Sarah M. Ryan
Professor and C. G. "Turk" and Joyce A. Therkildsen Department Chair
Industrial and Manufacturing Systems Engineering, Iowa State University
3004 Black Engineering Building, Ames, IA 50011-2030, smryan@iastate.edu, 515-294-4347

Educational Background

The University of Virginia, B.S. with High Distinction in Systems Engineering, 1983
The University of Michigan, M.S.E., Industrial and Operations Engineering, 1984
The University of Michigan, Ph.D., Industrial and Operations Engineering, 1988

Academic Positions

C. G. "Turk" and Joyce A. Therkildsen Department Chair, Industrial and Manufacturing Systems Engineering, Iowa State University, 2022 –present

Interim Chair, Industrial and Manufacturing Systems Engineering, Iowa State University, 2021 – 2022

Joseph Walkup Professor, Industrial and Manufacturing Systems Engineering, Iowa State University, 2016 – 2022

Professor, Industrial and Manufacturing Systems Engineering, Iowa State University, 2008 – present

Associate Department Chair, 2011 – 2014

Director of Graduate Education, 2008 – 2014

Visiting Associate Professor, Engineering Science, University of Auckland, New Zealand, 2008

Associate Professor, Industrial and Manufacturing Systems Engineering, Iowa State University, 1999 – 2008

Interim Department Chair, 2006 – 2007

Associate Chair of Research, 2002 – 2006

Assistant Professor, Industrial and Management Systems Engineering, University of Nebraska-Lincoln, 1995 – 1999

Assistant Professor, Industrial Engineering, University of Pittsburgh, 1988 – 1990

Other Professional Employment

Member of Management Engineering Services staff and Consultant, Eastman Chemical Company, forecasting of steam, electric power, and staffing needs, 1991 – 1993

Consultant, Homart Development Company, subsidiary of Sears Roebuck and Company, application of management science to shopping mall tenant mix, 1984 – 1987

Summer Intern, General Motors Research Laboratories, research in new product program investment strategies, 1986

Honors, Recognitions, and Outstanding Achievements

Wellington Award, Engineering Economy Division of Institute of Industrial & Systems Engineers, 2021

Elected to Sigma Xi, 2021

D. R. Boylan Eminent Faculty Award for Research, Iowa State University College of Engineering, 2017

Editor-in-Chief, *The Engineering Economist*, 2017 – 2020

A Best Paper on Integrated Power System Operations, IEEE Power & Energy Society General Meeting, 2014 (with Ph.D. student Yonghan Feng)

Fellow, Institute of Industrial and Systems Engineers, 2013

Best Paper in Engineering Economy Division, ASEE Annual Conference, June 2007 (with Jackman, Marathe, Antonenko, Kumsaikaew, Niederhauser, Ogilvie)

Finalist, IIE Innovation in Curriculum Competition, 2007 (with Jackman, Min and Olafsson)

AT&T Industrial Ecology Faculty Fellow, 2007

Miller Faculty Fellow, Iowa State University, 2006 – 07; 2007 – 08

Best Paper in Engineering Economics, Industrial Engineering Research Conference, May 2006 (with Ph.D. student Rahul Marathe)

Nominee for Iowa State University VEISHEA Excellence in Education Award, 2003

Invited Attendee to 3rd Annual *German-American Frontiers of Engineering* Symposium, sponsored by the National Academy of Engineering (one of 30 U.S. engineers), Bremen, Germany, 2000

Invited Attendee to 4th Annual *Frontiers of Engineering* Symposium, sponsored by the National Academy of Engineering (one of 83 engineers nationwide), 1998

Graduate Faculty Fellow, University of Nebraska-Lincoln, 1998

NSF/Faculty Early Career Development (CAREER) Award, 1997 – 2002

Accepted for Summer Faculty Research Program, Air Force Office of Scientific Research, 8 – 12 week fellowship (declined in favor of on-campus research sponsored by NSF)

College of Engineering and Technology Faculty Teaching Award, University of Nebraska-Lincoln, 1997.

