

CURRICULUM VITAE OF SOROUSH SAGHAFIAN

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Lab (Founder and Director): [Public Impact Analytics Science Lab \(PIAS-Lab\)](#) at Harvard

Assistant: Catherine Kearns (catherine_kearns@hks.harvard.edu)

Education

- **Ph.D. (2012)**, Industrial and Operations Engineering, University of Michigan
 - University of Michigan College of Engineering 2011 Outstanding Ph.D. Research Award
- **M.S. (2009)**, Mathematics, University of Michigan
- **M.S. (2005)**, Industrial Eng. and Operations Research, Sharif University of Technology, Tehran, Iran

Technical Areas of Interest

- **Healthcare Operations Research:** Stochastic modeling and optimization of patient flow in hospitals, stochastic medical decision-making, healthcare policy, healthcare delivery
- **Stochastic Decision-Making:** Dynamic decision-making under ambiguity, dynamic treatment regimes, control and design of queuing networks, control of inventory/production systems, stochastic scheduling (main methodological tools: Markov decision processes, partially observable Markov decision processes, multi-stage causal inference, queuing theory, sample-path analysis, multi-armed bandit indices, approximate and robust dynamic programming)
- **Machine Learning:** Reinforcement Learning, Unsupervised Learning
- **Operations Management:** Applications of dynamic decision-making in operations management, operational flexibility, mechanisms to mitigate supply chain disruption risks

Academic Employment

- **MIT**
 - Visiting Scholar (Sabbatical), MIT Sloan School of Management (2022)
- **Harvard University**
 - Associate Professor of Public Policy (Management, Leadership, and Decision Making), Harvard University, Harvard Kennedy School (2020-present)
 - Assistant Professor of Public Policy (Management, Leadership, and Decision Making), Harvard University, Harvard Kennedy School (2015-2020)
 - Faculty Affiliate, Harvard Mossavar-Rahmani Center for Business and Government (2021-present)
 - Faculty Affiliate, Harvard Data Science Initiative (2021-present)
 - Faculty Affiliate, Middle East Initiative (MEI), Belfer Center for Science and International Affairs (2021-present)
 - Faculty Affiliate, Harvard Center for Health Decision Science (2018-present)

- Associate Faculty, Harvard Ariadne Labs (Health Systems Innovation) (2018-present)
- Faculty Affiliate, Harvard Ph.D. Program in Health Policy (2016-present)
- **Mayo Clinic**
 - Adjunct Faculty of Healthcare Systems Engineering, Mayo Clinic College of Medicine (2013-2018)
- **Arizona State University**
 - Assistant Professor of Industrial Engineering, School of Computing, Informatics and Decision Systems Engineering (2012-2015).

Honors and Awards

- **INFORMS MSOM Young Scholar Prize (2021)** “[for] outstanding contributions to scholarship in operations management.”
- **Inaugural INFORMS 2020 Mehrotra Research Excellence Award** (first place) “for significant contributions to the practice of health applications through operations research (OR) and management science (MS) modeling and methodologies.”
- **Harvard Kennedy School Dinner on the Dean Excellence Award (Multiple Years)**
- **POMS (Production and Operations Management Society) 2019 College of Healthcare Best Paper Award** (first place)
- **INFORMS 2018 Public Sector Operations Research Best Paper Award** (second place)
- **INFORMS Decision Analysis Society 2018 Best Student Paper Award** (second place, awarded to Ph.D. advisee)
- **POMS (Production and Operations Management Society) 2017 College of Healthcare Best Paper Award** (second place)
- **INFORMS MSOM (Manufacturing & Service Operations Management) Journal 2016 Best Paper Award** (awarded to one paper among all published in the prior three years)
- **INFORMS MSOM Society 2016 Best Paper Award of Service Special Interest Group (SIG)**
- **INFORMS 2015 Junior Faculty Interest Group (JFIG) Paper Competition** (honorable mention)
- **Outstanding Professor Recognition– USCIS 2014**
- Research Paper selected as **one of five papers representing the best work published in MSOM Journal 2011-2015**
- **POMS (Production and Operations Management Society) 2013 College of Supply Chain Best Student Paper Award** (honorable mention)
- **INFORMS MSOM (Manufacturing & Service Operations Management Society) 2012 Best Student Paper Award** (first place)
- **2012 IOE Richard Wilson Prize** for the Best Student Paper
- **INFORMS 2011 Doing Good with Good OR Award** (finalist)
- **POMS 2011 College of Healthcare Best Paper Award** (second place)
- **University of Michigan College of Engineering 2011 Outstanding Ph.D. Research Award** (Richard and Eleanor Towner Award, \$2500)

- **INFORMS 2010 Pierskalla Award** for the Best Paper in Healthcare (from INFORMS Healthcare Applications Society, not a student paper award)
- **2010 Katta Murty Prize** for the Best Research Paper on Optimization
- **POMS 2009 College of Supply Chain Best Student Paper Award** (finalist)
- **IOE 2007 Bonder Fellowship Award in Applied Operations Research**
- **University of Michigan 2006 Named & Deans Fellowship Award**
- **Honor Society of Phi Kappa Phi**
- **University Honor of Exceptionally Outstanding Graduate Student** (Department of Industrial Engineering, Sharif University of Technology)
- **Top Ranked Graduate Student** for the highest graduate cumulative GPA among all peers (Department of Industrial Engineering, Sharif University of Technology)
- **Second Top Ranked Undergraduate Student** for the second highest cumulative GPA among all peers (Department of Industrial Engineering, Isfahan University of Technology)
- **Top 10 Students in the Country** for 9th highest score among about 3500 participants in Iranian Nation-Wide Graduate Entrance Exam

Research Funding Awards

- **Kuwait Science Foundation (The Middle East Initiative Program)** (July 2022- July 2024) “Improving Population Health in the Middle East via Machine Learning and AI-Enabled Mobile Health Interventions” Total Amount: \$204,440. Role: Principal Investigator.
- **National Science Foundation** (Grant CMMI-1562645, Aug. 2016 - Aug. 2019) “Data-Driven Management of Post-Transplant Medications”, Total Amount: \$305,857, Role: Principal Investigator. (In Collaboration with the Mayo Clinic).
- **National Science Foundation** (Grant CMMI-1562645, Aug. 2016 - Aug. 2019) “Research Experience for Undergraduates (REU) Supplement”, Total Amount: \$15,600. Role: Principal Investigator.
- **Harvard Kennedy School Dean’s Research Fund** (Jan. 2016 - Dec. 2019) “Towards Personalized Medicine: Utilizing Random Variation in Observational Data to Optimize Treatments”, Total Amount: \$5,000, Role: Principal Investigator.
- **Mayo Clinic** (Grant XSS0133, Aug. 2013 - Dec. 2015) “Bed-Block Phenomenon: A Significant Problem Affecting Patient Flow”, Total Amount: \$112,000, Role: Principal Investigator.

Professional Service

- **Invited Scientific Panels and Committees**
 - Academy of Management Professional Development Workshop Panel on the Applications of AI/Big Data/Machine Learning in Healthcare (2023, expected)
 - National Science Foundation Invited Panel on Digital Healthcare (SBIR/STTR: Healthcare Workflow and Delivery) (2022)
 - INFORMS MSOM Young Scholar Prize Selection Committee (2022)
 - Invited Reviewer for Research Grants Council of Hong Kong (2020)
 - Industry Studies Association (2020), Professional Development Workshop for Earlier Career Scholars
 - Invited Reviewer for Swiss National Science Foundation (2019)

- INFORMS Public Sector Operations Research Best Paper Award Committee (2018- present)
- INFORMS Pierskalla Award Committee for the Best Paper in Healthcare
- INFORMS Healthcare Applications Society Best Student Paper Award Review Panel (2015-present)
- INFORMS MSOM Best Student Paper Award Judge (2013-Present)
- POMS College of Healthcare Operations Management Best Paper Competition Judge (2016-present)
- INFORMS MSOM Healthcare Special Interest Group (SIG) Review Panel (2015-present)
- INFORMS MSOM Service Management Special Interest Group (SIG) Review Panel (2015-present)
- Health Systems Engineering Alliance Representative (2014- 2018)
- International Conference on Health Care Systems Engineering Review Panel (2013)

