

SIQIAN SHEN
Assistant Professor
Department of Industrial and Operations Engineering
University of Michigan, Ann Arbor
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EDUCATION

- PhD, August 2011, Industrial and Systems Engineering, University of Florida
 - *Thesis*: “Reformulation and Cutting-Plane Approaches for Solving Two-Stage Optimization and Network Interdiction Problems.”
 - *Advisor*: Professor J. Cole Smith
- B.S., July 2007, Industrial Engineering, Tsinghua University, China

EMPLOYMENT

- 2011.09-present, Assistant Professor of Industrial and Operations Engineering, University of Michigan

HONORS AND AWARDS

- Best Paper Award Honorable Mention, INFORMS Section on Public Programs, Services and Needs, 2014.
- Early Career Travel Award to the SIAM Conference on Optimization (OPT4)
- Best Paper Award Finalist, Institute for Operations Research and the Management Sciences (INFORMS) Service Science Section, 2013.
- Young Researcher Travel Scholarship, the 13th International Conference on Stochastic Programming (ICSP), 2013.
- IBM Smarter Planet Innovation Faculty Award, 2011.

Awards received as a PhD student (2007-2011):

- 1st Place of the Pritsker Doctoral Dissertation Award, Institute of Industrial Engineers (IIE), 2012.
- Graduate Award for Excellence in Research, Department of Industrial and Systems Engineering, University of Florida, 2011.
- Runner-Up of the INFORMS Computing Society Student Paper Award, 2010.
- Chinese Government Award for Outstanding Self-Financed Students Abroad, 2010.
- INFORMS Future Academician Colloquium Participant, 2010.
- Mixed Integer Programming Workshop Student Travel Award, 2010.
- Outstanding Academic Achievements Award, University of Florida, 2008-2010.
- University of Florida Graduate Alumni Fellowship, 2007-2011.

REFEREED JOURNAL PAPERS

(Authors indicated with * are students.)

1. Shen, S., Kurt, M., Wang, J. *, “Chance-constrained programming models and approximation algorithms for general stochastic bottleneck spanning tree problems,” *INFORMS Journal on Computing*, 27(2): 301–316, 2015.
2. Zheng, Q.-P., Shen, S., Shi, Y. * “Loss-constrained minimum cost flow under arc failure uncertainty with applications to risk-aware kidney exchange,” *IIE Transactions*, 47(9): 961-977, 2015.
3. Maass, K. *, Daskin, M., Shen, S., “Mitigating hard capacity constraints with inventory in facility location modeling,” to appear in *IIE Transactions*, online first, September 2015. DOI: 10.1080/0740817X.2015.1078015.
4. Shen, S., “Using integer programming for balancing return and risk in problems with individual chance constraints,” *Computers & Operations Research*, 49(1): 59–70, 2014.
5. Shen, S., Wang, J. *, “Stochastic modeling and approaches for managing energy footprints in Cloud Computing service,” *INFORMS Service Science*, 6(1): 15–33, 2014. **(Best Paper Award Finalist of the 2013 INFORMS Service Science Section)**
6. Shen, S., Chen, Z. *, “Optimization models for differentiating quality of service levels in probabilistic network capacity design problems,” *Transportation Research Part B, Methodological*, 58(1): 71–91, 2013.
7. Deng, Y. *, Shen, S., Vorobeychik, V., “Optimization methods for disease prevention and epidemic control,” *Mathematical Biosciences*, 246(1), 213–227, 2013.
8. Shen, S., Smith, J. C., “A decomposition approach for solving a broadcast domination network design problem,” *Annals of Operations Research*, 210(1), 333–360, 2013.
9. Shen, S., “Optimizing designs and operations of a single network or multiple interdependent infrastructures under stochastic arc disruptions,” *Computers & Operations Research*, 40(11): 2677–2688, 2013.
10. Penuel, J. and Smith, J. C., Shen, S., “Integer programming models and algorithms for the graph decontamination problem with mobile agents,” *Networks*, 61(1): 1–19, 2013.
11. Shen, S., Smith, J. C., “Polynomial-time algorithms for disconnecting trees and series-parallel graphs under component connectivity metrics,” *Networks*, 60(2): 103–119, 2012.
12. Shen, S., Smith, J. C., Goli, R., “Exact interdiction models and algorithms for disconnecting networks via node deletions,” *Discrete Optimization*, 9(3): 172–188, 2012.
13. Shen, S., Smith, J. C., Ahmed, S., “Expectation and chance-constrained models and algorithms for insuring critical paths,” *Management Science*, 56(10): 1794–1894, 2010. **(Runner-up of the 2011 INFORMS Computing Society Best Student Paper Award)**