Invited Participant in the University of Nebraska-Lincoln Peer Review of Teaching Project, 1996 – 1998.

Invited Participant in Operations Research Society of America Doctoral Colloquium, 1986.

Grants and Contracts

C. MacKenzie, B. Devine, M. Dorneich, M. Helwig, Q. Li, S. Ryan, Navy Engineering Analytics Program (NEAP): Providing Engineering Students with Navy Expertise, Office of Naval Research, Apr 2022 – Apr 2025, $521,593

Soumik Sarkar, 11 core team members, 28 other investigators including me, Center for Translational AI, ISU Presidential Interdisciplinary Research Initiative, Jun 2021 – May 2024, $750,000.

JP Tessonnier, E. Cochran, W. Li, L. Rolling, S. Ryan, EFRI DCheM: Chemicals from Renewables Through Green Electrochemistry (ChaRGE), National Science Foundation, Oct 2021 – Sep 2025, $2,000,000 (my share $328,689)

A. Somani, S. Ryan, C. Lawrence-Dill, B. Ganapathysubramanian, A. Sharma, MRI: Acquisition of a Shared High-Performance Computing System for Cyber-Enabled System Design, National Science Foundation, Oct 2020 – Sep 2023, $600,000

D. Davarnia and S. Ryan, A New Paradigm to Solve Unit Commitment and Optimal Power Flow Problems, Iowa Energy Center, Sep 2019 – Aug 2022, $272,226 (my share $90,742)

S. Ryan, R. Brown, A. Kaleita, S. Lence, M. Soupir, NRT-INFEWS: The DataFEWSion Traineeship Program for Innovations at the Nexus of Food Production, Renewable Energy and Water Quality, National Science Foundation, Sep 2018 – Aug 2023, $2,907,236 (my share $1,395,473)

S. Olafsson, G. Kremer, S. Ryan, S. Vardeman, Exploratory Research on Critical Factors, Potential Methods, Software and Usability-Utility Trade-off for Seed Variety Selection – Phase 3, Syngenta Seeds, Inc., Jul 2018 – Sep 2019, $150,000 (my share $22,500)

S. Olafsson, D. Nordman, S. Ryan, S. Vardeman, Exploratory Research on Critical Factors, Potential Methods, Software and Usability-Utility Trade-off for Seed Variety Selection – Phases 1 and 2, Syngenta Seeds, Inc., Apr 2017 – Jun 2018, $188,559 (my share $18,856)

S. Ryan and G. Gross (U. Illinois), Analysis of Power System Operational Uncertainty from Gas System Dependence, Power Systems Engineering Research Center, Aug 2016 – Jul 2018. $150,000 (my share $80,000)

S. Alleman and S. Ryan, Cyber-Poultry Integrated Food-Energy-Water-Systems Nexus, Iowa Energy Center, Feb – Apr 2016, $5,000 (my share $2,500)

G. Hu, S. Ryan, L. Wang, C. Krejci in collaboration with Proplanner (D. Sly), FactoryRight (A. Dugenske), Boeing Research and Technology (C. Hu, G. Burnett), Deere & Company (C. Sutton, M. Dunlap, R. Kadam) FactBoard: Real-Time Data-Driven Visual Support System for the Factory Floor, Digital Manufacturing and Design Innovation Institute, Mar 2016 – Feb 2018. $2,537,894 (ISU share of federal award $648,964, my share $162,241)

S. Ryan, Short-Term Planning of Integrated Gas and Electricity System Under Uncertainty, Sandia National Laboratories, Sep 2015 – May 2016. $73,100

S. Ryan, Improved Electricity Generation Unit Commitment and Dispatch Using Stochastic Optimization, Iowa Energy Center, Jan – Jul 2015. $50,000

S. Ryan, L. Tesfatsion, D. Aliprantis, D. L. Woodruff, R. J.-B. Wets, K. Cheung in collaboration with Sandia National Laboratories (R. Guttromson, J.-P. Watson) Improved Power System Operations using Advanced Stochastic Optimization, Department of Energy ARPA-E, Feb 2012 – Feb 2014. $3,000,000 (ISU share $843,788, my share $389,642)

