

Samuel Burer

Professor
Department of Management Sciences
Henry B. Tippie College of Business
University of Iowa

Iowa City, IA 52242-1994
+1 (319) 335-0931
samuel-burer@uiowa.edu
tippie.uiowa.edu/sburer

EXPERIENCE

- 2012.07 – present** **Professor**, Department of Management Sciences, University of Iowa
Henry B. Tippie Research Fellow (2012–present)
Faculty Director, Business Analytics Graduate Program (2014–present)
Faculty, Applied Mathematical and Computational Sciences (2004–present)
- 2007.07 – 2012.06** **Associate Professor**, Department of Management Sciences, University of Iowa
Martha and Dennis Hesse Faculty Fellow (2004–12)
- 2009.04 – 2009.05** **Visiting Associate Professor**, Department of CS and Systems, Sapienza Università di Roma
- 2007.01 – 2007.05** **Visiting Assistant Professor**, Tepper School of Business, Carnegie Mellon University
- 2001.08 – 2007.06** **Assistant Professor**, Department of Management Sciences, University of Iowa

EDUCATION

Georgia Institute of Technology

- Ph.D., Algorithms, Combinatorics, and Optimization, August 2001
- *New Algorithmic Approaches for Semidefinite Programming with Applications to Combinatorial Optimization*, advised by R.D.C. Monteiro

University of Georgia

- B.S., Mathematics, June 1997
- First Honor Graduate, *Summa Cum Laude*, With Highest Honors

RESEARCH AND TEACHING INTERESTS

- Analytics, operations research, management sciences
- Discrete and continuous optimization
- Convex, copositive, semidefinite, and nonlinear optimization
- Decision making and optimization under uncertainty

GRANTS

- National Science Foundation Grant for *CAREER: Computation, Theory, and Applications for Nonconvex Quadratic and Conic Optimization*, \$400,000, 2006–12
- National Science Foundation Grant for *Collaborative Research: Theory and Implementation of Semidefinite Programming and Its Application to Combinatorial Optimization*, \$255,818, 2000–05
- New Technology in the Learning Environment Grant, University of Iowa, \$1,500, 2004
- Old Gold Fellowships, University of Iowa, \$12,000, 2002–03

JOURNAL PUBLICATIONS (listed in reverse chronological order by appearance of manuscript)

- [J01] [A Gentle, Geometric Introduction to Copositive Optimization](#), *Mathematical Programming Series B*, 151(1), 89–116, 2015. DOI 10.1007/s10107-015-0888-z.
- [J02] [A Two-Variable Analysis of the Two-Trust-Region Subproblem](#), with B. Yang, *SIAM Journal on Optimization*, 26(1), 661–680, 2016.
- [J03] [Faster, but Weaker, Relaxations for Quadratically Constrained Quadratic Programs](#), with S. Kim and M. Kojima, *Computational Optimization and Applications*, 59(1), 27–45, 2014.
- [J04] [The Trust Region Subproblem with Non-Intersecting Linear Constraints](#), with B. Yang, *Mathematical Programming Series A*, 149(1–2), 253–264, 2015.
- [J05] [Non-Convex Mixed-Integer Nonlinear Programming: A Survey](#), with A. Letchford, *Surveys in Operations Research and Management Science*, 17, 97–106, 2012.
- [J06] [A First-Order Smoothing Technique for a Class of Large-Scale Linear Programs](#), with J. Chen, *SIAM Journal on Optimization*, 24(2), 598–620, 2014.
- [J07] [Robust Rankings for College Football](#), *Journal of Quantitative Analysis in Sports*, 8(2), 2012, DOI 10.1515/1559-0410.1405.
- [J08] [Unbounded Convex Sets for Non-Convex Mixed-Integer Quadratic Programming](#), with A. Letchford, *Mathematical Programming Series A*, 143(1-2), 231-256, 2014.
- [J09] [Representing Quadratically Constrained Quadratic Programs As Generalized Copositive Programs](#), with H. Dong, *Operations Research Letters*, 40(3), 203-206, 2012.
- [J10] [Second-Order Cone Constraints for Extended Trust-Region Subproblems](#), with K. Anstreicher, *SIAM Journal on Optimization*, 23(1), 432-451, 2013.
- [J11] [Globally Solving Nonconvex Quadratic Programming Problems via Completely Positive Programming](#), with J. Chen, *Mathematical Programming Computation*, 4(1), 33-52, 2012.
- [J12] [Separation and Relaxation for Cones of Quadratic Forms](#), with H. Dong, *Mathematical Programming Series A*, 137(1), 343-370, 2013.
- [J13] [Modifying Soysters Model for the Traveling Salesman Problem with Interval Travel Times](#), with N. Cho and A.M. Campbell, *Far East Journal of Applied Mathematics*, 86(2), 117–144, 2014.
- [J14] [Optimizing a Polyhedral-Semidefinite Relaxation of Completely Positive Programs](#), *Mathematical Programming Computation*, 2(1), 1-19, 2010.
- [J15] [A Semidefinite Approach to the Hypergraph Minimum Bisection Problem](#), with C. Choi, *Optimization*, 60(3):413-427, 2011.
- [J16] [On Non-Convex Quadratic Programming with Box Constraints](#), with A.N. Letchford, *SIAM Journal on Optimization*, 20(2):1073-1089, 2009.
- [J17] [The Difference Between 5x5 Doubly Nonnegative and Completely Positive Matrices](#), with K. Anstreicher and M. Dür, *Linear Algebra and Its Applications*, 431:1539-1552, 2009.
- [J18] [A p-Cone Sequential Relaxation Procedure for 0-1 Integer Programs](#), with J. Chen, *Optimization Methods and Software*, 24(4):523-548, 2009.
- [J19] [Relaxing the Optimality Conditions of Box QP](#), with J. Chen, *Computational Optimization and Applications*, 48:653-673, 2011.

