

Marina A. Epelman

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Current as of April 12, 2020

EDUCATION

- Ph.D. in Operations Research, 1999
Massachusetts Institute of Technology, Cambridge, MA
Dissertation: *Complexity, Condition Numbers, and Conic Linear Systems*
Advisor: Robert M. Freund
- B.A. in Mathematics, 1995
Cornell University, Ithaca, NY
Magna Cum Laude in Mathematics with Distinction in all subjects

PROFESSIONAL EXPERIENCE

- Professor, Department of Industrial and Operations Engineering, University of Michigan (September 2017 – present)
- Associate Professor, Department of Industrial and Operations Engineering, University of Michigan (September 2005 – August 2017)
- Assistant Professor, Department of Industrial and Operations Engineering, University of Michigan (September 1999 – August 2005)

VISITING POSITIONS

- Visiting Scientist, Sloan School of Management, Massachusetts Institute of Technology, Spring 2007
- Visiting Professor, School of Operations Research and Industrial Engineering, Cornell University, Fall 2006

HONORS

- IOE Graduate course professor of the year, 2015, 2016, and 2017 (voted on by IOE graduate students)
- IOE Jon R. and Beverly S. Holt Award for Teaching Excellence, 2016
- INFORMS Daniel H. Wagner Prize for Excellence in Operations Research Practice, Finalist (with Amy Cohn, Yuhui Shi and a team from Ford), 2015
- Omega journal best reviewer award, 2010
- IOE professor of the year award, 2001/2002 academic year. Awarded by the Alpha Pi Mu student society for teaching (primarily at the undergraduate level).
- Second prize, INFORMS George Nicholson Student Paper Competition, “Measures of Conditioning and Pre-Conditioners for Conic Linear Systems,” 2000
- NSF Graduate Research Fellowship, 1996-1999

COURSES TAUGHT

Courses at University of Michigan: (* indicates newly developed courses)

Undergraduate

- IOE 202, “Operations Modeling”

- IOE 310, “Introduction to Optimization Methods”

Graduate

- IOE 518*, “Introduction to Integer Programming”
- IOE 519*, “Introduction to Nonlinear Programming”
- IOE 510, “Linear Programming I”
- IOE 511, “Continuous Optimization Methods”
- IOE 610/Math 660, “Linear Programming II”
- IOE 611/Math 663, “Nonlinear Programming”
- IOE 691, “Stochastic and Robust Optimization” (jointly with Siqian Shen)

Other

- 15.094, “Systems Optimization: Models and Computation” (Massachusetts Institute of Technology)
- ENGR 115, “Engineering Applications of ORIE” (Cornell University)
- 15.063, “Data, Models, and Decisions” (Sloan Fellows executive education program, MIT; teaching instructor)

STUDENT SUPERVISION

Doctoral student advising

Includes significant awards received by students for activities that include work on joint projects

- Byron Tasseff (co-advisor with Pascal Van Hentenryck)
- Wilmer Henao, Ph.D. in IOE, 2019
Dissertation: “Improving the Delivery Characteristics in Volumetric Modulated Arc Therapy (VMAT) and Tomotherapy for Cancer Treatment”
- Victor Wu, Ph.D. in IOE, 2017
Dissertation: “Three Essays on Radiotherapy Treatment Planning Optimization” (co-advisor with H. Edwin Romeijn)
Awards: 1st place, Young Investigators Symposium of the Great Lakes Chapter of AAPM, 2014
- Yuhui Shi, Ph.D. in IOE, 2017
Dissertation: “Optimization Models and Algorithms for Prototype Vehicle Test Scheduling” (co-advisor with Amy Cohn)
Awards: IOE Wilson Prize (awarded to best student paper on manufacturing systems), 2016; Member of the INFORMS Wagner Prize finalist team, 2015
- Troy Long, Ph.D. in IOE, 2015
Dissertation: “Optimization Problems in Radiation Therapy Treatment Planning” (co-advisor with H. Edwin Romeijn)
Awards: IOE Outstanding Graduate Student, 2014-15
- Ilbin Lee, Ph.D. in IOE, 2015
Dissertation: “Optimization Models and Algorithms for Prototype Vehicle Test Scheduling” (co-

advisor with Robert L. Smith and H. Edwin Romeijn)