S. Ryan, Closed Loop Supply Chain Design for Uncertain Carbon Regulations and Random Product Flows, National Science Foundation, Aug 2011 – Jul 2014. $250,001

V. Vittal (Arizona State), A. Bose (Washington State), S. Grijalva (Georgia Tech), G. Heydt (Arizona State), S. Oren (U. California-Berkeley), T. Overbye (U. Illinois), C. Singh (Texas A&M) and about 25 others, The Future Grid to Enable Sustainable Energy Systems: An Initiative of the Power Systems Engineering Research Centers, U.S. Department of Energy, Jan 2011 – Aug 2013. $5,512,900 (ISU share $560,000; my share $210,000)

S. Ryan, J. McCalley (ECpE), D. Woodruff (U. California-Davis), Computation Needs for the Next Generation Electric Grid, U. of California – Lawrence Berkeley National Laboratory, Sep 2010 – Jun 2011. $10,000

C. Ogilvie (Physics), H. Bender (Vet Path), J. Danielson (Vet Path), J. Jackman, D. Niederhauser (Curr & Instr), C. Cervato (Geo & Atm Sci), D. Russell (English), S. Ryan, Dissemination of ThinkSpace: an online delivery tool of authentic, complex problems to increase students' problem-solving skills, NSF, Sep 2010 – Aug 2012. $200,000

J. McCalley (ECpE), K. J. Min, S. Ryan, Generation Expansion Planning: Portfolio Optimization, Electric Power Research Center, Sep 2008 – Aug 2011. $100,000

C. Ogilvie (Physics), H. Bender (Vet Path), P. Boysen (IT Services), J. Danielson (Vet Path), J. Jackman (IMSE), B. Krumhardt (GDCB), D. Niederhauser (Curr & Instr), S. Ryan (IMSE), A. Schmidt (CELT), A. VanDerZanden (Hort), Dissemination of Online PSLP and Diagnostic Pathfinder to Increase Students' Problem-Solving Skills, ISU Computation Advisory Committee, May 2008 – Jun 2009. $65,651

J. McCalley (ECpE), S. Ryan, IREE Supplemental Funding Request for New Zealand, NSF, Sep 2007 – Aug 2008. $36,664

C. Ogilvie (Physics), S. Ryan, J. Jackman, D. Niederhauser (CTLT), B. Krumhardt (Biol), A. VanderZanden (Hort), Dissemination of Online Case Tool to Increase Students' Problem-Solving Skills, ISU Computation Advisory Committee, May 2007 – Jun 2008. $66,162

J. Jackman, D. Niederhauser (CTLT), C. Ogilvie (Physics), S. Ryan, Improving Student Problem Formulation Skills through Scaffolding, Provost Office Miller Faculty Fellowship, ISU, Jul 2007-Dec 2008. $35,000

S. Ryan, Value of Improved Product Condition Information to Product-Based Service Providers, AT&T Foundation, Jan – Dec 2007. $25,000

J. McCalley (ECpE), S. Ryan, V. Honavar(CS), W. Meeker(Stat), D. Qiao(ECpE) and R. Roberts(CNDE), Auto-Steered Information-Decision Processes for Electric System Asset Management, NSF, Jan 2006-Dec 2008. $700,000

J. McCalley (ECpE), S. Ryan, S. Sapp (Soc), and L. Tesfatsion (Econ), Decision Models for Bulk Energy Transportation Networks, NSF, Sep 2005 – Aug 2008. $608,000

S. Ryan, C. Ogilvie (Physics), J. Jackman and D. Niederhauser (CTLT), Assessing Problem Solving Skill Development in Science and Engineering, Provost Office Miller Faculty Fellowship, Jul 2006 – Jun 2007. $24,995

J. Min, S. Ryan, J. Jackman and P. Patterson, Citizen-Based Assessment and Improvement of E-Government Services for Small and Medium-Sized Communities in Midwestern States, Sloan Foundation, Jun 2005 – May 2006. $45,000

