Pengyi Shi

Krannert School of Management
Purdue University
403 W State St, West Lafayette, IN 47907
Email: shi178@purdue.edu
Webpage: http://web.ics.purdue.edu/~shi178/

EDUCATION

- **Georgia Institute of Technology**, Atlanta, GA, August 2007 – December 2013
  Ph.D. in Industrial Engineering (minor in Statistics)
  Thesis title: "Stochastic modeling and decision making in two healthcare applications: inpatient flow management and pandemic response"
  Advisors: Professors Jim Dai and Pinar Keskinocak
- **Peking University**, Beijing, China, September 2003 – June 2007
  B.Eng in Applied Mathematics and Mechanics and B.A. in Economics (double major)

EMPLOYMENT

- **Purdue University**, West Lafayette, IN
  Associate Professor, Krannert School of Management, August 2021 – Present
  Assistant Professor, Krannert School of Management, January 2014 – August 2021
  Courtesy Affiliation with Regenstrief Center for Healthcare Engineering, July 2017 – Present

OPERATIONS MANAGEMENT PUBLICATIONS

‡ denotes industry/medical collaborator; underline denotes student

*denotes first author or co-first author in papers with more than three authors

[P10] **P. Shi***, J. Helm, C. Chen, J. Lim, R. Parker, T. Tinsley‡ , J. Cecil‡ (2020). "Operations (Management) Warp Speed: Parsimonious Design for Rapid Deployment of Hospital Prediction and Decision Support Framework during a Pandemic." Forthcoming, *POM* special issue on *Managing Pandemics: A POM Perspective.*

[P9]. J. Chen, J. Dong, **P. Shi** (2020). "A Survey on Skill-Based Routing with Applications to Service Operations Management." *Queueing Systems* (4):1-30.

[P8]. **P. Shi***, J. Helm, S. Heese, A. Mitchell‡ (2020). "A Queueing Framework for Evaluating Adoption of New Diagnostic Tests into Clinical Workflow." *Production and Operations Management*, forthcoming.

[P7]. **P. Shi***, J. Helm, J. Deglise-Hawkinson‡, J. Pan‡ (2020). "Timing it Right: Balancing Inpatient Congestion versus Readmission Risk at Discharge." *Operations Research*, forthcoming.

- First place, MSOM Responsible Research in OM Award, INFORMS MSOM, 2021
- First place, Pierskalla Best Paper Award, INFORMS HAS, 2018
- Second place, CHOM Best Paper Award, POMS, 2019
- Second place, Innovative Applications in Analytics Award, INFORMS Analytics, 2020
- Selected for Healthcare SIG Presentation, MSOM, 2019
- Selected for Showcase Presentation at CHOM Mini-Conference, POMS, 2019
- Pilot implementation of the tool at a local hospital in Indiana
- All-time (1997-2020) 11th Top Downloaded Paper on SSRN *OPER: Computational*
  https://papers.ssrn.com/sol3/JELJOUR_Results.cfm?form_name=journalBrowse&journal_id=1091976&SortOrder=numHits%20desc

[P6]. J. G. Dai, **P. Shi** (2020). "Recent Modeling and Analytical Advances in Hospital Inpatient Flow Management." *Production and Operations Management*, forthcoming.

[P5]. A. Alaeddini, J. Helm, **P. Shi**, S. Faruqui (2019). "An Integrated Framework for Reducing Hospital Readmissions using Risk Trajectories Characterization and Discharge Timing Optimization." *IIE Transactions on Healthcare Systems Engineering*, 9(2):172-185.

[P4]. J. G. Dai, **P. Shi** (2019). "Inpatient Overflow: An Approximate Dynamic Programming Approach." *Manufacturing & Service Operations Management*, 21(4):894-911.

[P3]. J. Feng, **P. Shi** (2018). "Steady-state Diffusion Approximations for Discrete-time Queue in Hospital Inpatient Flow Management." *Naval Research Logistics*, 65(1):26-65.