- **Conference Leadership and Service**
 - **MSOM Cluster Co-Chair of INFORMS 2021 Healthcare Conference**
 - **Session Organizer & Chair (INFORMS Healthcare 2021)** “Healthcare Operations and Policy”
 - **Session Organizer & Chair (INFORMS 2020)** “Healthcare Operations and Policy” [Invited Speakers: Baris Ata, Kamalini Ramdas, Robert Batt]
 - **Session Organizer & Chair (POMS 2020)** “Healthcare Policy: Quality and Allocation” [Invited Speakers: Dan Adelman, Jan Van Mieghem]
 - **Session Organizer & Chair (INFORMS Healthcare 2019)** “Intersection of Healthcare Policy and Healthcare Operations” [Invited Speakers: Robert Shumsky, Jan Van Mieghem]
 - **Session Organizer & Chair (INFORMS 2018)** “New Topics in Healthcare Policy” [Invited Speakers: Robert Huckman, Edieal Pinker]
 - **Session Organizer & Chair (INFORMS 2017)** “Advances in Healthcare Policy” [Invited Speakers: Lawrence Wein, Sergei Savin]
 - **Co-Chair of INFORMS MSOM 2017 Healthcare Special Interest Group (SIG) Conference**
 - **Session Organizer & Chair (POMS 2017)** “New Trends in Healthcare Policy” [Invited Speakers: Tinglong Dai, Hamed Mamani]
 - **Session Organizer & Chair (INFORMS 2016)** “Operations Research for Public Health: Data-Driven and Dynamic Decision-Making” [Invited Speakers: Brian Denton, Burhanedin Sandici]
 - **Session Organizer & Chair (INFORMS 2016)** “Advances in Emergency Department Operations Management/Research” [Invited Speakers: Eva Lee, Turgay Ayer]
 - **Session Organizer & Chair (POMS 2016)** “Advances in Emergency Department Operations Research/Management” [Invited Speakers: Vedat Verter, Tolga Tezcan, Ratna Chinnam]
 - **Session Organizer & Chair (INFORMS 2015)** “Operations Research/Management for Public Health: Data-Driven and Dynamic Decision-Making” [Invited Speakers: Retsef Levi, Brian Denton, Shan Liu, Zelda Zabinsky]
 - **Session Organizer & Chair (INFORMS 2015)** “Operations Research/Management for Women’s Health” [Invited Speakers: Margaret Brandeau, Beste Kucukyazici, Oguzhan Alagoz]
 - **Session Organizer & Chair (INFORMS 2014)** “Healthcare Operations Research” [Invited Speakers: Stefanos Zenios, Margaret Brandeau, Nilay Argon, Nan Kong]
 - **Session Organizer & Chair (POMS 2014)** “Hospital Operations: Emergency Department and Beyond” [Invited Speakers: Mor Armony, Yann Ferrand, Maria Shunko]
 - **Session Organizer & Chair (INFORMS 2013)** “Stochastic Operations Research in Healthcare” [Invited Speakers: Diwakar Gupta, Mark Van Oyen, Serang Deo]

- **Session Organizer & Chair (POMS 2013)** “Healthcare Operations Management” [Invited Speakers: Serhan Ziya, Jim Dai, Burhaneddin Sandikci]
- **Session Organizer & Chair (INFORMS 2012):** “Healthcare Operations: Emergency Department and Beyond” [Invited Speakers: Anita Tucker, Carri Chen, Linda Green, Vedat Verter]
- **Co-Chair of 2011 INFORMS Pierskalla Award Committee for the Best Paper in Healthcare (awarded by INFORMS Healthcare Applications Society)** [Committee: Stefanos Zenios, Retsef Levi, Linda Green, and Sergei Savin]
- **Session Organizer & Chair (INFORMS 2011):** “Emergency Department and Healthcare Operations Management” [Invited Speakers: Eva Lee, Stefanos Zenios, Christian Terweisch]
- **Session Organizer & Chair (INFORMS 2010):** “Patient Flows, ED, and Healthcare Operations Management,” [Invited Speakers: Brian Denton, Stefanos Zenios, Linda Green, Amy Ward]

School and University Service

- **Harvard University**
 - Harvard Kennedy School Faculty Research Seminar Organizer (2022)
 - Belfer Center for Science and International Affairs (Faculty Affiliate) (2021-presnet)
 - Harvard Data Science Initiative (Faculty Affiliate) (2021-presnet)
 - Harvard Mossavar-Rahmani Center for Business and Government (Faculty Affiliate) (2021-present)
 - Harvard Center for Health Decision Science (Faculty Affiliate) (2018-present)
 - Harvard Ariadne Labs (Associate Faculty Member) (2018-present)
 - Harvard Standing Committee on Higher Degrees in Public Policy (2018-present)
 - Harvard Ph.D. Program in Health Policy (Standing Committee) (2017-present)
 - Harvard Ph.D. Program in Health Policy (Faculty Affiliate) (2016-present)
 - Harvard HKS Faculty Search Committee for Quantitative Methods (2017-2018)
 - Harvard HKS Ph.D. Admission Committee (2015-present)

Editorial Service

- Book review for *Wiley* Publication (Healthcare Operations Research), *CRC Press* (Operations Research Series), and *Cambridge University Press* (Artificial Intelligence)
- Editorial Board of *Management Science*, *Operations Research*, *Production and Operations Management*, *Service Science*, *IIE Transactions*
- Associate Editor: *Management Science*, *Operations Research*, *Service Science*, *Naval Research Logistics* (Special Issue on Health Care Operations Management), *IIE Transactions*
- Referee for: *Management Science*, *Operations Research*, *Manufacturing and Service Operations Management*, *Operations Research Letters*, *Production and Operations Management*, *Health Care Management Science*, *Mathematical Reviews* (American Mathematical Society), *Naval Research Logistics*, *IIE Transactions*, *IIE Transactions on Healthcare Systems Engineering*, *Operations Research for Health Care*, *Flexible Services and Manufacturing*, *IEEE Transactions on Automation Science and Engineering*, *IEEE Transactions on Evolutionary Computation*

Refereed Publications (Published, Accepted, or in an Advanced Round)

[Underline denotes student advisees] [* denotes postdoc advisee] [“(M.D)” denotes M.D. collaborators]

1. **Saghafian, S., Song, L.**, J.P. Newhouse, Landrum, M.B., and J. Hsu (M.D.) “The Impact of Vertical Integration on Physician Behavior and Healthcare Delivery: Evidence from Gastroenterology Practices,” *Management Science*, 2023 (forthcoming).
 - **NBER Research Spotlight**
2. **Boloori, A.**, and **S. Saghafian** “Health and Economic Impacts of Lockdown Policies in the Early Stage of COVID-19 in the U.S.,” *Service Science*, 2023 (forthcoming).
3. Atkinson, M.K., and **S. Saghafian** “Who Should See the Patient? On Deviations from Preferred Patient-Provider Assignments in Hospitals,” *Health Care Management Science*, 2023 (forthcoming).
4. **Saghafian, S.**, Trichakis, N., Zhu, R., and Shih, H.A. (M.D.) “Joint Patient Selection and Scheduling under No-Shows: Theory and Application in Proton Therapy,” *Production and Operations Management*, 2023, 32 (2), 547-563.
5. **Saghafian, S.**, Tomlin, B.T. and S. Biller “Internet of Things and Data Fusion: Who Talks to Who?” *Manufacturing and Service Operations Management (M&SOM)*, 2022, 24 (1), 333-351.
6. **Saghafian, S.**, Song, L., and A. Raja (M.D.) “Towards a More Efficient Healthcare System: Opportunities and Challenges Caused by Hospital Closures Amid the COVID-19 Pandemic,” *Health Care Management Science*, 2022, 25, 187-190.
7. **Saghafian, S.** and S.A. Murphy “Innovative Healthcare Delivery: The Scientific and Regulatory Challenges in Designing mHealth Interventions” *National Academy of Medicine (NAM) Perspectives, Commentary*, 2021.
8. Hopp, W.J., Li, J., **Saghafian, S.**, and G. Wang “Employee Health Plans Powered by Analytics,” *Management and Business Review (MBR)*, 2021, 1 (3), 12-19.
9. Munshi, V.N., **Saghafian, S.**, Cook (M.D.), C.B., Aradhyula, S., and H.A. Chakkerla (M.D.) “Use of Imputation and Decision Modeling to Improve Diagnosis and Management of Patients at Risk for New-Onset Diabetes After Transplantation,” *Annals of Transplantation*, 2021, 26, e928624, 1-9.
10. **Saghafian, S.** and W.J. Hopp “Can Public Reporting Cure Healthcare? The Role of Quality Transparency in Improving Patient-Provider Alignment,” *Operations Research*, 2020, 68 (1), 71-92.
 - **INFORMS 2018 Public Sector Operations Research Best Paper Award** (second place)
 - **Media Coverage (Selected): The Hill, National Academy of Medicine, New-Meical.net, Industry Global News 24, Global Health News Wire, Eureka Alert (American Association for the Advancement of Science), Managed Healthcare Executive, and INFORMS.**
 - **SSRN’s Top Ten download list for Government Expenditures & Health; Microeconomic Studies of Health Markets; Health (Comparative); Social Economics.**
11. **Boloori, A.**, **Saghafian, S.**, Chakkerla, H.A. (M.D.), and C.B. Cook (M.D.) “Data-Driven Management of Post-Transplant Medications: An Ambiguous Partially Observable Markov Decision Process Approach,” *Manufacturing and Service Operations Management (M&SOM)*, 2020, 22 (5), 1066–1087.
 - **INFORMS Decision Analysis Society 2018 Best Student Paper Award** (second Place)
 - **INFORMS MSOM Society 2018 Healthcare Operations Management SIG** (among 8 papers accepted)
 - **POMS 2017 College of Healthcare Best Paper Award** (second place)
 - **INFORMS 2016 IBM Service Science Best Student Paper Award** (finalist)