PAPERS UNDER REVIEW/REVISION

1. Jiang, R., Shen, S., “Distributionally robust appointment scheduling with random service durations and no-shows,” under 2nd round review, 2015. Available at SSRN: <http://ssrn.com/abstract=2653622>.
2. Deng, Y. *, Shen, S., Denton, B., “Chance-constrained surgery planning under uncertain or ambiguous surgery durations,” under 2nd round review, 2015. **(Best Paper**

Honorable Mention of the 2014 INFORMS Section on Public Programs, Services and Needs). Available at SSRN: <http://ssrn.com/abstract=2432375>

3. Deng, Y.* , Shen, S., “Decomposition algorithm for optimizing multi-server appointment scheduling with chance constraints,” under 3rd round review, 2015. Available at Optimization-Online: http://www.optimization-online.org/DB_HTML/2014/02/4238.html
4. Shen, S., You, M.* , Ma, Y.* , “Stochastic Network Design with Insufficient Data under Demand and Topological Uncertainties,” under revision, 2015.
5. Jiang, Y.* , Cong, S., Shen, S., “Provably-good policies for stochastic inventory systems with service-level constraints,” under revision, 2015.
6. Lejeune, M., Shen, S., “Multi-objective probabilistically constrained programming with variable risk: New models and applications,” submitted, 2015.
7. Jiang, Y.* , Shen, S., Cong, S., Xu, J.* , “Production planning problem with joint service-level guarantee: A computational study,” submitted, 2015.
8. Lu, M., Shen, S., “Not-for-profit surgery block allocation with cross-subsidization,” submitted, 2015.
9. Song, Y., Shen, S., “Risk averse shortest path interdiction,” submitted, 2015.

REFEREED CONFERENCE PROCEEDINGS

1. Orso, A.* , Lee, J., Shen, S., “Submodular minimization in the context of modern LP and MILP methods and solvers.” E. Bampis (Ed.): SEA 2015, LNCS 9125, pp. 193–204, 2015.
2. Zhang, Y.* , Shen, S., Mathieu, J., “Data-driven Optimization Approaches for Optimal Power Flow with Uncertain Reserves from Load Control,” in Proceedings of 2015 American Control Conference (ACC2015), Chicago, IL, 2015.
3. Wang, J.* and Shen, S., “Risk and energy consumption tradeoffs in Cloud Computing service via stochastic optimization models,” in Proceedings of the 5th IEEE/ACM International Conference on Utility and Cloud Computing (UCC 2012), Chicago, IL, November, 2012.

BOOK CHAPTERS

1. Shen, S., “Domination problems,” In Encyclopedia of Operations Research and Management Science (edited by J. J. Cochran), Wiley, Hoboken, NJ, 2011.

REFEREED CONFERENCE ABSTRACTS

1. Zhou, Z., Shen, S., “Sensor Placement for Stochastic Traffic Congestion Observation,” the 3rd INFORMS Transportation Science and Logistics Society Workshop, “Handling uncertainty in planning logistics and transportation systems,” Chicago, IL, June 30-July 2, 2014.
2. Chen, Z.* , Shen, S., “Distributionally Robust Multi-Commodity Network Design Problems under Demand Ambiguity,” the 3rd INFORMS Transportation Science and

Logistics Society Workshop, “Handling uncertainty in planning logistics and transportation systems,” Chicago, IL, June 30-July 2, 2014.

3. Maass, K.*, Daskin, M., Shen, S., “A New Stochastic Capacitated Facility Location Modeling Approach,” the 3rd INFORMS Transportation Science and Logistics Society Workshop, “Handling uncertainty in planning logistics and transportation systems,” Chicago, IL, June 30-July 2, 2014.
4. Maass, K.*, Daskin, M., Shen, S., “A New Stochastic Capacitated Facility Location Modeling Approach,” the Industrial and Systems Engineering Research Conference (ISERC), Montreal, CA, 2014.
5. Chen, Z.*, Shen, S., Lejeune, M., “Robust Weight Optimization of Return and Reliability in Multi-Portfolio Optimization.” The Industrial and Systems Engineering Research Conference (ISERC), Montreal, CA, 2014.
6. Deng, Y.*, Shen, S., Denton, B., “Chance-constrained surgery planning under uncertain or ambiguous surgery duration.” The Manufacturing & Service Operations Management (MSOM) Conference, Seattle, WA, 2014.
7. Deng, Y.*, Shen, S., Lee, J., “Dual decomposition algorithms for solving chance-constrained binary programs.” 2014 Mixed-Integer Programming (MIP) Workshop, Columbus, OH.