C. Ogilvie (Physics), S. Ryan and D. Niederhauser (CTLT), Online Environment for Multifaceted Problem-Solving Development, ISU Computation Advisory Committee May 2005 – Jun 2006. $62,073

S. Olafsson, S. Ryan, M. Huba (ELPS), J. Jackman and F. Peters, An Active Learning Environment for Information Technology Across the Curriculum, NSF, Jan – Dec 2003. $100,000

S. Ryan, D. Gemmill, D. Jacobson (ECpE), J. Min, S. Olafsson and A. Qamhiyah (ME), An Enabling System for Market-Driven Collaborative Product Design and Recycling, NSF, Aug 2000 – Jul 2002. $176,002

S. Ryan, Deterministic Approximations in Rolling Horizon Procedures under Forecast Uncertainty, NSF/Faculty Early Career Development (CAREER) Program, Jun 1997 – May, 2002. $206,000 with REU Supplement

Articles in Journals

Görkem Emirhüseyinoğlu and Sarah M. Ryan, "Farm management optimization under uncertainty with impacts on water quality and economic risk," *IISE Transactions* **54**(12): 1143-1160 (2022). DOI: 10.1080/24725854.2022.2031351 (featured in *ISE Magazine*, Nov 2022)

Ge Guo and Sarah M. Ryan, "Sequencing mixed-model assembly lines with risk-averse stochastic mixed-integer programming," *International Journal of Production Research* **60**(12): 3774-3791 (2022). DOI: 10.1080/00207543.2021.1931978.

Xiaoshi Guo and Sarah M. Ryan, "Portfolio rebalancing based on time series momentum and downside risk," *IMA Journal of Management Mathematics* (2021). DOI: 10.1093/imaman/dpab037

Xiaoshi Guo and Sarah M. Ryan, "Reliability assessment of scenarios generated for stock index returns incorporating momentum," *International Journal of Finance & Economics* **26**: 4013-4031 (2021). DOI: 10.1002/ijfe.2002.

Dan Hu and Sarah M. Ryan, “Quantifying the effect of uncertainty in the gas spot price on power system dispatch costs with estimated correlated uncertainties,” *Energy Systems* **11**: 859-884 (2020). DOI: 10.1007/s12667-019-00358-8.

Görkem Emirhuseyinoglu and Sarah M. Ryan, “Land use optimization for nutrient reduction under stochastic precipitation rates,” *Environmental Modelling and Software* 123 (2020). DOI: 10.1016/j.envsoft.2019.104527.

Didem Sarı and Sarah M. Ryan, “Observational data-based quality assessment of scenario generation for stochastic programs,” *Computational Management Science* 16(3), 521-540 (2019). DOI: 10.1007/s10287-019-00349-1.

Dan Hu and Sarah M. Ryan, “Stochastic vs. deterministic scheduling of a combined natural gas and power system with uncertain wind energy,” *International Journal of Electric Power and Energy Systems* 108, 303-313 (2019). DOI: 10.1016/j.ijepes.2018.12.047.

Narges Kazemzadeh, Sarah M. Ryan and Mahdi Hamzeei, “Robust Optimization vs. Stochastic Programming Incorporating Risk Measures for Unit Commitment with Uncertain Variable Renewable Generation,” *Energy Systems*, 10(3):517-541 (2019). DOI: 10.1007/s12667-017-0265-5.

A. Arif, S. Ma, Z. Wang, J. Wang, S. M. Ryan, and C. Chen, "Optimizing Service Restoration in Distribution Systems with Uncertain Repair Time and Demand," *IEEE Transactions on Power Systems*, 33(6), 6828-6838 (2018). DOI: 10.1109/tpwrs.2018.2855102.

SeyyedAli HaddadSisakht and Sarah M. Ryan, "Conditions Under Which Adjustability Lowers the Cost of a Robust Linear Program," *Annals of Operations Research*, 269(1-2), 185-204 (2018). DOI: 10.1007/s10479-018-2954-4.