12. Munshi, V.N., Saghafian, S., Cook (M.D.), C.B., Steidley (M.D.), D.E., Hardaway (M.D.), K.B., and H.A. Chakkerla (M.D.) "Incidence and Risk Factors for Post-Heart Transplantation Diabetes Mellitus," *American Journal of Cardiology*, 2020, 125 (3), 436-440.
13. Munshi, V.N., Saghafian, S., Cook (M.D.), C.B., Werner, K.T., and H.A. Chakkerla (M.D.) "Comparison of Post-Transplantation Diabetes Mellitus Incidence and Risk Factors between Kidney and Liver Transplantation Patients," *PLOS ONE*, 2020, 15 (1), 1-12, e0226873.
14. **Saghafian, S.** "Curing the Healthcare System: Does Transparency Help? 2020, *INFORMS OR/MS Today*, 47(1).
15. **Saghafian, S.** and W.J. Hopp "The Role of Quality Transparency in Healthcare: Challenges and Potential Solutions," *National Academy of Medicine (NAM) Perspectives, Commentary*, 2019.
16. Bren, A. and S. Saghafian "Data-Driven Percentile Optimization for Multi-Class Queueing Systems with Model Ambiguity: Theory and Application," *INFORMS Journal on Optimization*, 2019, 1(4), 267-287.
17. **Saghafian, S.**, W.J. Hopp, S.M.R. Iravani, Y. Cheng, and D. Diermeier "Workload Management in Telemedical Physician Triage and Other Knowledge-Based Service Systems," *Management Science*, 2018, 64 (11), 5180-5197.
18. **Saghafian, S.** "Ambiguous Partially Observable Markov Decision Processes: Structural Results and Applications," *Journal of Economic Theory*, 2018, 178, 1-35.
 - **INFORMS 2015 Junior Faculty Interest Group (JFIG) Best Paper Competition** (honorable mention)
 - **Lead Journal Article**
19. Hodgson (M.D.), N.R., **Saghafian, S.**, Mi, L., Buras, M.R., Katz (M.D.), E.D., Pines (M.D.), J.M., Sanchez (M.D.), L., Silvers (M.D.), S., Maher (M.D.), S.A., and S.J. Traub (M.D.) "Are Testers Also Admitters? Comparing Emergency Physician Resource Utilization and Admitting Practices," *American Journal of Emergency Medicine*, 2018, 36 (10), 1865-1869.
20. Traub (M.D.), S.J., **Saghafian, S.**, Judson (M.D.), K., Russi (M.D.), C., Madsen (M.D.), B., Cha (M.S.), S., Tolson, H.C., Sanchez (M.D.), L.D., and J.M. Pines (M.D.) "Interphysician Differences in Emergency Department Length of Stay," *Journal of Emergency Medicine*, 2018, 54 (5), 702-710.
21. Traub (M.D.), S.J., **Saghafian, S.**, Bartley (M.D.), A.C., Buras (M.D.), M.R., Stewart (M.D.), C.F., and Kruse (M.D.), B.T. "The Durability of Operational Improvements with Rotational Patient Assignment," *American Journal of Emergency Medicine*, 2018, 36 (8), 1367-1371.
22. Traub (M.D.), S.J., **Saghafian, S.**, Buras, M.R. (M.D.), Temkit, M.H. "Resource Utilization in Emergency Department Patients with Known or Suspected Poisoning," *Journal of Medical Toxicology*, 2017, 13 (3), 238-244.
23. Traub (M.D.), S.J., Temkit, M.H., and **S. Saghafian** "Emergency Department Holding Orders," *Journal of Emergency Medicine*, 2017, 52 (6), 885-893.
24. **Saghafian, S.** and B.T. Tomlin "The Newsvendor under Demand Ambiguity: Combining Data with Moment and Tail Information," *Operations Research*, 2016, 64 (1), 167-185.
25. **Saghafian, S.** and M.P. Van Oyen "Compensating for Dynamic Supply Disruptions: Backup Flexibility Design," *Operations Research*, 2016, 64 (2), 390-405.
 - **POMS (Production and Operations Management Society) 2013 College of Supply Chain Best Student Paper Award** (honorable mention)
 - **2012 Richard Wilson Prize**
26. **Saghafian, S.** and M.H. Veatch "A μ Rule for Two-Tiered Parallel Servers," *IEEE Transactions on Automatic Control*, 2016, 61 (4), 1046-1050.

27. Traub (M.D.), S.J., Stewart (M.D.), C., Didehban, R., Bartley, A., **Saghafian, S.**, Smith (M.D.), V. Silvers (M.D.), S., LeCheminant, R. and C.A. Lipinski (M.D.) “Emergency Department Rotational Patient Assignment,” *Annals of Emergency Medicine*, 2016, 67 (2), 206-215.
28. Traub (M.D.), S.J., Bartley, A., Didehban, R., Smith (M.D.), V., Lipinski (M.D.), C.A., and **S. Saghafian** “Physician in Triage versus Rotational Patient Assignment,” *Journal of Emergency Medicine*, 2016, 50 (5), 784-790.
29. **Boloori, A., Saghafian, S.**, Chakkerla, H.A. (M.D.), and C.B. Cook (M.D.) “Characterization of Remitting and Relapsing Hyperglycemia in Post-Renal-Transplant Recipients,” *PLOS ONE*, 2015, 10 (11), 1-16, e0142363.
30. **Saghafian, S.**, G. Austin, and S.J. Traub (M.D.) “Operations Research/Management Contributions to Emergency Department Patient Flow Optimization: Review and Research Prospects,” *IIE Transactions on Healthcare Systems Engineering*, 2015, 5 (2), 101-123.
 - **Featured Article in IIE Magazine**
31. Traub (M.D.), S.J., C. Stewart (M.D.), R. Didehban, D., Nestler (M.D.), Y.H., Chang, **S. Saghafian**, and C.A. Lipinski (M.D.) “Emergency Department Rapid Medical Assessment: Overall Effect and Mechanistic Consideration,” *Journal of Emergency Medicine*, 2015, 48 (5), 620-627.
32. **Saghafian, S.**, Hopp, W.J., Van Oyen, M.P., Desmond (M.D.), J.S., and S.L. Kronick (M.D.) “Complexity-Augmented Triage: A Tool for Improving Patient Safety and Operational Efficiency,” *Manufacturing and Service Operations Management (M&SOM)*, 2014, 16 (3), 329-345.
 - **INFORMS MSOM Journal 2016 Best Paper Award**
 - **INFORMS MSOM Society 2016 Best Paper Award of Service Special Interest Group (SIG)**
 - **Selected as one of five papers representing the best work published in MSOM 2011-2015 for distribution to Deans and Department Heads**
 - **First Place, INFORMS MSOM Society 2012 Best Student Paper Award**
 - **INFORMS 2011 Doing Good with Good OR Award (finalists)**
 - **Univ. of Michigan College of Engineering 2011 Outstanding Ph.D. Research Award (\$2500)**
33. **Saghafian S.** and X. Chao “The Impact of Operational Decisions on the Optimal Design of Salesforce Incentives,” *Naval Research Logistics*, 2014, 61 (4), 320-340.
34. Kim, E., **Saghafian, S.**, and M.P. Van Oyen “Joint Control of Production, Remanufacturing, and Disposal Activities in a Hybrid Manufacturing-Remanufacturing System,” *European Journal of Operational Research*, 2013, 231 (2), 337-348.
35. Li, X., Li, Y, and **S. Saghafian** “A Hybrid Manufacturing/Remanufacturing System with Random Remanufacturing Yield and Market-Driven Product Acquisition,” *IEEE Transactions on Engineering Management*, 2013, 60 (2), 424-437.
36. **Saghafian, S.**, Hopp, W.J., Van Oyen, M.P., Desmond (M.D.), J.S., and S.L. Kronick (M.D.) “Patient Streaming as a Mechanism for Improving Responsiveness in Emergency Departments,” *Operations Research*, 2012, 60 (5), 1080-1097.
 - **INFORMS 2010 Pierskalla Award** for the best paper in Healthcare
 - **POMS 2011 College of Healthcare Best Paper Award** (second place)
 - **INFORMS MSOM 2011 Healthcare Operations Management SIG** (among 6 papers accepted)
37. **Saghafian, S.** and M.P. Van Oyen “The Value of Flexible Suppliers and Disruption Risk Information: Newsvendor Analysis with Recourse,” *IIE Transactions*, 2012, 44 (10), 834-867.
 - **Featured Article in IIE Magazine**

- **POMS 2009 College of Supply Chain Best Student Paper Award** (among 4 finalists)
38. **Saghafian, S.**, Van Oyen, M.P., and B. Kolfal “The “W” Network and the Dynamic Control of Unreliable Flexible Servers,” *IIE Transactions*, 2011, 43 (12), 893-907.
- **2010 Murty Prize for the Best Paper on Optimization**
39. **Saghafian, S.** and M.R. Akbari “Integrative Cell Formation and Layout Design in Cellular Manufacturing Systems,” *Journal of Industrial and Systems Engineering*, 2009, 3 (2), 97-115.
40. Hejazi, S.R. and **S. Saghafian** “Flowshop Scheduling Problems with Makespan Criterion: a Review,” *International Journal of Production Research*, 2005, 43 (14), 2895-2929.
- **Cited over 400 times (Google Scholar)**
41. **Saghafian, S.** and S.R. Hejazi “Multi-criteria Group Decision Making Using A Modified Fuzzy TOPSIS Procedure,” *IEEE Proceedings, Computational Intelligence for Modeling, Control, and Automation* 2005, 2, 215-221.