GRANTS

External grants:

1. *National Science Foundation*, CMMI-1433066: “Adjustable Risk Management under Ambiguous Decision Preferences and Data Uncertainty”, \$253,411. 07/01/2014–06/30/2017. PI: Shen.
2. *National Science Foundation*, CCF-1442495: “CyberSEES: Type I: Data-driven Approaches to Managing Uncertain Load Control in Sustainable Power Systems” (with 2015 REU amendment of \$16,000.00), totals \$415,980. 09/01/2014–08/31/2016. PI: J. Mathieu (EECS), Co-PIs: I. Hiskens (EECS) and S. Shen. (Shen’s portion: \$195,594.50).
3. *IBM Smarter Planet Innovation Faculty Award*, “Optimization in Smarter-Grid Engineering and Operations”, \$10,000. 3/1/2012–8/31/2013. PI: Shen.
4. *Procter & Gamble Higher Education Grant Program*, “Mathematical Modeling for Improving System Sustainability: From the Classroom Experience to Real-world Applications”, \$6,000. 1/1/2012–12/31/2012. PI: Shen.
5. *National Science Foundation*, “MRI: Acquisition of Conflux, A Novel Platform for Data-Driven Computational Physics”, 9/1/2015-8/31/2018, PI: Karthik Duraisamy (Aerospace Engineering). (Shen’s role: Participating Investigator without Specified Effort.)

Internal grants from University of Michigan:

1. Rackham Spring/Summer Research Grant, University of Michigan, “Mathematical Optimization Models and Approaches for Information Extraction from Large-Scale Datasets and Complex Systems”, \$10,249. 4/1/2013–8/31/2013. PI: Shen.
2. Rackham Graduate School and the ADVANCE Program, University of Michigan, “Global Sustainability Supply Chain and Smart Energy”, \$6,000. 2/1/2012–2/28/2013. PI: Shen.

INVITED TALKS AND SEMINARS

1. “Distributionally Robust Appointment Scheduling with Random No-shows and Service Durations”
 - a. Lehigh University, Department of Industrial and Systems Engineering, September 2015.
2. “Decomposition Algorithm for Optimizing Multi-server Appointment Scheduling with Chance Constraints,”
 - a. Georgia Institute of Technology, School of Industrial and Systems Engineering, February 2015.
 - b. University of Chicago, Booth Business School, September 2014.
3. “Chance-Constrained Surgery Planning under Uncertain or Ambiguous Surgery Durations,”
 - a. University of Arizona, Department of Systems & Industrial Engineering, November 2014.
 - b. Purdue University, Krannert School of Management, Department of Operations Management, October 2014.
 - c. Invited technical session on “Optimal Planning in Healthcare under Uncertainty,” National Science Foundation (NSF) sponsored Health Systems Optimization Workshop, September 12-13, 2014.
 - d. Invited mini-symposium on “Healthcare Optimization and Applications,” SIAM Conference on Optimization, May 2014.
 - e. Arizona State University, School of Computing, Informatics, and Decision Systems Engineering (SCIDSE), January 2014.
4. “Risk-Averse Network Interdiction and Optimizing Interdependent Infrastructures’ Design and Operations under Stochastic Arc Disruptions,”
 - a. Argonne National Lab, Decision and Information Sciences Division, September 2014.
5. “Interdicting Probabilistic Shortest Paths,”
 - a. Invited presentation, the 1st Annual Meeting of the Air Force Research Laboratory (AFRL) Mathematical Modeling and Optimization Institute, July 2013.
6. “Mixed-Integer Programming Models for Optimizing Risk Parameter in Chance Constraints,”
 - a. Invited mini symposium on “IP Approaches for Chance-Constrained Programs,” the 13th International Conference on Stochastic Programming, July 2013.
7. “Risk Optimization in Probabilistic Programs with Single or Multiple Chance Constraints,”