- [J20] [Computable Representations for Convex Hulls of Low-Dimensional Quadratic Forms](#), with K. Anstreicher, *Mathematical Programming Series B*, 124(1-2):33-43, 2010.
- [J21] [Globally Solving Box-Constrained Nonconvex Quadratic Programs with Semidefinite-Based Finite Branch-and-Bound](#), with D. Vandenbussche, *Computational Optimization and Applications*, 43(2):181-195, 2009.
- [J22] [On the Copositive Representation of Binary and Continuous Nonconvex Quadratic Programs](#), *Mathematical Programming Series A*, 120(2):479-495, 2009.
- [J23] [On Handling Free Variables in Interior-Point Methods for Conic Linear Optimization](#), with M.F. Anjos, *SIAM Journal on Optimization*, 18(4):1310-1325, 2007.
- [J24] [Ensemble Pruning via Semi-definite Programming](#), with Y. Zhang and W.N. Street, *Journal of Machine Learning Research*, 7:1315-1338, 2006.
- [J25] [A Finite Branch-and-Bound Algorithm for Nonconvex Quadratic Programming via Semidefinite Relaxations](#), with D. Vandenbussche, *Mathematical Programming Series A*, 113(2):259-282, 2008.
- [J26] [Coordinating the Supply Chain in the Agricultural Seed Industry](#), with P.C. Jones and T. Lowe, *European Journal of Operational Research*, 185:354-377, 2008.
- [J27] [Solving Maximum-Entropy Sampling Problems Using Factored Masks](#), with J. Lee, *Mathematical Programming Series B*, 109:263-281, 2007.
- [J28] [Newsvendor Games: Convex Optimization of Centralized Inventory Operations](#), with M. Dror, *TOP*, 20(3):707-728, 2012.
- [J29] [Computational Enhancements in Low-Rank Semidefinite Programming](#), with C. Choi, *Optimization Methods and Software*, 21(3):493-512, 2006.
- [J30] [Solving Lift-and-Project Relaxations of Binary Integer Programs](#), with D. Vandenbussche, *SIAM Journal on Optimization*, 16(3):726-750, 2006.
- [J31] [Local Minima and Convergence in Low-Rank Semidefinite Programming](#), with R.D.C. Monteiro, *Mathematical Programming Series A*, 103:427-444, 2005.
- [J32] [D.C. Versus Copositive Bounds for Standard QP](#), with K. Anstreicher, *Journal of Global Optimization*, 33:299-312, 2005.
- [J33] [Semidefinite Programming in the Space of Partial Positive Semidefinite Matrices](#), *SIAM Journal on Optimization*, 14:139-172, 2003.
- [J34] [A Computational Study of a Gradient-Based Log-Barrier Algorithm for a Class of Large-Scale SDPs](#), with R.D.C. Monteiro and Y. Zhang, *Mathematical Programming Series B*, 95:359-379, 2003.
- [J35] [A Nonlinear Programming Algorithm for Solving Semidefinite Programs via Low-Rank Factorization](#), with R.D.C. Monteiro, *Mathematical Programming Series B*, 95:329-357, 2003.
- [J36] [Maximum Stable Set Formulations and Heuristics Based on Continuous Optimization](#), with R.D.C. Monteiro and Y. Zhang, *Mathematical Programming Series A*, 94:137-166, 2002.
- [J37] [Rank-Two Relaxation Heuristics for Max-Cut and Other Binary Quadratic Programs](#), with R.D.C. Monteiro and Y. Zhang, *SIAM Journal on Optimization*, 12:503-521, 2001.
- [J38] [Interior Point Algorithms for Semidefinite Programming Based on a Nonlinear Formulation](#), with R.D.C. Monteiro and Y. Zhang, *Computational Optimization and Applications*, 22:49-79, 2002.
- [J39] [Solving a Class of Semidefinite Programs via Nonlinear Programming](#), with R.D.C. Monteiro and Y. Zhang, *Mathematical Programming Series A*, 93:97-122, 2002.