Book Chapters (Refereed, Invited)

[Underline denotes student advisees] [* denotes postdoc advisee] [“(M.D)” denotes M.D. collaborators]

42. **Saghafian, S.**, Kilinc, D., and S.J. Traub (M.D.). “Dynamic Assignment of Patients to Primary and Secondary Inpatient Units: Is Patience a Virtue?”, 2022, *Cambridge Handbook on Productivity, Efficiency and Effectiveness in Healthcare* (forthcoming).
43. Ang, Y.Q., Chia, A. and **S. Saghafian** “Using Machine Learning to Demystify Startups Funding, Post-Money Valuation, and Success,” 2022, In: Babich V., Birge J.R., Hilary G. (eds), *Innovative Technology at the Interface of Finance and Operations. Springer Series in Supply Chain Management*, vol 11. Springer, Cham.
- **SSRN’s Top Ten download list**

Op-Ed Publications

44. **Saghafian, S.** “Why Healthcare Transparency Is Complicated and How It Can be Fixed,” *The Hill, Op-Ed* 2020, Feb. 19.

Publications (Submitted or In Progress)

[Underline denotes student advisees] [* denotes postdoc advisee] [“(M.D)” denotes M.D. collaborators]

45. **Saghafian, S.** “Ambiguous Dynamic Treatment Regimes: A Reinforcement Learning Approach,” *Under Second Round of Review at Management Science*, 2023.
46. Orfanoudaki*, A., **Saghafian, S.**, Song, Karen, Cook (M.D.), C.B. and H.A. Chakkera (M.D.). “Algorithm, Human, or the Centaur: How to Enhance Clinical Care?” *Under Review at Management Science*, 2023.
47. Bloori, A., **Saghafian, S.**, Traub (M.D.), S.J. “Understanding the Opioid Epidemic: Evidence-Based Management of Pain Treatments Using Longitudinal Machine Learning,” *Under Review at Management Science*, 2023.
48. Feizi*, A., Orfanoudaki*, A., **Saghafian, S.**, Hodgson (M.D.), N.R. “Does Machine Learning Help Hospital Operations? Evidence from a Vertical Model of Care Delivery,” *Work in Progress*, 2023.

49. Song, L. and **S. Saghafian** “The Spillover Effects of Hospital Closures on the Efficiency and Quality of Other Hospitals,” *Under Revision*, 2023.

➤ **POMS 2019 College of Healthcare Best Paper Award (first place)**

50. **Saghafian, S., Imanirad, R.,** Traub (M.D.), S.J. “Do Independent and Parallel Processing Physicians Influence Each Other's Performance? Evidence from the Emergency Department” *Under Revision*, 2023.

51. **Saghafian, S., Imanirad, R.,** Traub (M.D.), S.J. “Who Is an Effective and Efficient Physician? Evidence from Emergency Medicine” *Under Revision*, 2023.

52. Orfanoudaki*, A., Cook (M.D.), C.B., **Saghafian, S.,** Castro J., Kosiorek, H.E., and H.A. Chakkerla (M.D.). Diabetes Mellitus and Blood Glucose Variability Increases the 30-Day Readmission Rate After Kidney Transplantation. *Under Review*, 2023.

53. Hodgson (M.D.), N.R., **Saghafian, S.,** Klanderman (M.D.), M.C., Urumov (M.D.), A., Traub (M.D.), S.J. Physician-Driven Early Evaluation: Encounters Seen in a Vertical Model. *Under Review*, 2023.

54. Lipschitz (M.D.), J.M., Lin, S., **Saghafian, S.,** Burdick (M.D.), K.E. Mood Episodes Prediction in Patients with Bipolar Disorder Using Passively Collected Data from a Commercially-Available Smartwatch. *Work in Progress*, 2023.

55. Rasouli, M. and **S. Saghafian** “Robust Partially Observable Markov Decision Processes,” *Work in Progress*, 2023.

56. **Saghafian, S., Catillon, M.,** and R.J. Zeckhauser “Learning with Ethical Constraints: Stopping Decisions in Randomized Control Trials,” *Work in Progress*, 2023.

57. Song, L. and **S. Saghafian** “The Allocation of Funds in Healthcare: Which Hospitals to Support?” *Work in Progress*, 2023.

58. **Saghafian, S.** “The Analytics Science Behind ChatGPT: Human, Algorithm, or a Human-Algorithm Centaur?” *Work in Progress*, 2023.

59. **Saghafian, S.** “Causal and Counterfactual Reasoning Under Ambiguity,” *Work in Progress*, 2023.

Conference Proceedings

- Atkinson, M.K., and **S. Saghafian** “Who Should See the Patient? On Discretionary Patient-Provider Assignments in Hospitals,” *Academy of Management Annual Meeting Proceedings*, 2020.
- **Saghafian, S.** and B. Tomlin “The Newsvendor under Demand Ambiguity-Aversion: A Data and Information-Driven Approach” Refereed Extended Abstract, *Proceedings of 2015 Manufacturing and Service Operations Management (MSOM) Conference*.
- **Saghafian, S.** and B. Tomlin “The Newsvendor under Demand Ambiguity: Combining Data with Moment and Tail Information” Refereed Extended Abstract, *Proceedings of 2014 Manufacturing and Service Operations Management (MSOM) Conference*.
- **Saghafian, S.** and M.P. Van Oyen “Flexibility of Reliable Suppliers and Monitoring of Unreliable Suppliers: How Much Should a Manufacturer Invest?” Refereed Extended Abstract, *Proceedings of 2008 Manufacturing and Service Operations Management (MSOM)*.
- **Saghafian, S.,** Van Oyen, M.P., and B. Kolfal “A New Policy for the Control of Parallel Queuing Systems,” *Proceedings of 2009 NSF Engineering Research and Innovation Conference*, Honolulu, Hawaii.
- **Saghafian, S.** and M.P. Van Oyen “The Value of Operational Flexibility and Risk Level Information in Supply Chains under Disruption,” *Proceedings of 2008 NSF Engineering Research and Innovation Conference*, Knoxville, Tennessee.

- **Saghafian, S.** and M.R. Akbari “A Service Level Based Approach to Supply Chain Network Design”, *Proceedings of International Conference on Operations and Supply Chain Management (OSCM 2005)*, Bali, Indonesia.
- **Saghafian, S.** and M.R. Akbari “Location-Allocation Decisions for Supply Chain Networks Management: A Customer Satisfaction Focus,” *Proceedings of 3rd International Management Conference*, 2005.
- **Saghafian, S.** and M.R. Akbari “An Integrated Approach to Supply Chain Network Design with Service Level Consideration,” *Proceedings of First National Conference on Logistics and Supply Chain*, 2005.
- **Saghafian, S.** and M.R. Akbari “Integrative Cell Formation and Layout Design in Cellular Manufacturing Systems,” 1st Edition, *Proceedings of 3rd International Conference of Industrial Engineering (IIEC 2004)*.
- **Saghafian, S.** and M.R. Akbari “An Integrated Approach to Supply Chain Network Design with Service Level Consideration,” 2nd Edition, *Proceedings of 4th International Conference of Industrial Engineering (IIEC 2005)*.
- **Saghafian, S.** and M.R. Akbari “A New Hybrid Metaheuristic Approach to Cellular Manufacturing Systems Design,” *IEEE conference of Computational Intelligence: Methods and Applications (CIMA 2005)*, Istanbul, Turkey.

Other Publications

- **Boloori, A.** and **S. Saghafian** “COVID-19: What Intervention Policies Are Most Effective? A Brief Report Using Data from Government of Bahrain, *Technical Report* (HKS Working Paper RWP20-011), 2020.
- **Saghafian, S.**, G. Austin, and S.J. Traub (M.D.) “Operations Research/Management: The prescription for Emergency Departments?” *IIE Magazine* (featured article), 2015.
- **Saghafian, S.** and M.P. Van Oyen “Managing supply risks: Should you monitor your risky suppliers? Inject flexibility into your backup system?” *IIE Magazine* (featured article), 2012.
- **Saghafian, S.** “Heuristic Algorithms for Terminal Assignment Problem,” *Behood Industrial Engineering Journal*, 2002, 9, 57-61.
- **Saghafian, S.** “Assuring Performance in E-commerce Systems,” *Behood Industrial Engineering Journal*, 2002, 11 122-127.
- **Saghafian, S.** “Applications of WLANs: Wireless Local Area Networks,” *Behood Industrial Engineering Journal*, 2002, 7, 51-54.
- **Saghafian, S.** “An Intro to StarOffice 5.2,” *Behood Industrial Engineering Journal*, 2001, 5, 61-66.
- **Saghafian, S.** “Hacking Techniques,” *Arpanet*, 2002, 3, 55-63.
- **Saghafian, S.** “Windows Systems: A review,” *Behood Industrial Engineering Journal*, 2002, 9, 62-65.
- **Saghafian, S.**, M. Jalilpour and M. Setak “Applications of Neural Networks in Prediction,” *Proceedings of First Iranian National Conference on Logistics and Supply Chain*, 2005.
- **Saghafian, S.**, and M. Setak “Applications of Fuzzy Theory in Inventory and Production Control,” *Proceedings of First Iranian National Conference on Logistics and Supply Chain*, 2005.