- a. One of the 25 invited talks in the 9th Mixed Integer Programming Workshop, UC Davis, July 2012.
8. “What is Stochastic Optimization?”
 - a. University of Michigan at Ann Arbor, Department of Mathematics, November 2013, “What is...” seminar series.
9. “Expectation and Chance-Constrained-based Models and Algorithms for Insuring Critical Paths,”
 - a. Invited talks by Peking University, Shanghai Finance and Economics University, Fudan University, and Tsinghua University in China, Summer 2012.
 - b. University of Arkansas, Department of Industrial Engineering, February 2011.
 - c. University of Michigan at Ann Arbor, Department of Industrial and Operations Engineering, February 2011.
 - d. Johns Hopkins University, Department of Applied Mathematics, February 2011.
 - e. University of Minnesota, Industrial and Systems Engineering Program, January 2011.
 - f. Warwick Business School, University of Warwick, United Kingdom, December 2010.
 - g. University of South Florida, Department of Industrial and Management Systems Engineering, November, 2010.

CONFERENCE PRESENTATIONS

1. “Distributionally Robust Appointment Scheduling with Random No-shows and Service Durations,” OR2015, International Conference on Operations Research (Optima Decisions and Big Data), Vienne, Austria, September 2015.
2. “Risk-averse Scheduling with Random Service Durations and No-shows under Ambiguous Distributions,” 22nd International Symposium of Mathematical Programming, Pittsburgh, United States, July 2015.
3. “Chance-constrained surgery planning under uncertain or ambiguous surgery duration.” The Production and Operations Management Society (POMS) Conference, May 2015.
4. “Loss-constrained minimum cost flow under arc failure uncertainty with applications to risk-aware kidney exchange,” INFORMS Computing Society Conference, Richmond, VA, January 2015.
5. “Distributionally Robust Appointment Scheduling with Random Service Durations and No-shows,” INFORMS Computing Society Conference, Richmond, VA, January 2015.
6. “Sensor Deployment for Stochastic Traffic Congestion Observation,” INFORMS Annual Conference, San Francisco, CA, November 2014.

7. "Sensor Placement for Stochastic Traffic Congestion Observation," INFORMS Transportation Science and Logistics Society Workshop, June 2014.
8. "Chance-constrained surgery planning under uncertain or ambiguous surgery duration." The Manufacturing & Service Operations Management (MSOM) Conference, June 2014.
9. "Multi-stage Decomposition for Optimizing Integrated Allocation and Scheduling," INFORMS Optimization Society Conference, March 2014.
10. "Data Analytics, Risk Management, and Optimization Under Uncertainty," INFORMS Southeast Michigan Symposium, November 2013.
11. "What is Stochastic Optimization?" in the "What is..." seminar series in the Department of Mathematics, University of Michigan, November 2013.
12. "Stochastic Modeling Approaches for Managing Energy Footprints and Cloud Computing Service," Service-Science Cluster Best Paper Award Competition Session, INFORMS Annual Conference, October 2013.
13. "Robust Weight Optimization of Return and Reliability in Multi-Portfolio Optimization," INFORMS Annual Conference, Minneapolis, MN, Oct. 2013.
14. "Robust and Semi-robust Network Design under Demand and Topological Uncertainty," INFORMS Annual Conference, Minneapolis, MN, Oct. 2013.
15. "Interdicting Probabilistic Shortest Paths: Models, Algorithms, and Applications," INFORMS Annual Conference, Minneapolis, MN, Oct. 2013.
16. "Monitoring Quality and Fairness of Service in Stochastic Operating Room Allocation and Scheduling," INFORMS Healthcare Conference, Chicago, IL, June 2013.
17. "Two-Stage Models and Algorithms for Optimizing Infrastructure Design and Recovery Operations under Stochastic Disruptions," INFORMS Computing Society Conference, Santa Fe, NM, January 2013.
18. "Chance-Constrained Programming Models and Approximation Algorithms for the Balanced-Constrained Stochastic Bottleneck Spanning Tree Problem," INFORMS Computing Society Conference, Santa Fe, NM, January 2013.
19. "Risk and Energy Consumption Tradeoffs in Cloud Computing Service via Stochastic Optimization Models," International Workshop on Clouds and (eScience) Applications Management at IEEE/ACM UCC 2012, Chicago, IL, Nov. 2012.
20. "Risk Optimization in Joint Chance-Constrained Programming," INFORMS Annual Conference, Phoenix, AZ, Oct. 2012.
21. "Risk Interdiction and Risk-and-Return Tradeoffs in Probabilistic Programs with Single or Multiple Chance Constraints," 21st International Symposium of Mathematical Programming, Berlin, Germany, Aug. 2012.
22. "Modeling Minimum Flow Cost Problems under Stochastic Arc Failures," INFORMS Optimization Society Conference, Miami, FL, Feb. 2012.
23. "Exact Interdiction Models and Algorithms for Disconnecting Networks via Node Deletions," INFORMS Optimization Society Conference, Miami, FL, Feb. 2012.