Awards: IOE Murty Prize (awarded to best student paper on optimization), 2013

- Fei Peng, Ph.D. in IOE, 2013, University of Michigan
Dissertation: “Optimization Methods for Volumetric Modulated Arc Therapy and Radiation Therapy Under Uncertainty” (co-advisor with H. Edwin Romeijn)
Awards: IOE Bonder Fellowship for Applied OR, 2010; Engineering Grad Symposium technical session award, 2010
- Stanko Dimitrov, Ph.D. in IOE, 2010, University of Michigan
Dissertation: “Information Procurement and Delivery: Robustness in Prediction Markets and Network Routing” (co-advisor with Rahul Sami)
- Esra Sisikoglu, , Ph.D. in IOE, 2009, University of Michigan
Dissertation: “Distributed Algorithms Based on Fictitious Play for Near Optimal Sequential Decision Making” (co-advisor with Robert L. Smith)
- Tara Terry, Ph.D. in IOE, 2009, University of Michigan
Dissertation: “Robust Linear Optimization with Recourse: Solution Methods and Other Properties”
- Blake Nicholson, Ph.D. in IOE, 2008, University of Michigan
Dissertation: “Scheduling Shutdowns for Manufacturing Systems with an Application to Automotive Production Lines: Optimization Models and Computation” (co-advisor with Robert L. Smith)
- Mustafa Sir, Ph.D. in IOE, 2007, University of Michigan
Dissertation: “Optimization of Radiotherapy Considering Uncertainties Caused by Daily Setup Procedures and Organ Motion” (co-advisor with Stephen M. Pollock)
Awards: IOE Murty Prize (awarded to best student paper on optimization), 2008
- Júlíus Atlason, Ph.D. in IOE, 2004, University of Michigan
Dissertation: “Simulation-Based Cutting Plane Methods for Optimization of Service Systems” (co-advisor with Shane G. Henderson, Cornell University)
- Theodore Lambert, Ph.D. in IOE, 2002, University of Michigan
Dissertation: “Deterministic and Stochastic Systems Optimization” (co-advisor with Robert L. Smith)

MS student advising

- Yuhui Shi, MS IOE 2013

Undergraduate student advising

- Esra Sisikoglu, BSE IOE 2004
- Mustafa Sir, BSE IOE 2002

Doctoral student committee member (IOE, University of Michigan, unless indicated otherwise)

- Fatemeh Navidi, “Adaptive Approximation Algorithms for Ranking, Routing and Classification,” 2020
- Geunyeong Byeon, “Large-Scale Optimization for Interdependent Infrastructure Systems,” 2020
- Miao Yu, “Optimization Approaches for Mobility and Service Sharing,” 2020
- Karmel Shehadeh, “Stochastic Optimization Approaches for Outpatient Appointment Scheduling under Uncertainty,” 2019