- [J40] [A General Framework for Establishing Polynomial Convergence of Long-Step Methods for Semidefinite Programming](#), with R.D.C. Monteiro, *Optimization Methods and Software*, 18:1-38, 2003.
- [J41] [A Projected Gradient Algorithm for Solving the Maxcut SDP Relaxation](#), with R.D.C. Monteiro, *Optimization Methods and Software*, 15:175-200, 2001.

REFEREED BOOK CHAPTERS (listed in reverse chronological order)

- [B01] [Copositive Programming](#), *Handbook of Semidefinite, Cone and Polynomial Optimization: Theory, Algorithms, Software and Applications*, edited by M.F. Anjos and J.B. Lasserre, 201-218, 2011.
- [B02] [The MILP Road to MIQCP](#), with A. Saxena, *IMA Volumes in Mathematics and Its Applications*, edited by J. Lee and S. Leyffer, 154:373-406, 2011.

REFEREED CONFERENCE PUBLICATIONS

- [C01] [Sharing Classifiers Among Ensembles from Related Problem Domains](#), with Y. Zhang and W.N. Street, *Proceedings of the Fifth IEEE International Conference on Data Mining (ICDM'05)*, 522-529, 2005.

MANUSCRIPTS UNDER REVIEW (listed in reverse chronological order by appearance of manuscript)

- [M01] [Quadratic Programs with Hollows](#), with B. Yang and K. Anstreicher, January 2016, submitted to *Mathematical Programming Series A*.
- [M02] [Robust Sensitivity Analysis of the Optimal Value of Linear Programming](#), with G. Xu, September 2015, revised November 2015, submitted to *Operations Research*.
- [M03] [Nearly Efficient Tuitions and Subsidies in American Public Higher Education](#), with G. Fethke, August 2015, submitted to *Economics of Education Review*.
- [M04] [A Branch-and-Bound Algorithm for Instrumental Variable Quantile Regression](#), with G. Xu, August 2014, under revision for *Mathematical Programming Computation*.
- [M05] [How to Convexify the Intersection of a Second Order Cone and a Nonconvex Quadratic](#), with F. Kılınç-Karzan, June 2014, revised June 2015, under second-round review for *Mathematical Programming Series A*.

PRESENTATIONS (listed in reverse chronological order)

- [P01] Robust Sensitivity Analysis, University of Minnesota, Minnesota, MN, May 2016 (invited).
- [P02] How To Convexify The Intersection Of A Second Order Cone And A Nonconvex Quadratic, INFORMS, Philadelphia, PA, October 2015 (invited).
- [P03] A Gentle, Geometric Introduction to Copositive Optimization, Twenty-Second International Symposium on Mathematical Programming, Pittsburgh, July 2015 (invited semi-plenary).
- [P04] Robust Sensitivity Analysis for Linear Programming, First Pacific Optimization Conference, Wuxi, China, November 2014 (invited).
- [P05] A Gentle, Geometric Introduction to Copositive Optimization, Workshop on Emerging Topics in Conic and Discrete Optimization, Engineering Systems and Design, Singapore University of Technology and Design, Singapore, October 2014 (invited tutorial).
- [P06] Robust Rankings for American College Football, Università degli Studi di Roma "Tor Vergata," Rome, May 2014 (invited).

- [P07] Interior-Point Methods for Linear Programming, Università degli Studi di Roma “Tor Vergata,” Rome, May 2014 (invited).
- [P08] Copositive Optimization, Third University of Florida SIAM Gators Conference, Gainesville, FL, March 2014 (invited faculty speaker).
- [P09] A Two-Variable Analysis of the Two-Trust-Region Subproblem, Eighteenth Combinatorial Optimization Workshop, CNRS Centre Paul Langevin, Aussois, France, January 2014 (invited).
- [P10] The Trust Region Subproblem with Non-Intersecting Linear Constraints, INFORMS, Minneapolis, MN, October 2013 (invited).
- [P11] Robust Rankings for College Football, INFORMS, Minneapolis, MN, October 2013 (invited).
- [P12] Robust Rankings for American College Football, Tilburg University, Tilburg, Netherlands, July 2013 (invited).
- [P13] Copositive Optimization, Fourth International Conference on Continuous Optimization (ICCOPT-IV), Lisbon, Portugal, July 2013 (invited semi-plenary).
- [P14] Unbounded Convex Sets for Non-Convex Mixed-Integer Quadratic Programming, INFORMS Computing Society Conference, Santa Fe, NM, January 2013 (invited).
- [P15] Robust Rankings for College Football, Department of Mathematics, Grinnell College, December 2012 (invited).
- [P16] Robust Rankings for American College Football, Mixed Integer Programming (MIP), Davis, CA, July 2012 (invited).
- [P17] Uncertainty and Robustness: Two Optimization Models, Fuqua School of Business, Duke University, March 2012.
- [P18] Separation and Relaxation for Completely Positive Matrices, Tenth SIAM Conference on Optimization, Darmstadt, Germany, May 2011 (invited).
- [P19] Cuts for Nonconvex Quadratic Programming, Optimization Days, Montreal, May 2011 (invited).
- [P20] Cuts for Nonconvex Quadratic Programming, IBM T. J. Watson Research Center, Yorktown Heights, NY, March 2011 (invited).
- [P21] Separating Cuts for Quadratic Programs, INFORMS, Austin, TX, November 2010 (invited).
- [P22] New Approximations for Copositive Matrices, INFORMS, Austin, TX, November 2010 (invited).
- [P23] Nonconvex Quadratic Programming: Models and Algorithms, West Coast Optimization Meeting, University of Washington, Seattle, WA, May 2010 (invited).
- [P24] Nonconvex Quadratic Programming with Box Constraints, Operations Research Seminar, Carnegie Mellon University, Pittsburgh, PA, April 2010 (invited).
- [P25] Nonconvex Quadratic Programming: Models and Algorithms, Department of Industrial and Systems Engineering, University of Wisconsin-Madison, Madison, WI, September 2009 (invited).
- [P26] Optimizing a Polyhedral-Semidefinite Relaxation of Completely Positive Programs, Twentieth International Symposium on Mathematical Programming, Chicago, August 2009 (invited).
- [P27] Optimizing a Polyhedral-Semidefinite Relaxation of Completely Positive Programs, Università di Firenze, Florence, May 2009 (invited).
- [P28] Short Course on Semidefinite Programming, Sapienza Università di Roma, Rome, May 2009 (invited).
- [P29] Optimizing a Polyhedral-Semidefinite Relaxation of Completely Positive Programs, OptimA Workshop, University of Illinois Urbana-Champaign, March 2009 (invited).
- [P30] New Results on Non-Convex Quadratic Programming, Chinese University of Hong Kong, November 2008