24. "Exact Interdiction Models and Algorithms for Disconnecting Networks via Node Deletions," INFORMS Annual Conference, Charlotte, NC, Nov. 2011.
25. "Optimal Dynamic Energy Management for Smart Grid Consumers," INFORMS Annual Conference, Charlotte, NC, Nov. 2011.
26. "Exact Interdiction Models and Algorithms for Disconnecting Networks via Node Deletions," INFORMS Computing Society Conference, Monterey, CA, Jan., 2011.
27. "Expectation and Chance-Constrained-based Models and Algorithms for Insuring Critical Paths," INFORMS Annual Conference, Austin, TX, Nov. 2010.
28. "Exact Interdiction Models and Algorithms for Disconnecting Networks via Node Deletions," INFORMS Southern Regional Conference, Huntsville, AL, April, 2010.
29. "Two-stage Stochastic Integer Programming for Angiogenesis and Vascular Network Design," INFORMS Annual Conference, San Diego, CA, Oct. 2009.
30. "Expectation and Chance Constrained Models and Algorithms for Insuring Critical Paths," 20th International Symposium of Mathematical Programming, Chicago, IL, Aug. 2009.
31. "Expectation and Chance Constrained Models and Algorithms for Insuring Critical Paths," 11th INFORMS Computing Society Conference, Charleston, SC, Jan. 2009.
32. "Solving Stochastic Dispatching and Routing Problem in Emergency Response Service Using Approximate Dynamic Programming," INFORMS Annual Conference, Seattle, WA, Nov. 2007.

TEACHING

EIN 4343. Inventory and Supply Chain Systems

Fall 2009

Undergraduate senior course

University of Florida

Topics: Demand forecasting, inventory control, EOQ model, news-vendors problem, fundamentals of linear programming and network optimization, classical network flow models, the bullwhip effect, facility location problem, capacitated/incapacitated lot-sizing problem, supply chain risk management.

IOE 310. Introduction to Optimization

Winter 2014, 2015

Undergraduate senior course

University of Michigan

Topics: Matrix operations, basic convex analysis, mathematical modeling with emphasis on linear programming; introduction to integer programming, network optimization, and dynamic programming; simplex algorithms, engineering applications, relevant software (e.g., Excel solver, AMPL).

ENGR 455. Multidisciplinary Project Design

2012

New undergraduate multidisciplinary course

University of Michigan

Co-instruct with Prof. Amy Cohn and James Goebel.

Topics: This course collaborates with the Habitat for Humanity International, and optimizes transitional shelter construction in Haiti. We design an intervention process for an at-scale post-disaster shelter intervention that (a) provides immediate relief in

the form of low-cost, easily-produced transitional shelter and (b) integrates seamlessly into an on-going incremental shelter process based on local housing resources, and that leverages and augments livelihoods and micro-entrepreneurship. Course contents include decision tree analysis, supply chain guideline developments based on local inputs and outsourcing risk management.

IOE 510. Linear Programming I

Graduate course

Fall 2011-2015

University of Michigan

Topics: Mathematical modeling, linear algebra and matrices, the simplex algorithm, duality theory and optimality conditions, sensitivity analysis, network flows, combinatorial optimization, computations in AMPL, basics in decomposition, integer programming, and stochastic optimization.

IOE 612. Network Flows

Graduate course

Winter 2012, Fall 2013, 2015

University of Michigan

Topics: Basic graph theories, minimum cost flow, shortest path, minimum spanning tree, maximum flow (minimum cut), network simplex method, network interdiction and applications in homeland security, social networks, and epidemic control.