Invited Keynote Speeches

- Queen's University Inaugural Healthcare Conference (2023, expected), Title of Keynote: TBD.
- 6th International Conference on Industrial and Systems Engineering (2020), Title of Keynote: Optimizing Healthcare Systems.
- Harvard Student Agencies Academies (2020), Title of Keynote: Machine Learning.

Invited Paid Speeches, Workshops, Lectures, and Seminars

- Harvard T.H. Chan School of Public Health (2023, expected), Program for Chairs of Clinical Services, Title of Seminar: Hospital Operations: Patient Flow Management.
- Institute for Mathematical and Statically Innovation (2023, expected), Workshop on Predictive Analytics, Business Modeling and Optimization in Healthcare Operations Management.
- Harvard T.H. Chan School of Public Health (2022), Program for Chairs of Clinical Services, Title of Seminar: Hospital Operations: Patient Flow Management.
- International Academic Program (2022), Universidad Autonoma de Madrid in collaboration with Harvard University David Rockefeller Center for Latin American Studies, Title of Seminar: Machine Learning and Public Policy.
- International Academic Program (2021), Universidad Autonoma de Madrid in collaboration with Harvard University David Rockefeller Center for Latin American Studies, Title of Seminar: Machine Learning and Public Policy.
- The AI Institute (2020), Title of Talk: Machine Learning and Public Policy.
- Harvard University, Chinese Executives (2019), Title of Seminar: Business Strategy in the Era of Artificial Intelligence and Machine Learning.
- Harvard University, Chinese Executives (2019), Title of Seminar: Optimizing Service Strategy and Operations
- International Academic Program (2019), Universidad Autonoma de Madrid in collaboration with Harvard University David Rockefeller Center for Latin American Studies, Title of Seminar: Machine Learning and Public Policy.

Invited National Institute of Health K01 Advisory Panel

- Machine Learning for Emergency Department Psychiatry, Applicant: Christopher Kennedy, Center for Precision Psychiatry at MGH / HMS
- Machine Learning to Reduce Adverse Events and Patient Outcomes Among Hospitalized Children, Applicant Mariam Atkinson, Department of Health Policy & Management, Harvard Chan School of Public Health

Invited Academic Research Seminars

- Stanford University, Graduate School of Business (2022)
- MIT, Operations Research Center (2022)
- Harvard University, Institute for Quantitative Social Sciences (2022)
- Massachusetts General Hospital (MGH), Institute for Technology Assessment (2022)
- Johns Hopkins University (2022)
- Frontiers of Big Data, AI, and Analytics (2022)

- University of Alabama, Culverhouse College of Business (2022)
- Harvard University, M-RCBG Center for Business and Government (2022)
- Brandeis University, International Business School (2021)
- Case Western University, Weatherhead School of Management (2021)
- Electronic Health Economics Colloquium (EHEC) (2020, presented by Ph.D. student advisee Lina Song)
- Sharif University of Technology (2020)
- Northeastern University, Dep. of Mechanical and Industrial Engineering (2019)
- MIT, Sloan School of Management (2018)
- University of Chicago, Booth School of Business (2017)
- University of British Columbia, Sauder School of Business (2017)
- Harvard University, Harvard Business School (2015)
- University of North Carolina (Chapel Hill), Kenan-Flagler Business School (2015)
- W.P. Carey School of Business (2014)
- University of Arizona, Systems and Industrial Engineering (2014)
- Mayo Clinic Hospital, Intersections in Health Care Delivery (2013)
- ASU & Mayo Clinic, Bio Medical Informatics (2013)
- MIT, Engineering Systems Division (2012)
- Purdue University, Krannert School of Management (2012)
- Northwestern University, Kellogg School of Management (2012)
- University of British Columbia, Sauder School of Business (2012)
- Dartmouth, Tuck School of Business (2012)
- University of Minnesota, Industrial and Systems Engineering Department (2012)
- Indiana University, Kelly School of Business (2012)
- Penn State University, Industrial and Manufacturing Engineering (2012)

Media Coverage (Selected)

- Soroush Saghafian's [Interview with PolicyCast on the Role of Data and Intelligent Policy Design in Healthcare](#)
- Soroush Saghafian's work on vertical integration in medicine: [Study Finds Vertical Integration in Medicine is Leading to Higher Costs and Worse Health Outcomes](#)
- Soroush Saghafian's work: [Vertical Integration is Hurting Healthcare](#)
- Soroush Saghafian's work on hospital closures: [How Do Hospital Closures Impact Patient Care?](#)
- Soroush Saghafian's [Interview with INFORMS about the role of OR/MS and Machine Learning in Healthcare Analytics and Policy Planning, and their Impact on Diversity, Equity, and Inclusion \(DEI\).](#)
- Soroush Saghafian on [ChatGPT, Cheating, and the Future of Education \[Harvard Crimson Magazine\]](#)
- Soroush Saghafian on [Optimizing Mobile Health \(mHealth\) Interventions in the National Academy of Medicine](#)
- Soroush Saghafian [Awarded INFORMS Young Scholar Prize](#)
- Soroush Saghafian [Awarded INFORMS Prize](#)

- Soroush Saghafian's work on COVID-19 policies: [Soroush Saghafian Provides the Quantitative Data and Analytic Model to Help States Weigh the Health Gains and Economic Burdens of Intervention Policies](#)
- Soroush Saghafian's work on COVID-19 policies: [Soroush Saghafian Analyzes Coronavirus Policy Options for the Government of Bahrain](#)
- Soroush Saghafian's work on [How the Public Sector and Civil Society Can Respond to the Coronavirus Pandemic](#)
- Soroush Saghafian's Op-Ed: [Why Health Care Transparency is Complicated and How It Can be Fixed \[The Hill\]](#)
- Soroush Saghafian's work: [Cutting ER Lines via Tele-Triage](#)
- Soroush Saghafian's [Interview with INFORMS on Healthcare Transparency](#)
- Soroush Saghafian's work: [Improving Quality Transparency in Healthcare \[National Academy of Medicine\]](#)
- Soroush Saghafian's work: [Increasing Transparency in the Healthcare System May Not Be Always Better \[www.news-medical.net\]](#)
- Soroush Saghafian's work: [Increasing Transparency in the Healthcare Sector: More Might Not Be Bette \[INFORMS\]](#)
- Soroush Saghafian's work: [New Research Explores on Increasing Transparency in the Healthcare Sector \[Industry Global News 24\]](#)
- Soroush Saghafian's work: [Increasing Transparency in the Healthcare Sector: More Might Not Be Bette \[Global Health News Wire\]](#)
- Soroush Saghafian's work: [Increasing Transparency in the Healthcare Sector: More Might Not Be Bette \[EurekAlert; American Association for the Advancement of Science\]](#)
- Soroush Saghafian's work: [Increasing Transparency in the Healthcare Sector: More Might Not Be Bette \[Managed Healthcare Executives\]](#)

Postdoctoral Advisees

- **Agni Orfanoudaki** (June 2021-June 2023). Ph.D. (2021) in Operations Research from MIT. Ph.D. advisor: Prof. Dimitris Bertsimas. Research area: The intersection of Optimization and Machine Learning with applications to healthcare. Position: Postdoc Fellow at the Harvard PIAS-Lab
- **Mohammad Zhalechian** (July 2022-July 2024). Ph.D. (2022) in Industrial and Operations Engineering from University of Michigan. Research Area: the intersection of Statistical Machine Learning and Operations Research. Position: Postdoc Fellow at the Harvard PIAS-Lab.
- **Arshya Feizi** (April 2022-April 2023). Ph.D. (2022) in Operations Management from Boston University. Research area: Hospital Operations. Position: Postdoc Fellow at the Harvard PIAS-Lab.
- **Xi Xiong** (July 2021-July 2022). Ph.D. (2021) in Transportation Planning and Engineering from New York University. Research area: Multi-agent reinforcement learning. Position: Postdoc Visiting Fellow at the Harvard PIAS-Lab.