- Victor Fuentes, “On Computing Sparse Generalized Inverses and Sparse-Inverse/Low-Rank Decompositions,” 2019
- Xiangkun Shen, “Linear and Convex Programming based Algorithms for Network Design,” 2019
- Mai Le (Department of EECS), “Reconstruction Methods for Free-Breathing Dynamic Contrast-Enhanced MRI,” 2017
- Young-Chae Hong, “Using Dominance in Solving Complex, Combinatorial Optimization Problems: Applications from Healthcare Provider Scheduling and Vehicle Routing,” 2017
- Brian Lemay, “Addressing Challenges in Healthcare Provider Scheduling,” 2017
- Jeremy Castaing, “Scheduling Under Uncertainty: Applications to Aviation, Healthcare and Aerospace,” 2016
- Zhihao Chen, “Strategic Network Planning Under Uncertainty with Two-Stage Stochastic Integer Programming,” 2016
- Houra Mahmoudzadeh, “Robust Optimization Methods for Breast Cancer Radiation Therapy,” 2015 (Department of Mechanical and Industrial Engineering, University of Toronto)
- Madison McGaffin, “X-ray CT Image Reconstruction on Highly-Parallel Architectures,” 2015 (Department of EECS)
- Donghwan Kim, “Accelerated Optimization Algorithms For Statistical 3D X-Ray Computed Tomography Image Reconstruction,” 2014 (Department of EECS)
- Kathryn Schumacher, “Optimization Algorithms for Power Grid Planning and Operational Problems,” 2014
- Dong Jin Lee, “High-performance and Low-power Clock Network Synthesis in the Presence of Variation,” 2011 (Department of EECS)
- Ada Barlatt, “Models and Algorithms For Workforce Allocation and Utilization,” 2009
- Irina Dolinskaya, “Optimal Path Finding for Direction, Time and Space Dependent Costs, with Application to Vessel, UAV and Robot Routing,” 2009
- Manjunath Kudlur, “Streamrooler: a Unified Compilation and Synthesis System for Streaming Applications,” 2008 (Department of EECS)
- Shervin AhmadBeygi, “Airline Planning Under Uncertainty,” 2008
- Sarah Root, “Models and algorithms for addressing complex constraints and objective functions,” 2007
- Archis Ghate, “Markov Chains, Game Theory, and Infinite Programming: Three Paradigms for Optimization of Complex Systems,” 2006
- Shi-Fen Cheng, “Game-Theoretic Approachs for Complex Systems Optimization,” 2006
- Tamon Stephen “The distribution of values in combinatorial optimization problems,” 2002 (Department of Mathematics)
- Beong Choi, “Theory and algorithms in semidefinite programming,” 2001
- Chi-Guhn Lee, “Vehicle routing and inventory control for in-bound logistic,” 2001

- Teresa Chu, "A class of strictly semimonotone matrices in linear complementarity theory," 2001

SPONSORED RESEARCH

- “Test planning Scheduler Support System — TP3S II.” CO-PI Amy Cohn, Ford Research & Advanced Engineering, 1/1/16–12/31/18, \$104,076.
- “Optimization of High Dose Radiation Therapy,” HHS, 5/15/14–4/30/19, Co-PI with effort.
- “Analysis and Algorithms for Countably Infinite Linear Programming Models of Markov Decision Processes,” CO-PI Robert L. Smith, NSF, 7/1/13–6/30/17, \$350,000.
- “Optimized Scheduling for Prototype Test Vehicles.” CO-PI Amy Cohn, Ford Research & Advanced Engineering, 1/1/13—12/31/15, \$178,317.
- “Optimized Crash Tree Generation for Prototype Vehicle Scheduling.” CO-PI Amy Cohn, Ford Research & Advanced Engineering, 1/1/13—4/30/13, \$24,413.
- “Radiation therapy treatment plan optimization for liver cancer: incorporating local liver function and uncertainties into robust models and algorithms for treatment planning,” with Martha Matuszak, Edwin Romeijn, Mary Feng, University of Michigan MCubed program, 01/2013-05/2014, \$60,000.
- “Automated Scheduling for Prototype Test Vehicles.” CO-PI Amy Cohn, Ford Research & Advanced Engineering, 5/1/12—5/31/13, \$39,980
- Horace H. Rackham School of Graduate Studies 2009 Spring/Summer Research Grant, University of Michigan, 2009, \$4,000
- Elizabeth Caroline Crosby Research Award, 2007, \$6,622
- “Collaborative Research: Approximate Fictitious Play for the Optimization of Complex Systems,” NSF, 8/1/08—7/31/11, \$139,863.
- “Fictitious Play for Complex Systems Optimization,” CO-PI: Robert L. Smith, NSF, 08/15/04—07/31/08, \$215,907
- “Problem conditioning in convex optimization: theory and algorithms,” NSF, 06/15/03—05/31/08, \$177,298
- CO-PI: “Collaborative Research: Complex Networks Optimization,” PI: Robert L. Smith, NSF, 09/01/02—08/31/05, \$106,841
- Participating Investigator: “Optimization of High Dose Conformal Therapy: Incorporation of geometric uncertainties in conformal RT,” PI: Benedick Fraass, NIH/NCI, 08/01/01—06/30/11.
- Horace H. Rackham School of Graduate Studies Faculty Grant, University of Michigan, 2000, \$15,000