IOE 691. Special Topics on Stochastic and Robust Optimization

Graduate course; new course developed

Winter 2013, Fall 2014

University of Michigan

Topics: Sampling methods, stochastic mixed-integer programming models, decomposition methods, large-scale optimization, stochastic dynamic programming, approximation algorithms, chance-constrained programming, theories and applications of robust optimization, discussions of data driven models and relationship between different stochastic programs. (Co-instruct with Prof. M. Epelman)

STUDENTS AND COMMITTEE

Doctoral Students:

1. Yan Deng (2012-present)
 - a. 2014 Best Paper Award Honorable Mention of INFORMS Section on Public Programs, Services and Needs
 - b. 2014 Murty Prize for Best Research Paper on Optimization by an IOE Student
 - c. 2014 Michigan Institute for Computational Discovery & Engineering (MICDE) Student Fellowship
 - d. SIAM Optimization Conference (OPI4) Student Travel Award (2014)
 - e. Mixed Integer Programming Workshop Student Travel Award (2013, 2014, 2015)
 - f. Univ. of Michigan Rackham Graduate School Travel Grant (2012, 2013, 2014)
 - g. Graduate Student Research Assistantship, IOE Department, UM (2013, 2014)
 - h. Departmental Fellowship, IOE Department, UM (2012)
2. Zhihao Chen (2012-present)
 - a. Univ. of Michigan Rackham Graduate School Travel Grant, 2013, 2014
 - b. Graduate Student Research Assistantship, IOE Department, UM (2013, 2014)
 - c. Departmental Fellowship, IOE Department, UM (2012)

3. Kayse Maass (co-advised by M. Daskin; 2012-present)
 - a. 2013 National Science Foundation Graduate Fellowship
 - b. Univ. of Michigan Rackham Graduate School Travel Grant (2013, 2014)
 - c. Rackham Merit Fellowship (2012-2015)
4. Yuchen Jiang (co-advised by C. Shi; 2013-present)
 - a. Graduate Student Research Assistantship, IOE Department, UM (2014)
 - b. Departmental Fellowship, IOE Department, UM (2013)
5. Yiling Zhang (2015-present)
 - a. 2014-2015 Rackham International Student Fellowship

Master Students:

- Yiling Zhang (2014-present)
- Mingdi You (2012-2013; current position: PhD student in IOE, U of Michigan)
 - 2013 IOE Richard C. Wilson Prize
 - For paper titled “Cutting-plane approaches for designing robust and semi-robust networks under demand and topological uncertainty”
- Jue Wang (2012-2013; current position: PhD student in Queen’s School of Business)
 - 2013 INFORMS Service Science Section Best Paper Award Finalist
 - For paper titled “Stochastic modeling and approaches for managing energy footprints in Cloud Computing service”
- Andrew Orso (co-advised by J. Lee; 2013-2015)
 - 2014 National Science Foundation Graduate Fellowship
 - 2014 National Defense Science and Engineering Graduate (NDSEG) Fellowship (withdrawn)
 - Rackham Merit Fellowship (2013-2016)

Ph.D. Committees:

- Dr. Hao Zhou, IOE, University of Michigan. PhD defense, Sept. 2013. (Current Position: Ford, Detroit, MI)
- Dr. Li Yang, IOE, University of Michigan. PhD defense, April 2012. (Current position: Bloomberg, New York City, NY)
- Dr. Jin Hu, CSE, University of Michigan. PhD defense, October 2012. (Current position: IBM Research Laboratory)
- Dr. Kathryn Schumacher, IOE, University of Michigan. PhD defense, March 2014. (Current position: General Motor)
- Zohar Strinka, IOE, University of Michigan. PhD candidacy, May 2012.
- Yiran Liang, ME, University of Michigan. PhD candidacy, Nov. 2012.
- Liang Ding, Technology & Operations, Stephen M. Ross School of Business, U of Michigan. PhD candidacy, April 2015.

Undergraduate Major Projects Directed

- Multidisciplinary Design Program, “Emergency Market Mapping Analysis (EMMA) Adaptation for the Habitat for Humanity International (HfHI) Shelter Relief,” five UM

undergraduates involved, co-advise with Prof. A. Cohn and James Goebel, Winter – Fall 2012.