(invited).

- [P31] Convex Hulls of Low-dimensional Quadratic Forms over Polytopes, INFORMS, Washington D.C., October 2008 (invited).
- [P32] On the Copositive Representation of Binary and Continuous Nonconvex Quadratic Programs, Ninth SIAM Conference on Optimization, Boston, May 2008 (invited).
- [P33] Representing NP-Hard Problems as Convex Programs, Northwestern University, Evanston, November 2007 (invited).
- [P34] On the Copositive Representation of Binary and Continuous Nonconvex Quadratic Programs, INFORMS, Seattle, November 2007 (invited).
- [P35] Representing NP-Hard Problems as Convex Programs, Second International Conference on Continuous Optimization (ICCOPT-II), McMaster University, Hamilton, Ontario, August 2007 (invited).
- [P36] An Introduction to Semidefinite Programming and Its Applications, INFORMS International, Puerto Rico, July 2007 (invited tutorial).
- [P37] Representing NP-Hard Problems as Convex Programs, Tepper School of Business, Carnegie Mellon University, Pittsburgh, March 2007 (invited).
- [P38] Representing NP-Hard Problems as Convex Programs, Department of Industrial Engineering, University of Pittsburgh, February 2007 (invited).
- [P39] Handling Free Variables in Conic Optimization with Application to Moment Relaxations, Nineteenth International Symposium on Mathematical Programming, Rio de Janeiro, August 2006 (invited).
- [P40] A Finite Branch-and-Bound Algorithm for Nonconvex Quadratic Programming via Semidefinite Programming, 21st European Conference on Operational Research, Iceland, July 2006 (invited).
- [P41] A Finite Branch-and-Bound Algorithm for Nonconvex Quadratic Programming via Semidefinite Programming, Department of Mathematics, University of Washington, February 2006 (invited).
- [P42] A Finite Branch-and-Bound Algorithm for Nonconvex Quadratic Programming via Semidefinite Programming, Department of Mathematics, North Carolina State University, February 2006 (invited).
- [P43] A Finite Branch-and-Bound Algorithm for Nonconvex Quadratic Programming via Semidefinite Programming, Workshop on Semidefinite Programming and Its Applications, National University of Singapore, Singapore, January 2006 (invited).
- [P44] A Finite Branch-and-Bound Algorithm for Nonconvex Quadratic Programming via Semidefinite Programming, INFORMS, San Francisco, November 2005 (invited).
- [P45] The Low-Rank Algorithm for Large-Scale Semidefinite Programming, University of Waterloo, Waterloo, October 2005 (invited).
- [P46] Solving Lift-and-Project Relaxations of Binary Integer Programs, University of Michigan, Ann Arbor, September 2005 (invited).
- [P47] Solving Lift-and-Project Relaxations of Binary Integer Programs, Tepper School of Business, Carnegie Mellon University, Pittsburgh, February 2005 (invited).
- [P48] Solving Lift-and-Project Relaxations of Binary Integer Programs, Workshop on Integer Programming and Continuous Optimization, Chemnitz University of Technology, Germany, November 2004 (invited).
- [P49] Computational Enhancements in Low-Rank Semidefinite Programming, INFORMS, Denver, October 2004 (invited).
- [P50] Computational Enhancements in Low-Rank Semidefinite Programming, First International Conference on

Continuous Optimization (ICCOPT-I), Rensselaer Polytechnic Institute, Troy, August 2004 (invited).