PUBLICATIONS

Archival journals and significant proceedings (appeared, accepted, or submitted)

For unpublished papers, the date corresponds to the latest significant revision

- Victor Wu, Marina Epelman, Kalyan Pasupathy; Mustafa Sir, Christopher Deufel, “A new optimization algorithm for HDR brachytherapy that improves DVH-based planning: Truncated Conditional Value-at-Risk (TCVaR),” 2020, under review.
- Christopher Deufel, Marina Epelman, Mustafa Sir, Kalyan Pasupathy, Victor Wu, Michael Herman, “PNaV: a tool for generating a high-dose-rate brachytherapy treatment plan by navigating the Pareto surface guided by the visualization of multi-dimensional trade-offs,” 2020, accepted.

- Karmel S. Shehadeh, Amy Cohn, Marina A. Epelman, “Analysis of models for the stochastic outpatient procedure scheduling problem,” *EJOR*, 279:721–731, 2019, <https://doi.org/10.1016/j.ejor.2019.06.023>.
- Young-Chae Hong, Amy Cohn, Marina Epelman, Aviva Alpert, “Creating resident shift schedules under multiple objectives by generating and evaluating the Pareto frontier,” *Operations Research for Health Care*, 2018, <https://doi.org/10.1016/j.orhc.2018.08.001>.
- Christopher T Ryan, Robert L Smith, Marina A Epelman, “A simplex method for uncapacitated pure-supply infinite network flow problems,” *SIAM Journal of Optimization*, 28(3):2022-2048, 2018. <https://doi.org/10.1137/17M1137553>
- Brian Lemay, Amy Cohn, Marina A Epelman, Stephen Gorga, “New methods for resolving conflicting requests with examples from medical residency scheduling,” *Production and Operations Management*, 26(9):1778-1793, 2017.
- Ilbin Lee, Marina A. Epelman, H. Edwin Romeijn, Robert L. Smith, “Simplex Algorithm for Countable-state Discounted Markov Decision Processes,” *Operations Research*, 65(4):1029–1042, 2017.
- Victor Wu, Marina Epelman, Hesheng Wang, H Edwin Romeijn, Mary Feng, Yue Cao, Randall Ten Haken, Martha Matuszak, “Optimizing global liver function in radiation therapy treatment planning,” *Physics in Medicine and Biology* 61(17):6465–84, 2016.
- Daniel Reich, Yuhui Shi, Marina Epelman, Amy Cohn, Ellen Barnes, Kirk Arthurs, Erica Klampf, “Scheduling Crash Tests at Ford Motor Company,” *INTERFACES*, 46(5):409–423, 2016.
- Daniel Reich, Yuhui Shi, Marina Epelman, Erica Klampf, Amy Cohn, “An Analytical Approach to Prototype Vehicle Test Scheduling,” *Omega* 67:168-176, 2016.
- Irina Dolinskaya, Marina Epelman, Esra Sisikoglu, Robert L. Smith, “Parameter-free Sampled Fictitious Play for Solving Deterministic Dynamic Programming Problems,” *Journal of Optimization Theory and Applications* 169(2):631–655, 2016.
- Stanko Dimitrov, Marina A. Epelman, Rahul Sami, “Subsidized Prediction Markets for Risk Averse Agents,” *ACM Transactions on Economics and Computation* 3(4), Paper 24, 2015.
- Fei Peng, Steve B Jiang, H Edwin Romeijn, Marina A Epelman, “VMATc: VMAT with constant gantry speed and dose rate,” *Phys. Med. Biol.* 60(7):2955-79, 2015
- Ilbin Lee, Marina A. Epelman, H. Edwin Romeijn, Robert L. Smith, “Extreme point characterization of constrained non stationary infinite-horizon Markov decision processes with finite state space,” *Operations Research Letters* 42:238-245, 2014.
- Shih-Fen Cheng, Blake E. Nicholson, Marina A. Epelman, Daniel J. Reaume, Robert L. Smith. “A Dynamic Programming Approach to Achieving an Optimal End State Along a Serial Production Line,” *IIE Transactions* 45:1278-1292, 2013.
- F. Peng, X. Jia, X. Gu, M.A. Epelman, H.E. Romeijn, and S.B. Jiang, “A new column generation based algorithm for VMAT treatment plan optimization,” *Phys. Med. Biol.* 57:4569-4588, 2012
- Mustafa Y. Sir, Marina A. Epelman and Stephen M. Pollock, “Stochastic programming for off-line adaptive radiotherapy,” *Annals of Operations Research*, 196(1):767-797, 2012
- Marina A. Epelman, Archis Ghate and Robert L. Smith, “Sampled Fictitious Play for Approximate Dynamic Programming,” *Computers and Operations Research*, 38:1705-1718, 2011