- Top 20 most read paper in Naval Research Logistics (2017-2018)

[P2]. J. G. Dai, **P. Shi** (2017). "A Two-time-scale Approach to Time-varying Queues in Hospital Inpatient Flow Management." *Operations Research*, 65(2):514-536.

[P1]. **P. Shi***, M. Chou, J. G. Dai, D. Ding, and J. Sim‡, (2016). "Models and Insights for Hospital Inpatient Operations: Time-Dependent ED Boarding Time." *Management Science*, 62(1):1-28.

- https://review.chicagobooth.edu/magazine/spring-2016/four-ways-to-make-hospitals-more-efficient

CONFERENCE PUBLICATIONS

‡ denotes industry/medical collaborator; underline denotes student

*denotes first author or co-first author in papers with more than three authors

[C7] Z. Zhang, **P. Shi,** A. W. Ward (2021). "Routing for Fairness and Efficiency in a Queueing Model with Reentry and Continuous Customer Classes." Submitted to *2022 American Control Conference (ACC)*.

[C6] T. Jang, H Gao, **P. Shi**, X. Wang (2021). "Learning Fair Representation via Posterior Regularization." Submitted to *2022 International Joint Conference on Artificial Intelligence (IJCAI)*.

[C5] T. Jang, **P. Shi,** X. Wang (2021). "Group-Aware Threshold Adaptation for Fair Classification."

- *Thirty-Sixth AAAI Conference*, forthcoming (acceptance rate: 15%)

[C4]. X. Liu, B. Li, **P. Shi**, L. Ying (2021). "Online Resource Management: A Lyapunov Drift Approach."

- *NeurIPS 2021*, forthcoming (acceptance rate: 26%)
- *Selected for RLNQ 2021 Workshop*

[C3]. X. Chen, **P. Shi**, X. Wang (2021). "Data Pooling for Reinforcement Learning with Applications to Healthcare Intervention." *ICML RL4RL Workshop, Spotlight Talk* (acceptance rate 13%)

[C2]. Y. Pan, Z. Xu, et al. **P. Shi**, H. Pan‡, K. Yang‡, S. Wu‡ (2021). "A High-fidelity, Machine-learning Enhanced Queueing Network Simulation Model for Hospital Ultrasound Operations." *Proceedings of the 2021 Winter Simulation Conference.*

[C1]. I. Attari, P. Crain, **P. Shi,** J. Helm, N. Adams‡ (2021). "A Simulation Analysis Of Analytics-driven Community-based Re-integration Programs." *Proceedings of the 2021 Winter Simulation Conference.*

MEDICAL PUBLICATIONS

‡ denotes industry/medical collaborator; underline denotes student

*denotes first author or co-first author in papers with more than three authors

[M8]. S. Alam*, X. Gao*, **P. Shi***, F. Dexter, N. Kong, J. Helm (2021). "Interpretable Machine Learning Models to Predict Hospital Patient Readmissions." Under revision.

[M7]. F. Dexter‡, R. H. Epstein‡, **P. Shi** (2021). "Proportions of Outpatients Discharged the Same or the Following Day are Sufficient Data to Guide the Assessment of the Cases." *Cureus* 13 (3).

[M6]. F. Dexter‡, R. H. Epstein‡, **P. Shi** (2020). "Forecasting the Probability That Patient Will Remain in the

Hospital Overnight Versus Have a Length of Stay of 2 or More Days." *Cureus* 12(10): e10847.

[M5]. **P. Shi***, J. Yan*, P. Keskinocak, A. L Shane‡, J. L Swann (2020). "The Impact of Opening Dedicated Clinics on Disease Transmission during an Influenza Pandemic." *PLoS ONE*[1], 15(8): e0236455.

[M4]. **P. Shi***, F. Dexter‡, R. H. Epstein‡ (2016). "Comparing Policies for Case Scheduling within One Day of Surgery by Markov Chain Models." *Anesthesia & Analgesia*[2], 122:526-538.