- [P51] Maximum Stable Set Formulations and Heuristics Based on Continuous Optimization, SIAM Conference on Discrete Mathematics, Nashville, June 2004 (invited).
- [P52] Local Minima and Convergence in Low-Rank Semidefinite Programming, Workshop on Large Scale Nonlinear and Semidefinite Programming, University of Waterloo, Waterloo, May 2004 (invited).
- [P53] Solving Semidefinite Programs via Nonlinear Programming, University of Maryland, Baltimore County, Baltimore, November 2003 (invited).
- [P54] Local Minima and Convergence in Low-Rank Semidefinite Programming, INFORMS, Atlanta, October 2003 (invited).
- [P55] Semidefinite Programming in the Space of Partial Positive Semidefinite Matrices, Eighteenth International Symposium on Mathematical Programming, Copenhagen, August 2003 (invited).
- [P56] Semidefinite Programming in the Space of Partial Positive Semidefinite Matrices, INFORMS, San Jose, November 2002 (invited).
- [P57] Computational Experience with a Gradient-Based Algorithm for Semidefinite Programming, Seventh SIAM Conference on Optimization, Toronto, May 2002 (invited).
- [P58] Rank-Two Semidefinite Relaxation Heuristics for Max-Cut and Other Binary Quadratic Programs, Seventh SIAM Conference on Optimization, Toronto, May 2002 (invited).
- [P59] A Nonlinear Programming Algorithm for Solving Semidefinite Programs via Low-rank Factorization, Seventh SIAM Conference on Optimization, Toronto, May 2002 (invited).
- [P60] Solving Semidefinite Programs via Nonlinear Programming, Northwestern University, Evanston, April 2002 (invited).
- [P61] The Maximum Stable Set Problem: New Approaches via Continuous Optimization, McMaster University, Hamilton, March 2002 (invited).
- [P62] Rank-Two Semidefinite Relaxation Heuristics for Max-Cut and Other Binary Quadratic Programs, INFORMS, Miami, November 2001 (invited).
- [P63] Computing the Lovasz Theta Number of a Graph, INFORMS, Miami, November 2001 (invited).
- [P64] Maximum Stable Set Formulations and Heuristics Based on Continuous Optimization, Novel Approaches to Hard Discrete Optimization, University of Waterloo, Waterloo, April 2001 (contributed).
- [P65] Rank-Two Relaxation Heuristics for Maxcut, Seventh U.S.-Mexico Workshop in Numerical Analysis, Mrida, Mexico, January 2001 (contributed).
- [P66] A Nonlinear Programming Algorithm for Solving Semidefinite Programs via Low-Rank Factorization, INFORMS, San Antonio, November 2000 (invited).
- [P67] Solving Semidefinite Programs via Nonlinear Programming, INFORMS, San Antonio, November 2000 (invited).
- [P68] A Nonlinear Programming Algorithm for Solving Semidefinite Programs via Low-Rank Factorization, DIMACS Seventh Implementation Challenge, Rutgers, November 2000 (invited).
- [P69] A Nonlinear Programming Algorithm for Solving Semidefinite Programs via Low-Rank Factorization, Seventeenth International Symposium on Mathematical Programming, Atlanta, August 2000 (invited).
- [P70] Solving Semidefinite Programs via Nonlinear Programming: Transformations, Derivatives and Computational Results, Tokyo Institute of Technology, Tokyo, June 2000 (invited).
- [P71] A General Framework for Establishing Polynomial Convergence of Long-Step Methods for Semidefinite

Programming, INFORMS, Salt Lake City, May 2000 (invited).

[P72] Solving Semidefinite Programs via Nonlinear Programming: Transformations, Derivatives and Computational Results, INFORMS, Salt Lake City, May 2000 (invited).

[P73] Solving Semidefinite Programs via Nonlinear Programming: Transformations, Derivatives and Computational Results, INFORMS, Philadelphia, November 1999 (invited).

[P74] A General Framework for Establishing Polynomial Convergence of Long-Step Methods for Semidefinite Programming, Sixth SIAM Conference on Optimization, Atlanta, May 1999 (invited).

SOFTWARE

- *QuadProgBB version 20120229*, proposed and developed in publication [J09] (available from personal webpage)
- *OptDNN*, proposed and developed in publications [J12] and [J20] (available from personal webpage)
- *SDPLR 1.03-beta*, proposed and developed in publications [J27], [J29], [J33], and [J39] (available from personal webpage and over the Web at www-neos.mcs.anl.gov)
- *Max-AO*, proposed in publication [J35] (available on [GitHub](#))
- *CirCut*, proposed in publication [J36] (available from [coauthor](#))