Ali Haddadsisakht and Sarah M. Ryan, “Closed-Loop Supply Chain Network Design with Multiple Transportation Modes under Stochastic Demand and Uncertain Carbon Tax,” *International Journal of Production Economics* 195, 118-131 (2018). DOI: 10.1016/j.ijpe.2017.09.009.

Didem Sarı and Sarah M. Ryan, “Statistical Reliability of Wind Power Scenarios and Stochastic Unit Commitment Cost,” *Energy Systems* 9(4):873-898 (2018). DOI: 10.1007/s12667-017-0255-7.

Dinakar Gade, Gabriel Hackebeil, Sarah M. Ryan, Jean-Paul Watson, Roger J-B Wets, and David L. Woodruff, “Obtaining Lower Bounds from the Progressive Hedging Algorithm for Stochastic Mixed-Integer Programs,” *Mathematical Programming* 157(1), 47-57 (2016). DOI: 10.1007/s10107-016-1000-z.

Yonghan Feng and Sarah M. Ryan, “Day-Ahead Hourly Electricity Load Modeling by Functional Regression,” *Applied Energy*, 170, 455-465 (2016). DOI: 10.1016/j.apenergy.2016.02.118.

Esmaeil Keyvanshokooh, Sarah M. Ryan and Elnaz Kabir, “Hybrid Robust and Stochastic Optimization for Closed-Loop Supply Chain Network Design using Accelerated Benders Decomposition,” *European Journal of Operational Research* 249(1), 76-92 (2016). DOI: 10.1016/j.ejor.2015.08.028.

Didem Sarı, Youngrok Lee, Sarah M. Ryan and David L. Woodruff, “Statistical Metrics for Assessing the Quality of Wind Power Scenarios for Stochastic Unit Commitment,” *Wind Energy* 19(5), 873-893 (2016). DOI: 10.1002/we.1872

Yonghan Feng and Sarah M. Ryan. "Solution Sensitivity-based Scenario Reduction for Stochastic Unit Commitment." *Computational Management Science*, 13(1), 29-62 (2016). DOI: 10.1007/s10287-014-0220-z

Ge Guo, Gabriel Hackebiel, Sarah M. Ryan, Jean-Paul Watson, and David L. Woodruff, "Integration of Progressive Hedging and Dual Decomposition in Stochastic Integer Programs," *Operations Research Letters* 43(3), 311-316 (2015). DOI: 10.1016/j.orl.2015.03.008

Yonghan Feng, Ignacio Rios, Sarah Ryan, Kai Spurkel, Jean-Paul Watson, Roger Wets, and David Woodruff. "Toward Scalable Stochastic Unit Commitment – Part I: Load Scenario Generation," *Energy Systems* 6(3), 309-329 (2015). DOI: 10.1007/s12667-015-0146-8

Kwok Cheung, Dinakar Gade, Cesar Silva-Monroy, Sarah Ryan, Jean-Paul Watson, Roger Wets, and David Woodruff. "Toward Scalable Stochastic Unit Commitment – Part II: Assessing Solver Performance," *Energy Systems* 6(3), 417-438 (2015). DOI: 10.1007/s12667-015-0148-6

Shan Jin, Audun Botterud, and Sarah M. Ryan, "Temporal vs. Stochastic Granularity in Thermal Generation Capacity Planning with Wind Power," *IEEE Transactions on Power Systems* 29(5), 2033-2041 (2014). DOI: 10.1109/TPWRS.2014.2299760

Nan Gao and Sarah M. Ryan, "Robust Design of a Closed-Loop Supply Chain for Uncertain Carbon Regulations and Random Product Flows," *EURO Journal on Transportation and Logistics* 3(1), 5-34 (2014). DOI: 10.1007/s13676-014-0043-7

Xiang Wu and Sarah M. Ryan, "Joint Optimization of Asset and Inventory Management in a Product-Service System," *The Engineering Economist* 59(2), 91-115 (2014). DOI: 10.1080/0013791X.2013.873844. Featured in *Industrial Engineer* 46(9), September, 2014