Ph.D. Advisees

- **Jacob Jameson** (Current Ph.D. advisee)
- **Ibrahima (Ibou) Dieye** (Current Ph.D. advisee)
- **Sidian Lin** (Current Ph.D. advisee)
- **Amy Wickett** (Ph.D., Dec. 2022), Role: Committee Member. Dissertation Title: “Essays on Diversity.” Position on Graduation: Applied Scientist II at Uber.
- **Stuart Iler** (Ph.D., May 2022), Role: Committee Member. Dissertation Title: “Essays on Shock Propagation in Economic Production Networks.” Position on Graduation: Consultant at Resources for Future. Other committee members: Robert Stavins (HKS) and Joseph Aldy (HKS).
- **Raha Imanirad** (Ph.D., June 2020), Role: **Chair**. Dissertation Title: “Essays on Emergency Department Physician Performance”. Position on Graduation: Assistant Professor of Operations Management, Schulich School of Business, York University. Other committee members: Ananth Raman (HBS) and Ryan Buell (HBS).
- **Lina Song** (Ph.D., May 2020), Role: **Chair**. Dissertation Title: “Data-Driven Healthcare Operations Management: The Role of Provider Market and Public Policy”. Position on Graduation: Assistant Professor of Operations and Technology, University College London, School of Management. Other committee members: Joseph Newhouse (HMS and HKS) and Mary Beth Landrum (HMS).
- **Vidit Munshi** (Ph.D., May 2020), Role: Committee Member. Dissertation Title: “Risk-Based Strategies for Population Screening and Disease Management”. Position on Graduation: Lecturer, Questrom School of Business, Boston University. Other committee members: Jane Kim (HSPH) and Ankur Pandya (HSPH).
- **Alireza Boloori** (Ph.D., Apr. 2019), Role: **Chair**. Dissertation Title: “Data-Driven Decision-Making for Medications Management Modalities”. Position on Graduation: Assistant Professor (Dept. of Statistics and Probability), Michigan State University. Current Position: Assistant Professor of Business Analytics, University of Washington.
- **Austin Bren** (Ph.D., Apr. 2018), Role: **Chair**. Dissertation Title: “Data-Driven Robust Optimization in Healthcare Applications”. Position on Graduation: Operations Research Scientist at Opex Analytics.
- **Aysegul Demirtas** (Ph.D., Feb. 2018), Role: **Co-Chair**. Dissertation Title: “The Optimal Control of Child Delivery for Women with Hypertensive Disorders of Pregnancy”. Position on Graduation: Data Scientist at Intel.
- **Bahareh Azarnoush** (Ph.D., Dec. 2014), Role: Committee Member. Dissertation Title: “Holistic Learning for Multi-Target and Network Monitoring Problems”. Position on Graduation: Data Scientist at Netflix.

Non-Ph.D. Advisees

- Dean Mai, (Nov. 2023, expected), Harvard Master of Liberal Arts (ALM) Thesis, Title: “Human Preference for Machines Versus Human-based Judgement: A Balance Theory Perspective”
- Camille Ang, Mar. 2022 (HKS-HBS MPA/ID-MBA Student), Second Year Policy Analysis, Title: “Improving Cost Efficiency at PhilHealth: Towards Greater Health Risks Protection for Filipinos”.
- Jake Schneider, Mar. 2020 (MPA/ID Student), Second Year Policy Analysis, Title: “Dislocations in

Foreign Direct Investment: A Machine Learning Approach to Identifying Over- and Under-Invested International Markets”.

- Dana Rye, Mar. 2016 (Joint MBA and MPP Student), Policy Analysis Exercise Title: “Brigham & Women’s Hospital Endoscopy Unit TDABC Analysis”.
- Garret Austin, Dec. 2013 (Undergraduate Honors Thesis), Thesis Title: “Operations Research Contributions to Emergency Department Patient Flow Optimization”

Teaching

- **Harvard University**
 - Harvard T.H. Chan School of Public Health **Executive Education**: “Program for Chairs of Clinical Services” [Spring 2023]
 - Harvard Kennedy School **Executive Education**: Wexner Senior Leaders “Machine Learning and Big Data for Policymakers [Spring 2023]
 - API 222A Machine Learning and Big Data Analytics [Spring 2023]
 - Harvard Kennedy School **Executive Education**: “Services Delivery: Quality, Equity, Efficiency” [Summer 2022]
 - Harvard T.H. Chan School of Public Health **Executive Education**: “Program for Chairs of Clinical Services” [Spring 2022]
 - API 222A Machine Learning and Big Data Analytics [Fall 2021]
 - API 222B Machine Learning and Big Data Analytics [Fall 2021]
 - Harvard Kennedy School **Executive Education**: “Services Delivery: Quality, Equity, Efficiency” [Summer 2021]
 - API 222A Machine Learning and Big Data Analytics [Fall 2020]
 - API 222B Machine Learning and Big Data Analytics [Fall 2020]
 - API 115/ECON 2115 Econometric Methods II [Spring 2020- Machine Learning Module]
 - API 222A Machine Learning and Big Data Analytics [Fall 2019]
 - API 222B Machine Learning and Big Data Analytics [Fall 2019]
 - API 222B Machine Learning and Big Data Analytics [Spring 2019]
 - API 115/ECON 2115 Econometric Methods II [Spring 2019- Machine Learning Module]
 - API 222 Machine Learning and Big Data Analytics [Fall 2018]
 - API 201Z Quantitative Analysis and Empirical Methods [Fall 2017]
 - API 201Z Quantitative Analysis and Empirical Methods [Fall 2016]
 - MLD 603M Operations Management for Improving Public Services [Spring 2016]
- **Arizona State University**
 - IEE 575 Applied Stochastic Operations Research Models [Spring 2015]
 - IEE 470 Stochastic Operations Research [Spring 2015]
 - IEE 470 Stochastic Operations Research [Fall 2014]
 - IEE 575 Applied Stochastic Operations Research Models [Spring 2014]
 - IEE 470 Stochastic Operations Research [Fall 2013]
 - IEE 598 Stochastic Operations Research [Fall 2013]

- IEE 598 Operations Research in Hospitals [Spring 2013] (In collaboration with Mayo Clinic)
 - IEE 498 Operations Research in Hospitals [Spring 2013] (In collaboration with Mayo Clinic)
 - IEE 470 Stochastic Operations Research [Fall 2012]
 - IEE 598 Stochastic Operations Research [Fall 2012]
- **University of Michigan**
 - IOE 440 Operations Analysis and Management [Fall 2010]
 - IOE 440 Operations Analysis and Management [Fall 2009]

Conference Presentations

- **INFORMS 2022** (Indianapolis, IN, upcoming): “Analytics for Public Impact: Research Activities at the Public Impact Analytics Science Lab at Harvard” (**invited talk**)
- **INFORMS 2022** (Indianapolis, IN, upcoming): “Managing the Risk of Readmission for Solid Organ Transplant Patients” (Presented by postdoc fellow lab member, Agni Orfanoudaki) (**invited talk**)
- **INFORMS 2022** (Indianapolis, IN, upcoming): “A Comparison Between Rapid Medical Assessment vs. Fast-Track in Emergency Departments” (Presented by postdoc fellow lab member, Arshya Feizi) (**invited talk**)
- **INFORMS 2022** (Indianapolis, IN, upcoming): “Offline Policy Learning of Mobile Health Interventions for Bipolar Disorder Patients” (Presented by Ph.D. advisee Sidian Lin) (**invited talk**)
- **INFORMS 2022** (Indianapolis, IN, upcoming) A Data-driven Analytical Framework for the Opioid Prescription Epidemic (Presented by former advisee Alireza Boloori)
- **POMS 2022** (Virtual Conference): “The Allocation of Funds in Healthcare: Which Hospitals to Support” (Presented by former advisee Lina Song)
- **POMS 2022** (Virtual Conference): “The Impact of Vertical Integration on Healthcare Delivery: Evidence from Gastroenterology Practices” (Presented by former advisee Lina Song)
- **INFORMS 2021 (Anaheim, CA)**: “The Impact of Vertical Integration on Healthcare Delivery: Evidence from Gastroenterology Practices” (Presented by advisee Lina Song) (**invited talk**)
- **INFORMS Healthcare 2021** (Virtual Conference): “Who Should See the Patient? On Deviations from Routine Patient-Provider Assignments in Hospitals” (**cluster organizer, session organizer, and chair**)
- **INFORMS 2021 (Anaheim, CA)**: “Do Physicians Influence One Another’s Performance: Evidence from the Emergency Department” (Presented by advisee Raha Imanirad) (**invited talk**)
- **INFORMS Healthcare 2021** (Virtual Conference): “Who Should See the Patient? On Deviations from Routine Patient-Provider Assignments in Hospitals” (**cluster organizer, session organizer, and chair**)
- **INFORMS Healthcare 2021** (Virtual Conference): “The Impact of Vertical Integration on Healthcare Delivery: Evidence from Gastroenterology Practices” (Presented by advisee Lina Song) (**invited talk**)
- **INFORMS Healthcare 2021** (Virtual Conference): “The Allocation of Funds in Healthcare: Which Hospitals to Support” (Presented by advisee Lina Song) (**invited talk**)
- **MSOM 2021** (Virtual Conference): “Who Should See the Patient? On Deviations from Routine Patient-Provider Assignments in Hospitals” (**MSOM Healthcare SIG Talk**)