AWARDS AND HONORS

- Finalist, INFORMS Syngenta Crop Challenge, with B. Shetty and L. Tong, 2016
- Top 5 Most Downloaded, *Surveys in Operations Research and Management Science* journal, 2014
- Strategic Innovation Faculty Member of the Year, University of Iowa MBA, 2013
- Certificate of Excellence in Reviewing, *Operations Research Letters*, 2013
- Meritorious Service Award for Associate Editors, *Operations Research*, 2012
- G.R.E.A.T. Faculty Award (First Year), Des Moines Executive MBA Class of 2012, April 2012
- Dean's Teaching Excellence Recognition, Fall 2005, Fall 2006, Fall 2011
- Dean's Teaching Award in Management Sciences, 2011
- *Computational Optimization and Applications* Best Paper Award, 2009 for the paper [J18]. Award citation has appeared in: COAP 2009 Best Paper Award, *Computational Optimization and Applications*, 47:567-570, 2010
- Top 10 Most Highly Cited, *Optimization Methods and Software* journal, 2000-2008
- Honorable Mention, Young Researcher Competition, International Conference on Continuous Optimization, 2004
- New Hot Paper recognition by ISI Essential Science Indicators for the paper [J36]
- Optimization Prize for Young Researchers, Optimization Section of INFORMS, 2002
- Delta Sigma Pi Outstanding Faculty Award, University of Iowa, 2002
- Presidential Fellowship, Georgia Institute of Technology, 1997–2001
- Strahan Mathematics Award, University of Georgia, 1996
- Phi Beta Kappa member

PROFESSIONAL SERVICE AND EXTERNAL ACTIVITIES

Editorial positions

- Associate Editor, *Management Sciences*, 2014–present
- Co-Editor, *Discrete Optimization*, special issue on Conic Discrete Optimization, 2014–2016

- Associate Editor, *Operations Research*, 2011–present
- Associate Editor, *SIAM Journal on Optimization*, 2011–present
- Associate Editor, *Mathematics of Operations Research*, 2011–present
- Co-Editor, *Optima* (newsletter of the Mathematical Optimization Society), 2010–present
- Associate Editor, *Operations Research Letters*, 2009–14
- Associate Editor, *Mathematical Programming Computation*, 2008–13
- Associate Editor, *Surveys in Operations Research and Management Science*, 2009–13
- Associate Editor, *Asia-Pacific Journal of Operational Research*, 2007–10

Society positions

- Member, Board of Directors, Computing Society, INFORMS, 2014–17
- Council Member, Mathematical Optimization Society, 2012–15
- Vice-Chair for Linear Programming and Complementarity, Optimization Society, INFORMS, 2008–10
- Member, INFORMS (Institute for Operations Research and the Management Sciences)
- Member, SIAM (Society for Industrial and Applied Mathematics)
- Member, MPS (Mathematical Programming Society)

Conference organization

- Member, Program Committee, SIAM Conference on Optimization (SIOPT), Vancouver, 2017
- Session Organizer, International Symposium on Mathematical Programming (ISMP), Pittsburgh, 2015
- Session Organizer, Eleventh SIAM Conference on Optimization, San Diego, 2014
- Program Committee, 17th Conference on Integer and Combinatorial Optimization, Bonn, 2014
- Session Organizer, INFORMS Annual Meeting, Minneapolis, MN, 2013
- Session Organizer, Fourth International Conference on Continuous Optimization (ICCOPT-IV), Lisbon, 2013
- Session Organizer, International Symposium on Mathematical Programming (ISMP), Berlin, 2012
- Session Organizer, Modeling Optimization Conference: Theory and Applications (MOPTA), Bethlehem, PA, 2012
- Cluster Organizer, INFORMS Midwest Regional Meeting, Columbus, Ohio, 2011
- Session Organizer, Tenth SIAM Conference on Optimization, Darmstadt, Germany, 2011
- Session Organizer, INFORMS Annual Meeting, Austin, 2010
- Cluster and Session Organizer, INFORMS Annual Meeting, San Diego, 2009
- Cluster Organizer, INFORMS Annual Meeting, Washington D.C., 2008
- Session Organizer, Ninth SIAM Conference on Optimization, Boston, 2008
- Session Organizer, INFORMS Annual Meeting, Seattle, 2007
- Stream Co-Organizer and Session Chair, Second International Conference on Continuous Optimization (ICCOPT-II), McMaster University, Hamilton, Ontario, 2007
- Session Chair, EURO XXI, Reykjavik, Iceland, 2006
- Session Chair, INFORMS Annual Meeting, San Francisco, 2005
- Session Chair, INFORMS Annual Meeting, Atlanta, 2003

Referee positions, prize committees, and grant review panels

- Member, Evaluation Team for ICIAM15 (International Congress on Industrial and Applied Mathematics 2015) Travel Awards, 2015
- Member, INFORMS Optimization Society Young Researcher Prize committee, 2013
- Member, ICCOPT 2013 Young Researcher Prize committee, 2013
- National Science Foundation review panel, 2007, 2012