[M3]. F. Dexter‡, **P. Shi**, R. H. Epstein‡ (2012). "Descriptive Study of Case Scheduling and Cancellations within One Week of the Day of Surgery." *Anesthesia & Analgesia*, 115(5):1188-1195.

[M2]. **P. Shi***, P. Keskinocak, J. L. Swann, B. Y. Lee‡ (2010). "The Impact of Mass Gatherings and Holiday Travelling on the Course of an Influenza Pandemic: A Computational Model." *BMC Public Health*[3], 10:778.

[M1]. **P. Shi***, P. Keskinocak, J. L. Swann, B. Y. Lee‡ (2010). "Modeling Seasonality and Viral Mutation to Predict the Course of an Influenza Pandemic," *Epidemiology and Infection*[4], 138(10):1472-1481.

PAPERS UNDER REVIEW AND REVISION

‡ denotes industry/medical collaborator; underline denotes student

*denotes first author or co-first author in papers with more than three authors

[R7] J. Chen, J. Dong, **P. Shi** (2021). "Optimal Routing under Demand Surges: The Value of Future Arrival Rates." Under revision.

- Finalist, 2021 INFORMS Service Science IBM Best Student Paper Competition

[R6] X. Chen, **P. Shi**, X. Wang (2022). "Data Pooling for Reinforcement Learning with Applications to Healthcare Intervention." To be submitted (target: *Management Science*).

[R5] Y. Pan, **P. Shi** (2022). "Refined Mean-Field Approximation for Discrete-Time Queueing Networks with Blocking." Submitted to *Naval Research Logistics*.

- Finalist, 2021 INFORMS Undergraduate OR Prize

[R4] J. Dong*, **P. Shi***, F. Zheng*, J. Xin‡ (2021). "Structural Estimation of Load Balancing Behavior in Inpatient Ward Networks." Under revision.

[R3]. Y. Liu*, **P. Shi***, J. Helm, M. Van Oyen, L. Ying, Hucshka‡ (2021). "Coordinated Care: Capacity Allocation to Improve Itinerary Completion in Queueing Networks." Under revision.

[R2]. J. Dong*, **P. Shi***, F. Zheng*, J. Xin‡ (2020). "Off-service Placement in Inpatient Ward Network: Resource Pooling versus Service Slowdown." Preparing resubmission.

- Second place, CHOM Best Paper Award, POMS, 2020
- Selected for Healthcare SIG Presentation, MSOM, 2019

[R1]. X. Liu, B. Li, **P. Shi**, L. Ying (2021). "Online Resource Management: A Lyapunov Drift Approach." Journal version in preparation (target: *Operations Research*).

WORKING PAPERS AND WORK-IN-PROGRESS

ǂ denotes industry/medical collaborator; underline denotes student

*denotes first author or co-first author in papers with more than three authors

[WP1]. Q. Xu, H. Honnappa, **P. Shi**. Learning Doubly-Stochastic Poisson Process for Hospital Networks.

[WP2]. J. G. Dai, **P. Shi**, J. Sun. Proximal Policy Optimization for Routing in Queueing Networks: An

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[1] 2019 Impact Factor: 2.74

[2] 2019 Impact Factor: 4.31

[3] 2019 Impact Factor: 2.52

[4] 2019 Impact Factor: 2.15

Application to Inpatient Overflow Management.

[WP3]. X. Gao, **P. Shi**, N. Kong. Optimal Routing for Incarceration Diversion: A Policy Gradient Method.

[WP4]. I. Attari, **P. Shi**, J. Helm. Treatment Prioritization and Allocation for Substance Use Disorder.

[WP5]. A. Braverman, W. Gu, **P. Shi**. Stein's Method for High-dimensional Diffusion Approximation in Queueing Networks.

[WP6]. B. Li, K. Bretthauer, J. Helm, **P. Shi**, T. Tinsley‡. Nurse Staffing During a Pandemic: Prediction and Mitigation of In-Hospital Infections.

