier and Shane G. Henderson. 2010. Performance measures for ranking and selection procedures. Proceedings of the 2010 Winter Simulation Conference. B. Johansson, S. Jain, J. Hugan and E. Yücesan, eds. 1235-1245.
	4. Maxwell, M. S., S. G. Henderson, H. Topaloglu. 2010. Identifying effective policies in approximate dynamic programming: beyond regression. Proceedings of the 2010 Winter Simulation Conference. B. Johansson, S. Jain, J. Hugan and E. Yücesan, eds. 1079-1087.
	5. Rolf Waeber, Peter I. Frazier and Shane G. Henderson. 2011. A Bayesian approach to stochastic root finding. Proceedings of the 2011 Winter Simulation Conference. S. Jain, R. R. Creasey, J. Himmelspach, K. P. White, and M. Fu, eds. 4038-4050.
	6. Raghu Pasupathy and Shane G. Henderson. 2011. SimOpt: A library of simulation optimization problems. Proceedings of the 2011 Winter Simulation Conference. S. Jain, R. R. Creasey, J. Himmelspach, K. P. White, and M. Fu, eds. 4080-4090.

##  (Oral and Poster Presentation) Russell D. MacDonald, Mahvareh Ahghari, Tim A. Carnes, Shane G. Henderson and David B. Shmoys. Use of a novel application to optimize aircraft utilization for non-urgent patient transfers. 2011 Air Medical Transport Conference. http://www.aams.org/AAMS/Education\_\_\_Meetings/AMTC\_2011/Scientific\_Assembly/aams/EducationMeetings/AMTC\_2011/Education\_Sessions/Scientific\_Assembly.aspx?hkey=44fc516e-e236-4a6e-bcf0-6f37443379bb