- Member, INFORMS Junior Faculty Interest Group Paper Prize committee, 2012
- Member, Mixed Integer Programming Workshop Poster Award committee, 2012
- Chair, INFORMS Computing Society Paper Prize committee, 2011
- INFORMS Nicholson Student Paper Prize committee, 2010–11
- INFORMS Computing Society Paper Prize committee, 2010
- INFORMS Optimization Society Student Paper Prize committee, 2009
- Referee for *Mathematical Programming*, *SIAM Journal on Optimization*, *Optimization Methods and Software*, *Optimization Letters*, *INFORMS Journal on Computing*, *Journal of Global Optimization*, *Computational Optimization and Applications*, *Discrete Applied Mathematics*, *Discrete Optimization*, *Mathematics of Operations Research*, *Operations Research*, *Optimization and Engineering*, *4OR*, *Annals of Operations Research*, *ANZIAM Journal*, *Automatica*, *European Journal of Operational Research*, *Foundations of Computational Mathematics*, *INFORMS Transactions on Education*, *International Transactions on Operational Research*, *Journal of Computational and Graphical Statistics*, *RAIRO*, *SIAM Review*, *TOP*

Additional training

- *UI Student Judicial Procedures and Sexual Violence Investigation Strategies and Response* offered by the University of Iowa, 2015
- *Statement of Accomplishment with Distinction* for Coursera course *R Programming*, 2015
- *The Intersection of Title IX and Title VII in Higher Education: What Every Faculty Grievance Panel Needs to Know* offered by the University of Iowa, 2014
- *TILE Classroom Essentials* offered by the University of Iowa, 2013
- *Lean Academy Course* offered by the Lean Aerospace Initiative, 2006

Consulting and external seminars

- Medcara Pharmaceuticals, 2012
- Caterpillar, 2011–12
- Discover Financial Services, 2008

UNIVERSITY SERVICE

- Member, Graduate Education Task Force, Graduate College, 2015–16
- Member, Department Secretary Search Committee, Department of Management Sciences, 2015
- Member, Faculty Panel, NSF CAREER Workshop, University of Iowa, 2014
- Member, Promotion-and-Tenure Departmental Review Committee, Department of Management Sciences, 2013–14
- Member, Post-Tenure Review Committee, Department of Management Sciences, 2013–14
- Chair, Analytics Master's Proposal Committee, Department of Management Sciences, 2013–15
- Member, Management Sciences Graduate Committee, 2003–05, 2006–07, 2013–15
- Member, Faculty Judicial Commission, 2013–16
- Member, Internal Funding Initiatives Review, Office of the VP for Research and Economic Development, 2013–15
- Chair, Management Sciences Faculty Recruiting Committee, 2012–13
- Member, AMCS (Applied Mathematical and Computational Sciences) Executive Committee, 2012–present
- Member, Management Sciences Internal Evaluation Sub-Committee, 2008–09, 2012–13, 2015–16
- Member, Core MBA Committee, 2002–03, 2010–11, 2012–13
- Member, Collegiate and Dean Teaching Awards Committee, 2011–12, 2012–2013
- Member, AMCS (Applied Mathematical and Computational Sciences) Admission Committee, 2011–12

- Member, University of Iowa Faculty Engagement Corps, 2010
- Secretary, Elected Faculty Council, Tippie College of Business, 2008–10
- Member, Management Sciences Faculty Recruiting Committee, 2001–02, 2005–06, 2007–08
- Organizer, Management Sciences Seminar Series, 2001–02, 2006–07
- Executive MBA Committee, 2003–05

ADVISING, MENTORING, AND SUPERVISING

Sponsored Postdoctoral Fellows

| | | |
|-------------|--|---------------------------|
| Nayoung Cho | Management Sciences (with A. Campbell) | 2009 Spring – 2010 Summer |
|-------------|--|---------------------------|

Ph.D. Advisor

| | | |
|---------------|--|------------------------|
| Guanglin Xu | Management Sciences | 2017 Summer (expected) |
| Boshi Yang | Appl Math and Comp Sci Carnegie Mellon University (initial) Clemson University (current) | 2015 Summer |
| Hongbo Dong | Appl Math and Comp Sci (with K. Anstreicher) University of Wisconsin Madison (initial) Washington State University (current) | 2011 Fall |
| Jieqiu Chen | Management Sciences Argonne National Laboratory (initial) Microsoft (current) | 2010 Summer |
| Changhui Choi | Management Sciences University of Colorado Denver (initial) Korea Insurance Research Institute (current) | 2007 Spring |