OTHER PUBLICATIONS

- H. Bastani, **P. Shi** (2020). "Proceed with Care: Integrating Predictive Analytics with Patient Decision-Making." Invited book chapter for *Modeling for Health: Making Changes*.
- J. G. Dai, **P. Shi** (2015). "Technical Note for Discrete-Time Diffusion Approximations Motivated from Hospital Inpatient Flow Management." *arXiv:1508.05148*
- **P. Shi***, J. G. Dai, D. Ding, J. Ang, M. Chou, X. Jin‡ and J. Sim‡ (2014). "Patient Flow from Emergency Department to Inpatient Wards: Empirical Observations from a Singaporean Hospital." http://dx.doi.org/10.2139/ssrn.2517050
  - This is a 69-page document on a comprehensive empirical study of inpatient flow management

COVID19 RESEARCH

- Developed a workload prediction and surge planning tool for 18 hospitals in IU Health for COVID19 response
  - Tools dispatched to five service regions of IU Health that serve more than 1 million Indiana residents
  - Findings are disseminated to Indiana Pandemic Information Collaborative, State Working Groups on COVID-19 response, Indiana Hospital Association
  - Received Purdue Alumni Gift Donation for ongoing COVID19 Research Development
  - News release:
    - https://www.purdue.edu/newsroom/releases/2020/Q2/krannert-and-kelley-business-schools-collaborating-to-help-iu-health-manage-surge-of-covid-19-patients.html
    - https://www.idsnews.com/article/2020/04/kelley-krannert-partner-to-predict-hospital-ventilator-demand-surges
    - https://team.myiuhealth.org/news/2020/06/scs-planning-for-a-potential-second-wave-kb
    - https://www.purdueexponent.org/city_state/article_323518b4-aa94-11ea-af87-336709c43d50.html
- News release on other works:
  - https://www.sciencedaily.com/releases/2020/08/200806153602.htm
  - https://www.forbes.com/sites/brucelee/2020/02/10/new-coronavirus-and-mobile-world-congress-withdrawals-should-you-avoid-mass-gatherings

GRANT PROPOSALS AND PROJECTS LEADING

- "Data-driven Workload Prediction and Resource Planning for COVID19 and Beyong: A Hybrid Approach of Machine Learning and Stochastic Modeling"
  - Led the Purdue/IUH workload prediction team on implementation and dispatching in spring 2020
  - Leading improvement efforts in supporting daily operations from October 2020
  - Pilot implementation started October 2021
  - Awarded with *2021 Ross-Lynn Postdoctoral Fellowship*

- "A Community Approach for Racial Justice: Decision Analytics using Optimization and Machine Learning"
  - Awarded with *2021 Engagement Scholarship Consortium Research/Creative Activities Grant*
  - Leading Purdue team to help Tippecanoe County Sheriff's Department and Community Corrections implement community intervention tools to reduce substance user recidivism
- "Deep-learning Enhanced Healthcare Modeling and Optimization"
  - Proposal in preparation to submit to NSF CMMI; Co-PI with Harsha Honnappa (Purdue University)
  - Preliminary proposal selected for the Lillian Gilbreth Postdoctoral Fellowship Program at Purdue Engineering
- "Outpatient Flow Optimization and Revisit Scheduling for Luohu Hopsital"
  - Built a team of three core faculty members and ten PhD/undergraduate students from scratch
  - Established collaboration with a large hospital in Shenzhen and obtained multiple unique datasets
  - Leading the team in collaboration with the hospital to implement a new scheduling system
- "High Fidelity Modeling and Two-Time-Scale Analysis for Hospital Inpatient Flow Management"
  - Jointly conceptualized and written with Professor Jim Dai
  - Funded by NSF CMMI-1335724, 2013-2017