* 1. Shane G. Henderson, Sheldon Jacobson and Stewart Robinson. 2012. Tutorial: Teaching an advanced simulation topic. Proceedings of the 2012 Winter Simulation Conference. C. Laroque, J. Himmelspach, R. Pasupathy, O. Rose, and A.M. Uhrmacher, eds. 13—21.
	2. Eric Cao Ni, Susan R. Hunter, Shane G. Henderson and Huseyin Topaloglu. 2012. Exploring bounds on ambulance deployment policy performance. Proceedings of the 2012 Winter Simulation Conference. C. Laroque, J. Himmelspach, R. Pasupathy, O. Rose, and A.M. Uhrmacher, eds. 497—508.
	3. (Poster presentation) Russell D. Macdonald, Laura Walker, Mahvareh Ahghari, Tim A. Carnes, Shane G. Henderson and David B. Shmoys. 2012. Prospective, real-time use of an optimization application for non-urgent patient transfers using fixed-wing aircraft. *2012 Air Medical Transport Conference*.
	4. Eric Cao Ni, Susan R. Hunter and Shane G. Henderson. 2013. Ranking and selection in a high performance computing environment. Proceedings of the 2013 Winter Simulation Conference. R. Pasupathy, S.-H. Kim, A. Tolk, R. Hill, and M. E. Kuhl, eds. 833 – 845.
	5. Michael C. Fu, Güzin Bayraksan, Shane G. Henderson, Barry L. Nelson, Warren B. Powell, Ilya O. Ryzhov and Ben Thengvall. 2014. Simulation optimization: A panel on the state of the art in research and practice. Proceedings of the 2014 Winter Simulation Conference. A. Tolk, S. D. Diallo, I. O. Ryzhov, L. Yilmaz, S. Buckley, and J. A. Miller, eds. 3696 – 3706.
	6. Nanjing Jian, Shane G. Henderson and Susan R. Hunter. 2014. Sequential detection of convexity from noisy function evaluations. Proceedings of the 2014 Winter Simulation Conference. A. Tolk, S. D. Diallo, I. O. Ryzhov, L. Yilmaz, S. Buckley, and J. A. Miller, eds. 3892 – 3903.
	7. Eric C. Ni, Shane G. Henderson and Susan R. Hunter. 2014. A comparison of two parallel ranking and selection procedures. Proceedings of the 2014 Winter Simulation Conference. A. Tolk, S. D. Diallo, I. O. Ryzhov, L. Yilmaz, S. Buckley, and J. A. Miller, eds. 3761 – 3772.
	8. Stephen Pallone, Peter I. Frazier and Shane G. Henderson. 2014. Multisection: Parallelized bisection. Proceedings of the 2014 Winter Simulation Conference. A. Tolk, S. D. Diallo, I. O. Ryzhov, L. Yilmaz, S. Buckley, and J. A. Miller, eds. 3773 – 3784.
	9. Divya Singhvi, Somya Singhvi, Peter I. Frazier, Shane G. Henderson, Eoin O’ Mahony, David B. Shmoys, Dawn B. Woodard. 2015. Predicting bike usage for New York City’s bike sharing system. Association for the Advancement of Artificial Intelligence Proceedings.
	10. Eric C. Ni, Dragos F. Ciocan, Shane G. Henderson and Susan R. Hunter. 2015. Comparing message passing interface and mapreduce for large-scale parallel ranking and selection. Proceedings of the 2015 Winter Simulation Conference. L. Yilmaz, W. K. V. Chan, T. M. K. Roeder, C. Macal and M.D. Rosetti, eds. 3858 – 3867.
	11. Nanjing Jian and Shane G. Henderson. 2015. An introduction to simulation optimization. Proceedings of the 2015 Winter Simulation Conference. L. Yilmaz, W. K. V. Chan, T. M. K. Roeder, C. Macal and M.D. Rosetti, eds. 1780 – 1794.
	12. Nanjing Jian, Daniel Freund, Holly Wiberg and Shane G. Henderson. 2016. Simulation optimization for a large-scale bike-sharing system. Proceedings of the 2016 Winter Simulation Conference. T. M. K. Roeder, P. I. Frazier, R. Szechtman, and E. Zhou, eds. 602—613.
	13. Daniel Freund, Shane G. Henderson, David B. Shmoys. 2017. Minimizing multimodular functions and allocating capacity in bike-sharing systems. Integer Programming and Combinatorial Optimization Proceedings. F. Eisenbrand and J. Koenemann, eds. Springer. 186 – 198.
	14. Sijia Ma and Shane G. Henderson. 2017. An efficient fully sequential selection procedure guaranteeing probably approximately correct selection. Proceedings of the 2017 Winter Simulation Conference. W. K. V. Chan, A. D’Ambrogio, G. Zacharewicz, N. Mustafee, G. Wainer, and E. Page, eds. IEEE, Piscataway NJ. 2225 – 2236.
	15. Michael C. Fu and Shane G. Henderson. 2017. History of seeking better solutions, AKA simulation optimization. Proceedings of the 2017 Winter Simulation Conference. W. K. V. Chan, A. D’Ambrogio, G. Zacharewicz, N. Mustafee, G. Wainer, and E. Page, eds. IEEE, Piscataway NJ. 131 – 157.
	16. Naijia (Anna) Dong, David J. Eckman, Matthias Poloczek, Xueqi Zhao and Shane G. Henderson. 2017. Comparing the finite-time performance of simulation-optimization algorithms. Proceedings of the 2017 Winter Simulation Conference. W. K. V. Chan, A. D’Ambrogio, G. Zacharewicz, N. Mustafee, G. Wainer, and E. Page, eds. IEEE, Piscataway NJ. 2206 – 2217.
	17. Jeffrey Smith, Christos Alexopoulos, Shane G. Henderson and Lee Schruben. 2017. Teaching undergraduate simulation - 4 questions for 4 experienced instructors. Proceedings of the 2017 Winter Simulation Conference. W. K. V. Chan, A. D’Ambrogio, G. Zacharewicz, N. Mustafee, G. Wainer, and E. Page, eds. IEEE, Piscataway NJ. 4264 – 4275.
	18. David J. Eckman and Shane G. Henderson. 2018. Probability of good selection guarantees. Proceedings of the 2018 Winter Simulation Conference. M. Rabe, A. A. Juan, N. Mustafee, A. Skoogh, S. Jain, and B. Johansson, eds. IEEE. Piscataway NJ. 351 – 365.
	19. David J. Eckman, Shane G. Henderson and Raghu Pasupathy. 2019. Redesigning a testbed of simulation-optimization problems and solvers for experimental comparison. Proceedings of the 2019 Winter Simulation Conference. N. Mustafee, K.-H.G. Bae, S. Lazarova-Molnar, M. Rabe, C. Szabo, P. Haas, and Y.-J. Son, eds. 3457 – 3467.
	20. David J. Eckman and Shane G. Henderson. 2020. Biased gradient estimators in simulation optimization. Proceedings of the 2020 Winter Simulation Conference. K.-H. Bae, B. Feng, S. Kim, S. Lazarova-Molnar, Z. Zheng, T. Roeder, and R. Thiesing, eds. IEEE. 2935 – 2946.
	21. Shane G. Henderson. 2021. Reflections on Simulation Optimization. Proceedings of the 2021 Winter Simulation Conference. S. Kim, B. Feng, K. Smith, S. Masoud, Z. Zheng, C. Szabo, and M. Loper, eds. IEEE. *To appear*.
	22. Woo-Hyung Cho, David B. Shmoys and Shane G. Henderson. 2022. SPT optimality via linear programming. The 15th Workshop on Models and Algorithms for Planning and Scheduling 2022. Extended Abstract.
	23. Matthew T. Ford, David J. Eckman and Shane G. Henderson. 2022. Automatic differentiation for gradient estimators in simulation. Proceedings of the 2022 Winter Simulation Conference. B. Feng, G. Pedrielli, Y. Peng, S. Shashaani, E. Song, C.G. Corlu, L.H. Lee, and P. Lendermann, eds. IEEE. 3134-3145.
	24. David J. Eckman, Shane G. Henderson and Sara Shashaani. 2023. Stochastic constraints: How feasible is feasible? Proceedings of the 2023 Winter Simulation Conference. C. G. Corlu, S. R. Hunter, H. Lam, B. S. Onggo, J. Shortle, and B. Biller, eds. IEEE. *Submitted*.
	25. Shane G. Henderson. 2023. Practical impact and academia are not antonyms. Proceedings of the 2023 Winter Simulation Conference. C. G. Corlu, S. R. Hunter, H. Lam, B. S. Onggo, J. Shortle, and B. Biller, eds. IEEE. *Submitted*.