Ph.D. Committee

| | | |
|----------------------|----------------------------|------------------------|
| Xialong Kuang | Lehigh University | 2017 Summer (expected) |
| Vivek Sardeshmukh | Computer Science | 2016 Summer (expected) |
| Huan Jin | Management Sciences | 2016 Summer (expected) |
| Silviya Valeva | Appl Math and Comp Sci | 2016 Summer (expected) |
| Nathaniel Richmond | Appl Math and Comp Sci | 2016 Summer (expected) |
| Alexander Vinel | Industrial Engineering | 2015 Spring |
| Amit Verma | Management Sciences | 2014 Summer |
| Alexander Michalka | Columbia University | 2013 Summer |
| Lian Duan | Management Sciences | 2012 Summer |
| Moh. Khoshneshin | Management Sciences | 2012 Summer |
| Gaurav Kanade | Computer Science | 2011 Summer |
| Nicholas Liefker | Management Sciences | 2010 Summer |
| Jon Van Laarhoven | Mathematics | 2010 Spring |
| Samid Hoda | Carnegie Mellon University | 2010 Spring |
| Policarpio Soberanis | Industrial Engineering | 2009 Fall |
| Benton McCune | Computer Science | 2009 Fall |
| Chih-Lin Chi | Health Informatics | 2009 Summer |
| Dengfeng Zhang | Management Sciences | 2008 Fall |
| Anureet Saxena | Carnegie Mellon University | 2008 Spring |
| Kaan Ataman | Management Sciences | 2007 Summer |
| Rajiv Raman | Computer Science | 2007 Spring |

| | | |
|----------------------|---------------------|-------------|
| Thaddeus Sim | Management Sciences | 2007 Spring |
| Victoria Shimanovich | Computer Science | 2006 Summer |
| Yi Zhang | Management Sciences | 2006 Summer |

Ph.D Qualifying / Comprehensive / Preliminary Committee

| | | |
|--------------------|------------------------|------------------------|
| Cole Stiegler | Appl Math and Comp Sci | 2016 Spring |
| Bhupesh Shetty | Management Sciences | 2015 Summer |
| Santanu Bhowmick | Computer Science | 2015 Spring |
| Vivek Sardeshmukh | Computer Science | 2014 Fall |
| Preethi Isaac | Management Sciences | 2014 Spring |
| Guanglin Xu | Management Sciences | 2014 Spring |
| Xi Chen | Management Sciences | 2014 Spring |
| Wenjun Wang | Management Sciences | 2014 Spring |
| Huan Jin | Management Sciences | 2014 Spring |
| Fahrettin Cakir | Management Sciences | 2013 Spring |
| Stacy Voccia | Management Sciences | 2013 Spring |
| Qiong Zhang | Management Sciences | 2013 Spring |
| Shu Zhang | Management Sciences | 2013 Spring |
| Huan Jin | Management Sciences | 2012 Fall |
| Kamal Lamsal | Management Sciences | 2012 Spring |
| Chuanjie Liao | Management Sciences | 2012 Spring |
| Senay Yasar Saglam | Management Sciences | 2011 Spring |
| Amit Verma | Management Sciences | 2010 Fall, 2012 Spring |
| Lian Duan | Management Sciences | 2010 Spring |
| Hongbo Dong | Appl Math and Comp Sci | 2009 Fall |
| Gaurav Kanade | Computer Science | 2008 Fall |
| Darin Mohr | Appl Math and Comp Sci | 2008 Summer |
| Seyon Yoon | Appl Math and Comp Sci | 2007 Fall |
| Nicholas Liefker | Management Sciences | 2007 Fall |
| Justin Goodson | Management Sciences | 2007 Fall |
| Jieqiu Chen | Management Sciences | 2007 Fall |
| Chih-Lin Chi | Health Informatics | 2007 Spring |
| Benton McCune | Computer Science | 2006 Fall |
| Hui Chen | Management Sciences | 2006 Spring |
| Dengfeng Zhang | Management Sciences | 2005 Fall |
| Thaddeus Sim | Management Sciences | 2005 Fall |
| Benton McCune | Computer Science | 2005 Spring |
| Rajiv Raman | Computer Science | 2004 Fall |

Graduate or Undergraduate Project Advisor

| | | |
|--------------------|------------------------|-------------|
| Ling Tong | Management Sciences | 2016 Spring |
| Bhupesh Shetty | Management Sciences | 2016 Spring |
| Jeff Landgren | Appl Math and Comp Sci | 2015 Fall |
| Deepakkumar Rohida | MBA | 2010–11 |
| Kevin Kotek | Management Sciences | 2010 Summer |
| Daniela Navarro | Management Sciences | 2006 Summer |

Directed Readings

| | | |
|---------------|------------------------|-----------|
| Natalie Clark | Appl Math and Comp Sci | 2013 Fall |
|---------------|------------------------|-----------|

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|-----------------|-----|-------------|
| Anonya Bagchi | MBA | 2013 Spring |
| Danielle Walker | MBA | 2013 Spring |
| Pankaj Kumar | MBA | 2013 Spring |
| Scott Marsh | MBA | 2012 Spring |
| Isaac Hess | MBA | 2012 Spring |

Graduate Mentor (Ethnic Inclusion Effort for Iowa Engineering)

| | | |
|---------------|------------------------|---------|
| James Ratliff | Industrial Engineering | 2011–13 |
|---------------|------------------------|---------|

Sponsored Short-Term Visitors

| | | |
|----------------------|--------------------------------------|------------|
| Peter J.C. Dickinson | University of Groningen, Netherlands | 2012 March |
| Mirjam Dür | University of Groningen, Netherlands | 2007 June |