Shan Jin and Sarah M. Ryan, "A Tri-Level Model of Centralized Transmission and Decentralized Generation Expansion Planning for an Electricity Market -- Part I," *IEEE Transactions on Power Systems* 29(1), 132-141 (2014). DOI: 10.1109/TPWRS.2013.2280085

Shan Jin and Sarah M. Ryan, "A Tri-Level Model of Centralized Transmission and Decentralized Generation Expansion Planning for an Electricity Market -- Part II," *IEEE Transactions on Power Systems* 29(1), 142-148 (2014). DOI: 10.1109/TPWRS.2013.2280082

Shan Jin, Audun Botterud, and Sarah M. Ryan, "Impact of Demand Response on Thermal Generation Investment with High Wind Penetration," *IEEE Transactions on Smart Grid* 4(4), 2374-2383 (2013). DOI: 10.1109/TSG.2013.2278882

Feng, Y. and S. M. Ryan, "Scenario Construction and Reduction Applied to Stochastic Power Generation Expansion Planning," *Computers & Operations Research* 40(1), 9-13 (2013). DOI: 10.1016/j.cor.2012.05.005

Jin, S., S. M. Ryan, J.-P. Watson and D. L. Woodruff, "Modeling and Solving a Large-Scale Generation Expansion Planning Problem under Uncertainty," *Energy Systems* 2(3&4), 209-242 (2011). DOI: 10.1007/s12667-011-0042-9

Wu, X. and S. M. Ryan, "Optimal Replacement in the Proportional Hazards Model with semi-Markovian Covariate Process and Continuous Monitoring," *IEEE Transactions on Reliability*, 60(3), 580-589 (2011). DOI: 10.1109/TR.2011.2161049

Jin, S. and S. M. Ryan, "Capacity Expansion in the Integrated Supply Network for an Electricity Market," *IEEE Transactions on Power Systems*, 26(4), 2275-2285 (2011). DOI: 10.1109/TPWRS.2011.2107531

P. D. Antonenko, C. A. Ogilvie, D. S. Niederhauser, J. Jackman, P. Kumsaikaew, R. R. Marathe, S. M. Ryan, "Understanding Student Pathways in Context-Rich Problems," *Education and Information Technologies*, 16(2), 323-342 (2011). DOI: 10.1007/s10639-010-9132-x

Ghosh, S. M. Ryan, L. Wang, A. Weerasinghe, "Heavy Traffic Analysis of a Simple Closed Loop Supply Chain," *Stochastic Models*, 26(4), 549 – 593 (2010).

Ryan, S.M., A. Downward, A. Philpott, G. Zakeri, “Welfare Effects of Expansions in Equilibrium Models of an Electricity Market with Fuel Network,” *IEEE Transactions on Power Systems* 25(3), 1337 – 1349 (2010).

Wu, X. and S. M. Ryan, “Value of Condition Monitoring for Optimal Replacement in the Proportional Hazards Model with Continuous Degradation,” *IIE Transactions* 42(8), 553-563 (2010). Featured in *Industrial Engineer* 42(7), July, 2010.

Wang, Y. and S. M. Ryan, “Effects of Uncertain Fuel Costs on Fossil Fuel and Electric Energy Flows in the US,” *Energy Systems*, 1, 209-243 (2010).

Marathe, R. R. and S. M. Ryan, “Capacity Expansion under a Service Level Constraint for Uncertain Demand with Lead Times,” *Naval Research Logistics*, 56(3), 250-263 (2009).

Quelhas, A., E. Gil, J. D. McCalley and S. M. Ryan, “A Multiperiod Generalized Network Flow Model of the U.S. Integrated Energy System, Part I – Model Description,” *IEEE Transactions on Power Systems*, 22(2), 829-836 (2007).

Serrato, M., S. M. Ryan and J. Gaytan, “A Markov Decision Model to Evaluate Outsourcing in Reverse Logistics,” *International Journal of Production Research* Special Issue on Sustainable Production, 45(18&19), 4289-4315 (2007).