## Other Conference Proceedings

* + 1. Mason, A., P. Day, S. G. Henderson, J. Meyer, J. Snowdon, and J. Waite. 2003. Development of a simulation package for modelling emergency medical service operations. Proceedings of the 8th Annual International Conference on Industrial Engineering - Theory, Applications and Practice. 556—559.
		2. Atlason, J., M. Epelman and S. G. Henderson. 2002. Combining simulation and cutting plane methods in service systems. Proceedings of the 2002 National Science Foundation Design, Service and Manufacturing Grantees Conference.
		3. Henderson, S. G. and S. P. Meyn. 2002. Identifying effective policies for multiclass networks. Proceedings of the 2002 National Science Foundation Design, Service and Manufacturing Grantees Conference.
		4. Henderson, S. G., and A. Mason 2000. BartSim: A tool for analysing and improving ambulance performance in Auckland, New Zealand. Proceedings of the 33rd Conference of the Operational Research Society of New Zealand. 57-64.
		5. Henderson, S. G., A. Mason, I. Ziedins, R. Thomson, D. Burgess, T. Seabrook. 1998. Heuristics in Rostering for Call Centres. Proceedings of the 33rd Conference of the Operational Research Society of New Zealand. 253-261.
		6. Birge, J. R., S. G. Henderson and L. Olsen. 1997. Improving quality in introductory industrial engineering through case studies and communication. ASEE Annual Conference Proceedings.