INVITED SEMINARS

- "A New Era of Care Delivery: Machine Learning Enhanced Hospital Workload Prediction and Resource Allocation for COVID19 and Beyond"
  - 2021: University College London (virtual), Krannert Research Colloquium
- "Data Pooling for Personalized Health Intervention"
  - 2022: CUNY Baruch (scheduled), Boston University (scheduled)
  - 2022 (virtual seminar): McGill University
  - 2021 (virtual seminar): University of Macau, University of Toronto
- "Capacity Allocation to Improve Itinerary Completion in Healthcare Networks"
  - 2021 (virtual seminar): University of Chicago
  - 2020 (virtual seminar): University of Hong Kong, University of Chinese Academy of Sciences
  - 2020 (deferred due to COVID19): McGill University, University of Toronto
- "Tackling the Curse of Dimensionality: ADP in Patient Flow Management"
  - 2020: Purdue (Department of Statistics)
- "Timing it Right: Balancing Inpatient Congestion versus Readmission Risk at Discharge"
  - 2020 (deferred due to COVID19): North Carolina State, University of North Carolina
  - 2019: Georgia Institute of Technology, Johns Hopkins University
  - 2018: University of Hong Kong, Hong Kong University of Science and Technology, Indiana University-Bloomington, London Business School, CUHK-Shenzhen, Mini Workshop on Service and Healthcare Operations, Shenzhen
- "Inpatient Overflow Policies: An Approximate Dynamic Programming Approach"
  - 2018: Shanghai Jiao Tong University, CUHK-Shenzhen, University of British Columbia
- "Steady-state Approximation for Discrete Queue in Hospital Inpatient Flow Management"
  - 2016: Purdue University (INFORMS Student Chapter)
- "A Two-time-scale Approach to Time-varying Queues for Hospital Inpatient Flow Management"
  - 2014: Chinese University of Hong Kong, National University of Singapore
- "Data-driven Modeling and Decisions for Hospital Inpatient Flow Management"
  - 2013: University of Southern California, Yale School of Management,

University of Wisconsin Madison, Purdue (Krannert)

CONFERENCE PRESENTATIONS

- "Proximal Policy Optimization for Routing in Inpatient Overflow Management."
  - INFORMS 2021
- "Capacity Allocation to Improve Itinerary Completion in Healthcare Networks"
  - INFORMS 2020, POMS 2021, MSOM 2021, INFORMS Healthcare 2021
- "Impact of Overflow on Inpatient Flow: An Econometric Study"
  - POMS 2019, INFORMS 2020
- "Balancing Inpatient Congestion versus Readmission Risk at Discharge"
  - IAAA Finalist Presentation, INFORMS Analytics 2020
  - POMS CHOM Showcase Presentation, 2019
  - INFORMS 2017, 2018, 2020; MSOM 2018; MSOM SIG 2019; APS 2019; POMS 2019
- "A Queueing Framework for Adoption of New Diagnostic Tests into Clinical Workflow"
  - MSOM 2019; INFORMS 2019
- "Inpatient Overflow: An Approximate Dynamic Programming Approach"
  - MSOM 2018; INFORMS 2019, 2017, 2016; INFORMS APS Conference, 2017; POMS 2017
- "Steady-state Approximation for Discrete Queue in Hospital Inpatient Flow Management"
  - INFORMS APS Conference 2017; POMS 2016; INFORMS 2015
- "Overflow Policies for ED Patients Awaiting Inpatient Beds"
  - POMS 2015; INFORMS 2014, 2013
  - HealthOPT Workshop, Chicago, IL, September 2014
- "A Two-time-scale Approach to Time-varying Queues for Hospital Inpatient Flow Management"
  - POMS International, 2014; MSOM 2014; POMS 2014, 2013; INFORMS 2012
- "Inpatient Flow Management in a Singaporean Hospital"
  - Applied Probability Seminar, Georgia Institute of Technology, February 2012
- "The Impact of Mass Gatherings and Holiday Travelling on the Course of an Influenza Pandemic"
  - INFORMS 2010; SMDM 2010 (20% acceptance rate for oral presentation)
- "Modeling Seasonality and Viral Mutation in the Course of an Influenza Pandemic"
  - INFORMS 2009