McCalley, James D., Vasant G. Honavar, Sarah M. Ryan, William Q. Meeker, Ronald A. Roberts, Daji Qiao, Yuan Li, “Auto-steered Information-Decision Processes for Electric System Asset Management,” *Lecture Notes in Computer Science*, 3993, 440-447 (2006).

Vorasayan, J. and S. M. Ryan, “Optimal Price and Quantity of Refurbished Products,” *Production and Operations Management*, 15(3), 369-383 (2006).

Marathe, R. R. and S. M. Ryan, “On the Validity of the Geometric Brownian Motion Assumption,” *The Engineering Economist*, 50(2):159-192 (2005).

Ryan, S. M., and J. Vorasayan, “Allocating Work in Process in a Multiple-Product CONWIP System with Lost Sales,” *International Journal of Production Research*, 43(2):223-246 (2005).

Pak, D., N. Pornsalnuwat and S. M. Ryan, “The Effect of Technological Improvement on Capacity Expansion for Uncertain Exponential Demand with Lead Times,” *The Engineering Economist*, 49(2), pp. 95-118 (2004).

Ryan, S. M., J. Jackman, F. Peters, S. Olafsson, M. Huba, “The Engineering Learning Portal for Problem Solving,” *The Engineering Economist*, 49(1); pp.1-19 (2004).

Ryan, S. M., “Capacity Expansion for Random Exponential Demand Growth with Lead Times,” *Management Science*, 50(6) pp.740-748 (2004).

Simampo, A. and S. M. Ryan, “Capacity Expansion for a Loss System with Exponential Demand Growth,” *Computers and Operations Research*, 30, 1525-1537 (2003).

Ryan, S. and F. Choobineh, “Total WIP and WIP Mix for a CONWIP Controlled Job Shop,” *IIE Transactions on Scheduling and Logistics*, 35(5), 405-418 (2003).

Ryan, S. M., “Capacity Expansion with Lead Times and Correlated Random Demand,” *Naval Research Logistics*, 50(2), pp. 167-183 (2003).

Chan, E., J. Ohlmann, S. Dunbar, C. Dunbar, S. Ryan and P. Savory, “Operations Research Methods Applied to Workflow in a Medical Records Department,” *Health Care Management Science*, 5, 191-199 (2002).

Ryan, S. M., B. Baynat and F. F. Choobineh, "Determining Inventory Levels in a CONWIP Controlled Job Shop," *IIE Transactions*, 32(2), 105-114 (2000).

McAllister, C. D. and S. M. Ryan, "Relative Risk Characteristics of Rolling Horizon Hedging Heuristics for Capacity Expansion," *The Engineering Economist* 45(2), 115-128 (2000).

Ryan, S. M, "Forecast Frequency in Rolling Horizon Hedging Heuristics for Capacity Expansion," *European Journal of Operational Research*, 109(3), 550-558 (1998).

Ryan, S. M., "A Renewal Reward Approximation for the Variance of Electric Power Production Costs," *IIE Transactions*, 29(6), 435-440 (1997).

Ryan, S. M., J. Bean and R. L. Smith, "A Tie-Breaking Algorithm for Discrete Infinite Horizon Optimization," *Operations Research*, 40, S117-S126 (1992).

Ryan, S. M. and M. Mazumdar, "Chronological Influences on the Distribution of Power System Production Costs," *Operations Research*, 40, S284-S292 (1992).

Ryan, S. M. and M. Mazumdar, "Effect of Frequency and Duration of Generating Unit Outages on Distribution of System Production Costs," *IEEE Transactions on Power Systems*, 5, 191-197 (1990).

Ryan, S. M. and J. Bean, "Degeneracy in Infinite Horizon Optimization," *Mathematical Programming*, 43, 305-316 (1989).

Bean, J., C. Noon, S. M. Ryan and G. Salton, "Selecting Tenants in a Shopping Mall," *Interfaces*, 18(2), 1-9 (1988).