## Other Publications

1. Ehrlichman, S. M. T., and S. G. Henderson. 2007. Deterministic and stochastic root finding in one dimension for increasing convex functions*.* Unpublished manuscript.
2. Henderson, S. G., and S. P. Meyn. 2005. Variance reduction for simulation in multiclass processing networks. Submitted to *IIE Transactions* and apparently accepted, but never appeared!
3. Atlason, J., M. A. Epelman and S. G. Henderson. 2004. Optimizing call center staffing using simulation and analytic center cutting plane methods. Tech Report 04-09. IOE Department, University of Michigan, Ann Arbor MI.
4. Friedman, E. and S. G. Henderson. 2002. SAP: An efficient scheduling protocol for web servers. Technical Report, ORIE Department, Cornell University, Ithaca, NY.
5. Henderson, S. G. 2002. Book review of J. Thompson. 2000. *Simulation: A Modeler's Approach.* Wiley, New York. *Journal of the American Statistical Association.*
6. Henderson, S. G. 1997. Variance Reduction Via an Approximating Markov Process. Ph.D. Thesis. Dept of Operations Research, Stanford University, Stanford CA.
7. Henderson, S. G., and P. W. Glynn. 1995. Derandomizing and rerandomizing variance estimators. Technical Report, Dept. of Operations Research, Stanford University.
8. Ma, S. and S. G. Henderson. 2018. A sequential selection procedure delivering a probably-approximately-correct selection using confidence bands. Manuscript.
9. Chong, K.C., S. G. Henderson, M. E. Lewis and H. Topaloglu. 2017. A bound on the performance of optimal ambulance redeployment policies in loss systems. Manuscript
10. Guo, J., S. G. Henderson and P. R. Steele. Enforcing separation of visits in an air-ambulance application. Manuscript
11. Pallone, S. N., P. I. Frazier and S. G. Henderson. 2017. Bayes-optimal entropy pursuit for active choice-based preference learning. Manuscript

# Selected Invited Addresses

Keynote. Modeling for COVID-19 College Reopening Decisions: Cornell, A Case Study. INFORMS 2022 National Meeting. Indianapolis, IN. October 18, 2022.

Plenary. Dutch Academy of Sciences. Modeling Enabled Cornell University to Reopen for In-Person Instruction in Fall 2020. Online Presentation. April 19, 2021.

Plenary. Yes, Data is Great, But… Cornell Day of Data. Ithaca, NY. January 22, 2021.

Plenary. Under the Hood of Bike Sharing. Mostly OM, Shenzhen, China. June 1, 2019.

Plenary. Under the Hood of Bike Sharing. IMA and OR Society Conference on Mathematics of OR, Birmingham, UK. April 25, 2019.

Keynote. With David Shmoys. Smarter Tools for (Citi)Bike Sharing: Cornell Rides Tandem with Motivate. INFORMS National Meeting. Houston TX. October 25, 2017

Plenary. (Citi)Bike Sharing. Mostly OM, Beijing. May 28, 2016.

(Citi)Bike Sharing. Fields Institute, Toronto. May 24, 2016.

Plenary. Healthcare Management Workshop. City University of Hong Kong. Jan 5, 2014.

Plenary. EURO Stochastic Models Working Group. Real-Time Control of Ambulance Fleets, and Simulation Optimization using High-Performance Computing. Mannheim, Germany. July 2, 2014.

Plenary. Australia New Zealand Industrial and Applied Mathematics Conference, Rotorua, New Zealand. February 2014.

Keynote. Ambulance Deployment. The 2012 German Operations Research Society Conference. Hannover, Germany. September 5-7, 2012.

Direct Policy Search. NSF Workshop: Conversation between CS and OR on Stochastic Optimization. May 2012.