- E. Sisikoglu, M.A. Epelman and R.L. Smith, “A sampled fictitious play based learning algorithm for infinite horizon Markov decision processes,” 2011. *Proceedings of the 2011 Winter Simulation Conference*, S. Jain, R. R. Creasey, J. Himmelspach, K. P. White, and M. Fu, eds. IEEE. (Refereed proceedings)
- Júlíus Atlason, Marina A. Epelman and Shane G. Henderson, “Optimizing call center staffing using simulation and analytic center cutting plane methods.” *Management Science* 54:295-309, 2008
- Maciek Nowak, Marina Epelman, Stephen Pollock, “Assignment of Swimmers to Dual Meet Events,” *Computers and Operations Research*, special issue on OR in Sport, 33(7):1951-1962, 2006
- Chi-Guhn Lee, Marina Epelman, Chelsea C. White, III, Yavuz Bozer, “A Shortest Path Approach to the Multiple-Vehicle Routing Problem with Split Pick-Ups,” *Transportation Research, Part B* 40(4):265-284, 2006
- Mustafa Y. Sir, Stephen M. Pollock, Marina A. Epelman, Kwok L. Lam and Randall K. Ten Haken, “Ideal spatial radiotherapy dose distributions subject to positional uncertainties,” *Phys. Med. Biol.* 51(24):6329-6347, 2006
- Shih-Fen Cheng, Marina A. Epelman and Robert L. Smith, “CoSIGN: A Parallel Algorithm for Coordinated Traffic Signal Control,” *IEEE Transactions on Intelligent Transportation Systems*, 7(4): 551-564, 2006
- Marc L. Kessler, Daniel L. Mcshan, Marina A. Epelman, Karen A. Vineberg, Avraham Eisbruch, Theodore S. Lawrence, Benedick A. Fraass, “Costlets: A Generalized Approach to Cost Functions for Automated Optimization of IMRT Treatment Plans,” *Optimization and Engineering*, special issue on Optimization and Radiation Oncology, 6(4):421 - 448, 2005
- Marina A. Epelman, Stephen Pollock, Brian Netter, and Bobbi Low, “Anisogamy, expenditure of reproductive effort, and the optimality of having two sexes.” *Operations Research*, 53(3):560-567, 2005
- Theodore Lambert III, Marina A. Epelman, and Robert L. Smith, “A Fictitious Play Approach to Large-Scale Optimization.” *Operations Research* 53(3):477-489, 2005
- Júlíus Atlason, Marina A. Epelman and Shane G. Henderson, “Call center staffing with simulation and cutting plane methods.” *Annals of Operations Research* 127:333-358, 2004 (special issue on Staff Scheduling and Rostering: Theory and Applications)
- J. Atlason, M. Epelman and S. G. Henderson, “Using simulation to approximate subgradients of convex performance measures in service systems,” 2003. *Proceedings of the 2003 Winter Simulation Conference*, S. Chick, P. J. Sanchez, D. Ferrin, and D. J. Morrice, eds. IEEE. (Refereed proceedings)
- Marina A. Epelman, Robert M. Freund, “A new condition measure, pre-conditioners, and relations between different measures of conditioning for conic linear systems.” *SIAM Journal on Optimization* 12(3):627-655, 2002
- Marina A. Epelman, Robert M. Freund, “Condition number complexity of an elementary algorithm for computing a reliable solution of a conic linear system.” *Mathematical Programming* 88(3):451-485, 2000