- Summer Research Opportunity Program (SROP), “A Dynamic Model for a Mobile Healthcare Facility Routing Problem,” co-advise with Prof. M. Lavieri, one undergraduate from the University of Puerto Rico involved (who later became a PhD student at IOE), Summer 2012.
- Marian Sarah Parker Scholars Program, Women in Science and Engineering (WISE), “Using Network Optimization Tools for Shelter Relief in Haiti,” one UM female junior student involved, Summer 2012. (The paper is one of the technical paper competition finalists in 2013 IIE Great Lakes Regional Conference.)
- Marian Sarah Parker Scholars Program, Women in Science and Engineering (WISE), “Optimizing Environmental Impacts and Social Welfare of Car Sharing.” one UM female sophomore involved, Summer 2015.

PROFESSIONAL MEMBERSHIP

- The Institute for Operations Research and Management Science (INFORMS)
 - Optimization Society, 2008-present
 - Computing Society, 2009-present
 - Health Applications Society, 2013-present
 - Service Science Section, 2013-present
 - Public Programs, Service and Needs Section (SPPSN), 2012-present
 - Transportation and Logistics Society, 2013-present
- Mathematical Optimization Society (MOS)
- Society for Industrial and Applied Mathematics (SIAM)
- Institute of Industrial Engineers (IIE)

EDITORIAL EXPERIENCE

- Guest editor:
 - Special issue of “Optimization in Military Applications,” *Optimization Letters*, September 2015.
- Associate editor:
 - *Optimization Letters*
- Reviewer:
 - *Operations Research, Mathematical Programming, Management Science, SIAM Journal on Optimization, Decision Analysis, IIE Transactions, Networks, Transportation Science, Naval Research Logistics, Discrete Optimization, European Journal of Operational Research, Computers & Operations Research, Optimization Letters, Journal of Global Optimization, OMEGA, Journal of Optimization Theory and Applications, Transportation Research Part B, Transportation Research Part C, Transportation Research Part E, Production and Operations Management, Journal of Heuristics, Journal of Scheduling, Computational Optimization and Applications*, and others

EXTRAMURAL SERVICE

- Program Committee & Local Committee, the 12th Mixed-Integer Programming (MIP) Workshop, 2015
- Vice President of Meeting, Women in OR/MS, 2015-2016
- Junior Vice President of Meeting, Women in OR/MS, 2014-2015
- Prize Committee of the WORMS Student Travel Award to the Industry Professional Colloquium (IPC) at the INFORMS Business Analytics and Operations Research Conference, March 2014.
- Prize Committee Judge, INFORMS Award for the Advancement of Women in OR/MS, 2013.
- Panelist, National Science Foundation/ENG/CMMI, 2013, 2015.
- Invited session chair, Production and Operations Management Society (POMS) Conference, 2015.
- Invited session chair, International Symposium of Mathematical Programming (ISMP), 2012, 2015.
- Invited session chair, OR2015, the international conference on Operations Research (Optima Decisions and Big Data), 2015.
- Invited session chair, INFORMS Computing Society Conference, 2011, 2013.
- Invited session chair, INFORMS Annual Conference, 2007-2015.
- Invited session chair, INFORMS Optimization Society Conference, 2012, 2014.
- Track chair, "Optimization under uncertainty," 2012 the Industrial and Systems Engineering Research Conference (IIE Annual Conference).

SELECTED INTERNAL SERVICE

- University of Michigan Spring Commencement Faculty Marshal, 2014, 2015.
- Department Seminar Organizer, IOE899, University of Michigan, Fall 2012.
- Department Committee, University of Michigan, 2013 – 2014.
- Graduate Admissions and Financial Aid Committee, 2012 – 2014.
- Operations Research Area, Department PhD Prelim Coordinator, 2013 – 2014.
- Engineering Advising Center, College of Engineering First Year Counselor, Fall 2012 – Winter 2014; Fall 2015-present.
- Faculty Participant, "NextProf – Future Faculty Workshop," College of Engineering, University of Michigan, 2013, 2014, 2015.
- Faculty Mentor of Summer Research Opportunity Program (SROP), University of Michigan, Summer 2012.
- Faculty Advisor of Women in Science and Engineering Program (WISE), 2011 – present.
- Invited Panelist, "Beyond Ebola: Understanding the Importance of Interdisciplinary Collaboration in a Global Setting," Undergraduate Research Opportunity Program (UROP), University of Michigan, Nov 4, 2014.