Keynote. Real-time Ambulance-Fleet Control via an Amalgam of Simulation, Optimization, and Statistics. The 2012 Operational Research Society Simulation Workshop. Worcestershire, England. March 27-28, 2012.

Keynote: Advances in EMS system planning and research. The Optima Corporation Users Conference. Fort Myers, FL. January 23, 2012.

Keynote: Where should ambulances be stationed? IASTED International Conference on Modelling, Simulation and Identification. Pittsburgh PA. Nov 7-9, 2011.

Simulation Optimization Workshop. May 2010. Plenary presentation (with Raghu Pasupathy). A Tale of Two Topics: (i) SAA Review and (ii) Testbed Update.

Using Math to Design Ambulance Deployment Plans, Cancer Treatments and Yachts. NY State Society of Professional Engineers, MATHCOUNTS Recognition Dinner. May 2010.

Recovering Routes and Travel Speeds on Road Networks from GPS Breadcrumbs. Supply Chain Group, Business School, Penn State University. March 2010.

Plenary speaker at PhD Colloquium at the 2008 Winter Simulation Conference

Operating on Health Care conference, Vancouver BC. August 2007. Relocating ambulances in real time.

INFORMS Practice Conference, Vancouver BC. May 2007. Relocating ambulances in real time.

Robust intensity-modulated radiation therapy treatment planning. CWI, Amsterdam, Netherlands. January 2006.

Call centers and Poisson’s equation. Plenary, 31st Conference on the Mathematics of Operations Research, Lunteren, Netherlands. January 2006.

Variance reduction for Markov processes and Poisson’s equation. Plenary, 31st Conference on the Mathematics of Operations Research, Lunteren, Netherlands. January 2006.

Recent Useful Trends in Simulation Methodology. Tutorial at INFORMS San Francisco, November 2005

Simulation modeling and analysis for EMS planning. Edmonton EMS Workshop, University of Alberta, Edmonton. August 2005.

Robust optimization: Concepts and Examples. INFORMS Practice Conference. April 2005.

Robust radiation treatment planning for cancer therapy. Engineering Science Dept, University of Auckland. April 2005.

What are you missing in your simulation model? INFORMS Practice Conference, April 2004.

Staffing service systems via simulation. Call Center Forum, Wharton School University of Pennsylvania. May 2003.

Panel on current issues in simulation input modeling. 2002 Winter Simulation Conference.

2001 Winter Simulation Conference. Mathematics for Simulation.

Yacht Match Racing Simulation and the America’s Cup. University of Waterloo. June 2000.

Can the regenerative method be applied to general discrete event simulation? 1999 Winter Simulation Conference.

# Representative Consulting Experience

*Lyft. July 2019 – present.* Operations Research tools for ride hailing.

*American Medical Response. May 2013.* Expert witness.

*American Medical Response. April 2010:* Analyzed feasibility of meeting service level requirements with given ambulance resources in Alameda County, California.

*Optimal Decision Technologies. October 2003:* facilitated a discussion between this company and the Office of Management and Budget in New York city relating to emergency service planning.

*Motorola (Cellular Networks) July 2000:* determined methods for improving the efficiency of simulations run on NCSA computers.

*St. Johns Ambulance Service 1998 - 2001:* determining ambulance location and numbers, and the staffing thereof. Preliminary study used queueing theory, later work involved discrete-event simulation modeling and the development of graphical analysis tools.

*New Zealand Fire Service, 1998*. Positioning of stations within the Auckland region. Advised on methods for determining “optimal” station locations.

*Watercare 1998:* Analyzed decision analysis evidence prepared by R. G. Laws on behalf of Tainui people, prepared rebuttal evidence. Employed multi-criteria decision analysis methods.

*Police Communications Centre – Auckland New Zealand* *1998*. Staffing problem. Advised on how staffing levels for the call centre should be determined.

*Chrysler Corp 1997:* Member of a team implementing spreadsheet tools to assist Chrysler Corp (Small Car Platform) in decision making in the presence of uncertainty.