- **MSOM 2021** (Virtual Conference): “The Impact of Vertical Integration on Physician Behavior and Healthcare Delivery” (Presented by advisee Lina Song)
- **MSOM 2021** (Virtual Conference): “The Allocation of Funds in Healthcare: Which Hospitals to Support” (Presented by advisee Lina Song)
- **CORS (Canadian Operational Research Society) 2021** (Virtual Conference): “Do Physicians Influence One Another’s Performance: Evidence from the Emergency Department” (Presented by advisee Raha Imanirad)
- **POMS 2021** (Virtual Conference): “Vertical Integration and Quality: Evidence from Specialists-Hospital Integration” (Presented by Ph.D. student advisee Lina Song) (**invited talk**)
- **POMS 2021** (Virtual Conference): “The allocation of funds in healthcare: investment decisions under access-quality trade-off” (Presented by Ph.D. student advisee Lina Song) (**invited talk**)
- **POMS 2021** (Virtual Conference): “COVID-19: Health and Economic Impacts of Societal Intervention Policies in the U.S.” (Presented by Ph.D. student advisee: Alireza Boloori) (**invited talk**)
- **INFORMS 2020** (Virtual Conference): “Who Should See the Patient? On Discretionary Patient-Provider Assignments in Hospitals” (**session organizer and chair**)
- **INFORMS 2020** (Virtual Conference): “The Impact of Vertical Integration on Physician Behavior and Healthcare Delivery” (Presented by Ph.D. student advisee Lina Song) (**invited talk**)
- **INFORMS 2020** (Virtual Conference): “The Allocation of Funds in Healthcare: Which Hospitals to Support?” (Presented by Ph.D. student advisee Lina Song) (**invited talk**)
- **INFORMS 2020** (Virtual Conference): “Do Physicians Influence One Another’s Performance: Evidence from the Emergency Department” (Presented by Ph.D. student advisee Raha Imanirad) (**invited talk**)
- **Annual Meeting of Academy of Management 2020** (Vancouver, BC): “Who Should See the Patient? On Discretionary Patient-Provider Assignments in Hospitals” (Presented by collaborator Mariam Atkinson)
- **AcademyHealth 2020** (Boston, MA): “The Spillover Effects of Hospital Closures on the Efficiency and Quality of Other Hospitals” (Presented by Ph.D. student advisee Lina Song)
- **AcademyHealth 2020** (Boston, MA): “Vertical Integration and Quality: Evidence from Specialists-Hospital Integration” (Presented by Ph.D. student advisee Lina Song)
- **INFORMS Healthcare 2019** (Cambridge, MA): “Can Public Reporting Cure Healthcare? The Role of Quality Transparency in Improving Patient-Provider Alignment” (**session organizer and chair**)
- **INFORMS Healthcare 2019** (Cambridge, MA): “Do Hospital Closures Improve the Efficiency and Quality of Other Hospitals?” (Presented by Ph.D. student advisee Lina Song) (**invited talk**)
- **INFORMS Healthcare 2019** (Cambridge, MA): “Physician Peer Effects on Speed and Quality: Evidence from the Emergency Department” (Presented by Ph.D. student advisee Raha Imanirad) (**invited talk**)
- **INFORMS Healthcare 2019** (Cambridge, MA): “Who Is an Efficient and Effective Physician? Evidence from Emergency Medicine” (Presented by Ph.D. student advisee Raha Imanirad) (**invited talk**)
- **INFORMS Healthcare 2019** (Cambridge, MA): “Joint Patient Selection and Scheduling under No-Shows: Theory and Application in Proton Therapy” (Presented by co-author Nikos Trichakis): **invited talk**)
- **POMS 2019** (Washington, D.C.): “Physician Peer Effects on Speed and Quality: Evidence from the Emergency Department” (Presented by Ph.D. student advisee Raha Imanirad) (**invited talk**)
- **POMS 2019** (Washington, D.C.): “Do Hospital Closures Improve the Efficiency and Quality of Other

Hospitals?” (Presented by Ph.D. student advisee Lina Song) **(invited talk)**

- **INFORMS 2018** (Phoenix, AZ): “Workload Management in Telemedical Physician Triage and Other Knowledge-based Service Systems” **(invited talk)**
- **INFORMS 2018** (Phoenix, AZ): “Physician Peer Effects on Speed and Quality: Evidence from the Emergency Department” (Presented by Ph.D. student advisee Raha Imanirad) **(invited talk)**
- **INFORMS 2018** (Phoenix, AZ): “An Empirical Analysis of the Opioid Prescription Epidemic” (Presented by Ph.D. student advisee: Alireza Bolori) **(invited talk)**
- **INFORMS 2018** (Phoenix, AZ): “Who Is an Efficient and Effective Physician? Evidence from Emergency Medicine” (Presented by Ph.D. student advisee Raha Imanirad) **(invited talk)**
- **INFORMS 2018** (Phoenix, AZ): “Joint Patient Selection and Scheduling: Theory and Application in Proton Therapy” (Presented by Ph.D. student advisee Ruihao Zhu) **(invited talk)**
- **INFORMS 2018** (Phoenix, AZ): “Impact of Physician's Ambiguity on Management of Medications” (Presented by Ph.D. student advisee: Alireza Bolori) **(invited talk)**
- **INFORMS 2018** (Phoenix, AZ): “Do Hospital Closures Improve the Efficiency and Quality of Other Hospitals?” (Presented by Ph.D. student advisee Lina Song) **(invited talk)**
- **INFORMS 2018** (Phoenix, AZ): “Can Public Reporting Cure Healthcare? The Role of Quality Transparency in Improving Patient-Provider Alignment” **(session organizer and chair)**
- **INFORMS 2018** (Phoenix, AZ): “Comparison of Post-transplantation Diabetes Mellitus Features and Outcomes in Kidney, Liver, and Heart Transplantation Patients” (Presented by Ph.D. student advisee: Vidit Munshi) **(session organizer and chair)**
- **MSOM 2018: Healthcare Operations Management SIG** (Dallas, TX): “Data-Driven Management of Post-Transplant Medications: An APOMDP Approach” (Presented by Ph.D. student advisee: Alireza Bolori)
- **MSOM 2018** (Dallas, TX): “Can Public Reporting Cure Healthcare? The Role of Quality Transparency in Improving Patient-Provider Alignment”
- **MSOM 2018** (Dallas, TX): “The Internet of Things and Information Fusion: Who Talks to Who?”
- **MSOM 2018** (Dallas, TX): “Do Hospital Closures Improve the Efficiency and Quality of Other Hospitals?” (Presented by Ph.D. student advisee Lina Song)
- **MSOM 2018** (Dallas, TX): “Physician Peer Effects on Speed and Quality: Evidence from the Emergency Department (Presented by Ph.D. student advisee Raha Imanirad)
- **INFORMS 2017** (Houston, TX): “Impact of the United States Health Care Delivery System Reform on Care Patterns: Evidence from Cancer Care” (Presented by Ph.D. student advisee Lina Song) **(invited talk)**
- **INFORMS 2017** (Houston, TX): “Evaluating The Performance of Emergency Department Physicians” (Presented by Ph.D. student advisee Raha Imanirad) **(invited talk)**
- **INFORMS 2017** (Houston, TX): “A Contract Mechanism for the Opioid Prescription Epidemic” (Presented by Ph.D. student advisee Alireza Bolori) **(invited talk)**
- **INFORMS 2017** (Houston, TX): “Data-Driven Management of Post-Transplant Medications: An APOMDP Approach” (Presented by Ph.D. student advisee: Alireza Bolori) **(invited talk)**