Refereed conference proceedings and short papers

- D Polan, M Varsta, M Epelman, Y Sun, P Boonstra, S Jolly, M Schipper, M Matuszak, “Development and Implementation of a Utility-Based IMRT Optimization Plug-in for Use with a Commercial

Treatment Planning System,” 2019, *61st Annual Meeting of the American Association of Physicists in Medicine*

- Christopher L Deufel, Victor W Wu, Marina Epelman, Mustafa Y Sir, Kalyan S Pasupathy, “An Improved Optimization Algorithm for Brachytherapy HDR Treatment Planning,” 2019, *American Brachytherapy Society Annual Meeting*
- Christopher L Deufel, Victor Wu, Marina Epelman, Mustafa Sir, Kalyan Pasupathy, Birjoo Vaishnav, Michael G Herman, “A Multi-Criteria Optimization (MCO) Tool for Generating and Navigating the Trade-Off Surface In High Dose-Rate Brachytherapy,” 2018, *American Brachytherapy Society Annual Meeting*
- W Heno, M Epelman, M Matuszak, E Romeijn, K Younge, C Anderson, “Improving Aperture Control Methodologies for Optimization of Volumetric Modulated Arc Therapy,” 2018, *60th Annual Meeting of the American Association of Physicists in Medicine*
- VW Wu, MA Epelman, M Sir, K Pasupathy, M Herman, C Deufel, “Multicriteria Optimization for Brachytherapy Treatment Planning,” 2017, *59th Annual Meeting of the American Association of Physicists in Medicine*
- W Heno, MA Epelman, M Matuszak, HE Romeijn, K Younge, C Anderson, “Aperture Control for VMAT Delivery Systems,” 2017, *59th Annual Meeting of the American Association of Physicists in Medicine* (poster presentation)
- VW Wu, MA Epelman, K Brock, M Feng, RK Ten Haken, M Matuszak, “Adaptive SBRT Planning for Interfraction Motion,” 2016, *58th Annual Meeting of the American Association of Physicists in Medicine*
- V Wu, MA Epelman, E Romeijn, M Feng, Y Cao, H Wang, R Ten Haken, M Matuszak, 2015, Optimizing Global Liver Function in Liver SBRT Treatment Planning, *57th Annual Meeting of the American Association of Physicists in Medicine*
- V Wu, MA Epelman, M Feng, Y Cao, H Wang, E Romeijn, M Matuszak, 2014, Incorporating Liver Functionality in Radiation Therapy Treatment Planning, *56th Annual Meeting of the American Association of Physicists in Medicine*
- T. Long, M. Matuszak, M. Schipper; M.A. Epelman, F. Kong, R. Ten Haken, H.E.Romeijn, 2013, A Stochastic Optimization Approach to Adaptive Lung Radiation Therapy Treatment Planning, *55th Annual Meeting of the American Association of Physicists in Medicine*
- Stanko Dimitrov, Rahul Sami, Marina A. Epelman, “Subsidized Prediction Markets for Risk Averse Traders,” *Proceedings of the fifth Workshop on Internet & Network Economics*; appeared in Lecture Notes in Computer Science, 5929:491-497, 2009. (Refereed proceedings)
- Marina Epelman, “Comments on: intensity modulated radiation therapy treatment plan optimization.” *TOP* 16:244-245, 2008.
- J. Atlason, M. Epelman and S. G. Henderson, “Combining simulation and cutting plane methods in service systems,” *Proceedings of the 2002 National Science Foundation Design, Service and Manufacturing Grantees Conference*. (Non-refereed proceedings)

Technical reports, permanent working papers, etc.