TEACHING EXPERIENCE

- Instructor for undergraduate and MBA core courses at Krannert School of Management
  - MGMT 361 *Operations Management* (online), Fall 2020
    - Developed a fully-online version in Summer 2020
    - Revamped classes materials, recorded videos, and designed online exercises and games
  - MGMT 660 *Introduction to Operations Management* (MBA core), 2017-2021
    - Instructor rating in Spring and Fall 2019: 4.8, 4.9, 4.9 (out of 5.0)
    - Instructor rating in Spring 2018: 4.8, 5.0, 4.9 (out of 5.0)
  - MGMT 361 *Operations Management* (undergrad core), Spring/Fall 2014, Spring 2015-2017
    - Instructor rating in Spring 2017: 4.8 (out of 5.0)
  - MGMT 690 *Doctoral Topics OM*, Spring 2019, Fall 2014
- Teaching assistant for undergraduate courses at Georgia Tech
  - ISyE 3232 *Stochastic Manufacturing Systems*, Summer 2008
  - ISyE 4803 *Advanced Stochastic Systems*, Spring 2008 and Fall 2009

- Guest lecture for undergraduate and graduate courses at Georgia Tech
  - HS 6000 *Introduction to Healthcare Delivery*, April 2011
  - BME 1300 *Problems in Biomedical Engineering*, November 2009
  - ISYE 4803 *Humanitarian Applications of OR/MS*, September 2009

STUDENT MENTORING

- PhD Students
  - Zhongjie Ma, Purdue University, 2016-2018; thesis committee chair
    - Graduated in December 2018; initial placement: Facebook
  - Yiqiu Liu, Arizona University, March 2019-May 2020; primary advisor for paper [R4]
    - Graduated in May 2020; initial placement: SAC Automation
  - Qianli Xu, Purdue University, 2020-present; co-advisor for paper [WP1]
  - Xiaoquan Gao, Purdue University, 2020-present; co-advisor for paper [WP3]
  - Iman Attari, Indiana University, 2019-present; co-advisor for paper [WP4]
  - Xiuwen Wang, CUHK-Shenzhen, 2020-present, co-advisor for paper [R6]
  - Jiekun Feng, Cornell University, 2016-2017; primary advisor for paper [P3]
  - Jinsheng Chen, Columbia University, 2019-present; co-advisor for paper [R7], [P9]
- Undergraduate Students
  - Sabriya Alam and Parker Crain, Purdue University, 2019-2021; advisor for DURI project "Personalized Data Analytics to Combat Hospital Readmissions and Opioid Epidemics"
  - Zhiyao Xu and Asa Cutler, Purdue University, 2020; advisor for research project "Data Analytics for Inpatient Flow Management"
    - Second place, Purdue Undergraduate Research Conference (Krannert Track), 2020
  - Shikun Liu and Tianchun Li, Purdue University, 2020-2021; advisor for research project "Variational Auto-Encoding to Learn Doubly Stochastic Process"
  - Ben Wang and Shuwen Kan, Purdue University, 2020-2021; advisor for DURI project "Workload Prediction for COVID19 Response"
  - Tianchun Li, Indira Brown, Eric Wu, Clayton Helms, 2021-present; advisor for DURI project "Data Analytics for Hospital Operations and Opioid Epidemic"
  - Yihan Pan, Zhenghang Xu, Xuanming Zhang, Jinjin Sun, CUHK Shenzhen, 2019-2021; advisor for "Outpatient Flow Optimization and Revisit Scheduling for Luohu Hopsital"

AWARDS AND HONORS

- Selected into the first cohort of Societal Impact Fellows, Purdue University, 2021
- Engagement Scholarship Consortium Research/Creative Activities Grant Award, 2021
- Krannert Ross-Lynn Postdoctoral Fellowship Competition Award, 2021
- First place, MSOM Responsible Research in OM, INFORMS MSOM, 2021
- Received Purdue Alumni Gift Donation for COVID19 Research Development, 2020
- Second place, CHOM Best Paper Award, POMS, 2020
- Second place, Innovative Applications in Analytics Award, INFORMS Analytics Conference, 2020
- Second place, CHOM Best Paper Award, POMS, 2019
- First place, Pierskalla Best Paper Award, INFORMS HAS, 2018
- Krannert Young Faculty Scholar Award, Krannert School of Management, Purdue University, 2018
- Doug and Maria DeVos Faculty Support Award, Krannert, Purdue University, 2014
- PRF international travel grant, Purdue University, 2014 and 2016