- **INFORMS 2017** (Houston, TX): “Optimal Child Delivery Strategies for Hypertensive Disorders of Pregnancy” (Presented by Ph.D. student advisee Aysegul Demirtas) **(invited talk)**
- **INFORMS 2017** (Houston, TX): “Data-Driven Percentile Optimization for Multi-class Queueing Systems with Model Ambiguity: Theory and Application” (Presented by Ph.D. student advisee Austin Bren) **(invited talk)**
- **MSOM 2017** (Chapel Hill, NC): “Data-Driven Management of Post-Transplant Medications: An APOMDP Approach” (Presented by Ph.D. student advisee: Alireza Boloori)
- **POMS 2017** (Seattle, WA): “Hospital-Patient Alignment in Healthcare Systems” **(session organizer and chair)**
- **POMS 2017** (Seattle, WA): “Impact of Medicare's Guidelines on the Opioid Epidemic” (Presented by Ph.D. student advisee: Alireza Boloori) **(session organizer and chair)**
- **POMS 2017** (Seattle, WA): “Data-Driven Management of Post-Transplant Medications: An APOMDP Approach” (Presented by Ph.D. student advisee: Alireza Boloori) **(invited talk) (POMS College of Healthcare Best Paper Award Finalist)**
- **American College of Emergency Physicians Research Forum 2016** (Las Vegas, NV) “Physician-level Differences in Emergency Department Length of Stay” (presented by co-author S. Traub)
- **INFORMS 2016** (Nashville, TN): “Ambiguous Partially Observable Markov Decision Processes” **(invited talk)**
- **INFORMS 2016** (Nashville, TN): “Impact of Ambiguity on Medications Management Strategies: An Application to NODAT” (Presented by Ph.D. student advisee: Alireza Boloori) **(session organizer and chair)**
- **INFORMS 2016** (Nashville, TN): “Robust Data-Driven Emergency Department Management via Percentile Optimization: Multi-Class Queueing Systems with Model Ambiguity” (presented by Ph.D. student advisee: Austin Bren) **(session organizer and chair)**
- **INFORMS 2016** (Nashville, TN): “Optimal Intervention Strategies for Hypertensive Disorders of Pregnancy” (presented by Ph.D. student advisee: Aysegul Demirtas) **(session organizer and chair)**
- **INFORMS 2016** (Nashville, TN): “Assignment Policy to Improve Emergency Department Boarding Time: A Safety and Quality Of Care Perspective” (presented by Ph.D. student advisee: Derya Kilinc) **(session organizer and chair)**
- **PCOGS (Pacific Coast OB/GYN Society) 2016** (Sun Valley, ID) “Assessing the Maternal & Neonatal Risk of Childbirth Morbidly for Women with Hypertensive Disorder of Pregnancy” (Presented by co-author Dean Coonrod)
- **POMS 2016** (Orlando, FA) “A Robust POMDP Framework for the Management of Post-Transplant Medications” **(Invited Talk)** (presented by Ph.D. student advisee: Alireza Boloori)
- **POMS 2016** (Orlando, FA) “Dynamic Assignment of Emergency Department Patients to Primary and Secondary Inpatient Units” (presented by Ph.D. student advisee: Derya Kilinc) **(session organizer and chair)**
- **POMS 2016** (Orlando, FA) “Percentile Optimization in Multi-Class Queueing Systems with Parameter Ambiguity” (presented by Ph.D. student advisee: Austin Bren) **(session organizer and chair)**

- **INFORMS 2015** (Philadelphia, PA) “Ambiguous Partially Observable Markov Decision Processes: Structural Results and Applications” (**invited talk**) **INFORMS 2015 Junior Faculty Interest Group (JFIG) Best Paper Competition** (Honorable Mention)
- **INFORMS 2015** (Philadelphia, PA) “The Newsvendor under Demand Ambiguity: Combining Data with Moment and Tail Information” (**invited talk**)
- **INFORMS 2015** (Philadelphia, PA) “Percentile Optimization in Multi-Class Queueing Systems with Parameter Ambiguity” (presented by Ph.D. student advisee: Austin Bren) (**session organizer and chair**)
- **INFORMS 2015** (Philadelphia, PA) “Dynamic Assignment of Emergency Department Patients to Primary and Secondary Inpatient Units” (presented by Ph.D. student advisee: Derya Kilinc) (**session organizer and chair**)
- **INFORMS 2015** (Philadelphia, PA) “A Robust POMDP Framework for the Management of Post-Transplant Medications” (presented by Ph.D. student advisee: Alireza Bolori) (**session organizer and chair**)
- **INFORMS 2015** (Philadelphia, PA) “The Optimal Control of Child Delivery for Women with Hypertensive Disorders of Pregnancy” (presented by Ph.D. student advisee: Aysegul Demirtas) (**session organizer and chair**)
- **MSOM 2015** (Toronto, ON) “The Newsvendor under Demand Ambiguity-Aversion: A Data and Information-Driven Approach”
- **Society for Academic Emergency Medicine 2014 (Dallas, TX)** “Rapid Medical Assessment Team in Triage: Overall Effect and Subgroup Analysis” (presented by co-author S. Traub)
- **Society for Academic Emergency Medicine 2014 (Dallas, TX)** “Operational Improvements Associated with an Algorithmic Patient Assignment System” (presented by co-author S. Traub)
- **INFORMS 2014** (San Francisco, CA) “The Newsvendor under Demand Ambiguity: Combining Data with Moment and Tail Information” (**invited talk**)
- **MSOM 2014** (Seattle, WA) “The Newsvendor under Demand Ambiguity: Combining Data with Moment and Tail Information”
- **POMS 2014:** (Atlanta, GA) “Bed-Block Management in Emergency Departments” (**session organizer and chair**)
- **INFORMS 2013** (Minneapolis, MN) “The Role of Flexible Beds in Bed-Block Management” (**session organizer and chair**)
- **INFORMS 2013** (Minneapolis, MN) “Doing while Learning: Data Driven Production Strategies under Ambiguity” (**invited talk**)
- **INFORMS Healthcare 2013** (Chicago, IL) “Bed-Block Management in Emergency Departments: The Role of Flexible Beds” (**invited talk**)
- **INFORMS Healthcare 2013** (Chicago, IL) “Triage and Patient Flow Design in Hospital Emergency Departments” (**invited talk**)
- **POMS 2013: College of Supply Chain Best Student Paper Award Finalist** (Denver, CO): “Compensating for Dynamic Supply Disruptions with Backup Flexibility” (**invited talk**)

- **POMS 2013** (Denver, CO) “Complexity-Based Triage for Hospital Emergency Departments” (**invited talk**)
- **INFORMS 2012** (Phoenix, AZ) “An Enhanced Triage System for Emergency Departments” (**session organizer and chair**)
- **POMS 2012** (Chicago, IL) “A New Triage System for Emergency Departments” (**invited talk**)
- **POMS 2012** (Chicago, IL) “Compensating for Dynamic Supply Disruptions with Backup Flexibility” (**invited talk**)
- **INFORMS 2011: Doing Good with Good OR Award Finalists** (Charlotte, NC): “Improving Patient Flow in Emergency Departments”
- **INFORMS 2011**(Charlotte, NC): “Complexity-Based Triage: A Tool for Improving Patient Safety and Operational Efficiency” (**session organizer and co-chair**)
- **MSOM 2011: Healthcare Operations Management SIG** (Ann Arbor, Michigan): “Improving Patient Flow in Emergency Departments” (**among 6 papers accepted**)
- **POMS 2011** (Reno, NV): “Patient Streaming as a Mechanism for Improving Responsiveness in Emergency Departments” (**2nd place for best student paper award**)
- **INFORMS Healthcare 2011** (Montreal, Canada): “Emergency Department Patient Flow Redesign” (**invited talk**)
- **Society for Academic Emergency Medicine (SAEM) 2011 Meeting** (Boston, MA): “Modeling the Operational Characteristics of Patient Flow Schemes: Streaming vs Pooling”
- **INFORMS 2010** (Austin, TX): “Patient Streaming as a Mechanism for Improving Responsiveness in Emergency Departments” (**INFORMS Pierskalla Best Paper Award**).
- **INFORMS 2010** (Austin, TX): “Overcoming Crowding in Emergency Departments: A New Streaming Mechanism” (**session organizer and co-chair**).
- **INFORMS 2010** (Austin, TX): “Dynamic Control of Unreliable Flexible Servers: The “W” Network” and Beyond” (**invited talk**)
- **INFORMS 2010** (Austin, TX): “Disruption Risk Information and Flexible Backup Suppliers” (**invited talk**)
- **Mayo Clinic 2010 Conference** (Rochester, MN) “A New Patient Flow Design for Emergency Departments”
- **University of Michigan Hospital 2010**: “Understanding Streaming VS. Pooling in Emergency Departments: Queueing Theory and Simulation” (**invited talk**)
- **INFORMS 2009** (San Diego, CA): “Dynamic Control of Flexible Servers under the Risk of Disruptions”
- **POMS 2009** (Orlando, FL): “The Value of Flexible Suppliers and Disruption Risk Level Information in Supply Chains” (**finalist for POMS College of Supply Chain best student paper award**)
- **INFORMS 2008** (Washington DC): “Stochastic Networks with Breakdowns: Effective Control of Flexible Servers”
- **MSOM 2008** (College Park, MD): “Flexibility of Reliable Suppliers and Monitoring of Unreliable Suppliers: How Much Should a Manufacturer Invest?”

- **NSF 2008** (NSF Engineering Research and Innovation Conference, Knoxville, Tennessee)
- **IHD 2008** (Third Annual Conference on Improving Healthcare Delivery, Cincinnati, OH).
- **INFORMS 2007** (Seattle, WA): “The Value of Flexible Suppliers in Supply Chains”
- **International Conference of Industrial Engineering (IIEC)** 2004 & 2005
- **International Management Conference (IMC)** 2004 & 2005

Poster Presentations (Selected)

- **Harvard Psychiatry Research Day 2023** (Boston, MA): Pike, C. K., Lin, S., Saghafian, S., Lebovitz, J., & Burdick, K. E., & Lipschitz, J. M. “Relationship between smartwatch sleep metrics over 9 months and history of suicide attempt among adults with bipolar disorder.”