- Ilbin Lee, Marina A. Epelman, H. Edwin Romeijn, Robert L. Smith, “A linear programming approach

to constrained nonstationary infinite-horizon Markov decision processes,” UofM IOE Technical Report 13-01, 2013.

- Aurelie Thiele, Tara Terry, Marina A. Epelman, “Robust Linear Optimization With Recourse,” UofM IOE Technical Report 09-01, 2010.
- Stanko Dimitrov, Marina A. Epelman, Dushyant Sharma, “New Models of Network Routing under Active Congestion Control,” 2009.
- Marina Epelman, “Complexity, Condition Numbers, and Conic Linear Systems,” Ph.D. Thesis, Massachusetts Institute of Technology, 1999.
- Marina Epelman, Georgia Perakis, Thomas L. Magnanti, “Finding Fixed Points by Averaging with Well-Behaved Maps.” MIT O.R. Working Paper 322-97, 1997.
- Marina Epelman, Robert M. Freund, “Condition Number Complexity of an Elementary Algorithm for Resolving a Conic Linear System,” MIT O.R. Working Paper 319-97, 1997. (Extensive revision published in *Mathematical Programming*.)

PROFESSIONAL ACTIVITIES AND SERVICE

Departmental committees and service activities:

- Associate Chair of Graduate Education, 2019–present
- Graduate admissions and financial aid committee: Member, September 2000 – August 2002, September 2010 – present, Chair, September 2012–2019
- APM chapter advisor, 2015–2019
- Undergraduate program committee: Member, September 2011 – 2019
- ABET committee: Member, September 2011 – 2019 (Chair, September 2011 – May 2013)
- Katta Murty Prize for Best Research Paper on Optimization by an IOE Student jury: Chair, 2008 – 2010, Member, 2007, 2018, 2019
- Wilson Prize jury: Member, 2018
- IOE seminar series organizer (IOE 899): 2018, Winter 2012
- Bonder Fellowship committee: Member, 2017
- Computing Policy committee: Chair, September 2001 – August 2011
- Curriculum committee: Member. September 2005 – August 2011 (Chair, September 2007 – August 2010)
- UofM INFORMS Student Chapter: Advisor, September 2002 – August 2012
- Operations Research area coordinator, AY 2003-2004, 2008-2009
- Graduate program committee: Member, September 2000 – August 2005

College of Engineering:

- College Math Curriculum review committee, member, 2018-2019
- College Masters Degrees review task force: member, September 2011 – May 2012
- Engineering Advising Center: Faculty Advisor, 2000 – 2012
- College Curriculum Committee: Chair, September 2009 – August 2011 (member September 2007 – August 2011)

University:

- Academic Innovation (formerly Digital Innovation) Advisory Group and Sub-Committee on Online Courses, member, 2013–2017
- University and Graduate School Commencement Marshall, 2001, 2003
- Speaker, Rackham-CRLT Seminar on College Teaching, May 20th, 2003

Professional:

- INFORMS Junior Faculty Forum Paper Competition jury: Co-chair, 2017; Member, 2016
- Associate editor, Optimization and Engineering, 2016–present (Rosenbrock prize committee member, 2017, 2018)

- Treasurer, Mathematical Optimization Society, 2016–present
- Secretary, SIAM Activity Group in Optimization, 2011–2013
- Member, INFORMS Sections/Societies Committee, 2011–2013
- Treasurer and Secretary, INFORMS Optimization Society, 2008–2011
- Associate Editor, *Operations Research*, 2006–2011
- Member, Nicholson student paper competition jury, 2006–2007, 2009–2010
- Ad hoc referee for *Annals of OR*, *European Journal of Operations Research*, *Interfaces*, *INFORMS Journal on Computing*, *International Transactions in Operations Research*, *Linear Algebra and its Applications*, *Management Science*, *Mathematical Programming*, *Mathematics of Operations Research*, *Naval Research Logistics*, *Omega*, *Operations Research Letters*, *SIAM Journal on Optimization*, *Mathematical Reviews*
- Member of INFORMS, Mathematical Optimization Society, SIAM