- Master Outstanding and Distinguished Teachers, Krannert, Purdue University, 2017-2020
- Undergraduate Outstanding and Distinguished Teachers, Krannert, Purdue University, 2015-2017
- INFORMS Future Academician Doctoral Colloquium, Phoenix, AZ, 2012
- George Fellowship, Health System Institute, Georgia Tech, 2010-2011
- John Morris Fellowship, Department of Industrial and Systems Engineering, Georgia Tech, 2007-2009
- Chun-Tsung Scholar, sponsored by Nobel Laureate Tsung-Dao Lee, Peking University, 2005-2006
- Canon Grants for Elite Students, Peking University, 2005-2006
- China Economic Research Fellowship, Peking University, 2005-2006
- Dean's List for Excellent Study Grade, Peking University, 2003-2005

EDITORIAL EXPERIENCE

- Associate Editor:
  - *Operations Research (Stochastic Models Area): 2021 – present*
  - *Health Care Management Science: 2020 – present*
  - *Service Science: 2019 – present*
  - *Decision Sciences: 2020 – 2021*
- Editorial Board: *Health Care Management Science*
- Reviewer for *Management Science, Operations Research, Manufacturing & Service Operations Management, Production and Operations Management, Stochastic Systems, Service Science, IIE Transactions, Naval Research Logistics, Health Care Management Science, European Journal of Operational Research, Interfaces, Performance Evaluation, Flexible Services and Manufacturing*

SERVICE

- Conference Organizing Committee
  - INFORMS Healthcare Conference (2021)
  - POMS College of Healthcare Operations Management Mini Conference (2020-2022)
- Track Chair
  - INFORMS Annual Conference, Applied Probability track (2021)
  - POMS Annual Conference, Healthcare Operations Management track (2015, 2019)
  - INFORMS Annual Conference, MSOM/Healthcare SIG track (2016)
- MSOM 2022 Healthcare Special Interest Group Co-chairs
- Secretary for College of Healthcare Operations Management, POMS, 2019-present
- Councilor for Applied Probability Society at INFORMS, 2021-present
- Communications & Outreach Coordinator, Healthcare Application Society at INFORMS, 2021-present
- Councilor for Healthcare Application Society at INFORMS, 2014-2016
- Session Chair
  - HAS Flash Job Talk Session (2021)
  - INFORMS Annual Conference (2014, 2015, 2017-2020)
  - POMS Annual Conference (2014-2017, 2019-2020)
  - INFORMS APS Conference (2017, 2019)
  - INFORMS Healthcare Conference (2013)
- Competition Chair
  - INFORMS Pierskalla Best Paper Competition (2019)
- Judges
  - INFORMS Undergraduate Operations Research Prize (2020, 2021)

  - INFORMS Seth Bonder Scholarship (2020, 2021)
  - INFORMS Pierskalla Best Paper Competition (2016-2017, 2021)
  - MSOM Best Student Paper Competition (2016-2021)
  - INFORMS Healthcare Conference Best Student Paper Competition (2015, 2017, 2021)
  - POMS College of Healthcare Operations Management Best Paper Competition (2014-2016)
- Ad hoc reviewer, NSF CMMI panel, 2015
- Ad hoc reviewer, Canada New Frontiers in Research Fund, 2020
- Chair, Committee for Graduate Club, Krannert School of Management, September 2017 – 2018
- Online MBA Steering Committee, Krannert School of Management, 2018-2019
- Data/Analytics Research/Teaching Committee, Krannert School of Management, August 2018 – May 2020