Book and Paper Reviews

Review of *Stochastic Models in Queueing Theory* (2nd ed.) by J. Medhi, *Journal of the American Statistical Association*, March 2005, pp. 350-351.

Edited Works

Ryan, Sarah, "What makes natural gas bottlenecks happen during extreme cold snaps," *The Conversation*, March 1, 2019. https://theconversation.com/what-makes-natural-gas-bottlenecks-happen-during-extreme-cold-snaps-112100

Chapters in Books

Min, K. J., C. MacKenzie, and S. M. Ryan, Life Cycle Costing with Application to Electric Energy Costing. B. Bidanda (Ed.), *Maynard Industrial Engineering Handbook*, 6th ed., McGraw Hill, forthcoming.

Ryan, S. M., Specifying and Validating Probabilistic Inputs for Prescriptive Models of Decision Making Over Time. A. Smith (Ed.), *Women in Industrial and Systems Engineering*, Springer, 2019.

Ryan, S. M. and Y. Wang, Costs and Constraints of Transporting and Storing Primary Energy for Electricity Generation. P. Pardalos, et al. (Eds.), *Handbook of Networks in Power Systems*, Vol II. Springer, 2012. ISBN 978-3-642-23405-7

Ryan, S., J. Jackman, P. Kumsaikaew, V. Dark and S. Olafsson, Use of Information in Collaborative Problem Solving. In D.H. Jonassen (Ed.), *Learning to Solve Complex, Scientific Problems*. Mahwah, NJ: Lawrence Erlbaum Associates. ISBN: 9780805859195, 187-204, 2007.

Jackman, J., S. Ryan, S. Olafsson, and V. Dark, Meta-problem Spaces and Problem Structure, in D.H. Jonassen (Ed.), *Learning to Solve Complex, Scientific Problems*. Mahwah, NJ: Lawrence Erlbaum Associates. ISBN: 9780805859195, 247-270, 2007.

Serrato, M., S. M. Ryan and J. Gaytan, Characterization of Reverse Logistics Networks for Outsourcing Decisions. In S. Parimi and M. Devi (Eds.), Reverse Logistics – Concepts and Cases. Hyderabad, India: ICFAI University Press. Chapter 9. ISBN: 81-7881-789-6, 2005.

Ryan, S. M., K. J. Min and S. Olafsson, Experimental Study of Scalability Enhancement for Reverse Logistics e-Commerce, *Scalable Enterprise Systems -- An Introduction to Recent Advances*, edited by V. Prabhu, S. Kumar and M. Kamath. Boston: Kluwer Academic Publishers. Chapter 9. ISBN 1-4020-7491-3, 2003.

Doctoral thesis title

Degeneracy in Discrete Infinite Horizon Optimization, advised by James C. Bean and Robert L. Smith.

Conference Proceedings

S. M. Ryan and G. Shah Abadi, “Reliability Assessment of Scenarios for CVaR Minimization in Two-Stage Stochastic Programs,” *Proceedings of the IISE Annual Conference & Expo 2022*, Seattle, WA, May 2022.

X. Guo and S. M. Ryan, “Scenario Generation for Asset Returns in a Cross-sectional Momentum Strategy,” *IISE Annual Conference*, online, May, 2021. Best Student Paper in Engineering Economy Track.

F. Amini, A. Rajabalizadeh, S. M. Ryan, F. Niayeshpour, “Modified Risk Parity Portfolios to Limit Concentration on Low Risk Assets in Multi-asset Portfolios," *2020 INFORMS Conference on Service Science (ICSS 2020)*, online, December, 2020.

S. M. Ryan, M. L. Soupir, A. Kaleita, S. H. Lence, R. Brown (2020). “NRT-INFEWS: The DataFEWSion Traineeship Program for Innovations at the Nexus of Food Production, Renewable Energy and Water Quality,” *ASEE's Virtual Conference: At Home with Engineering Education*, Virtual Online, June 2020. DOI: 10.18260/1-2--35002

E. Alameda-Basora and S. Ryan, “Application of Bayesian Network to Total Points in NBA Games,” *Institute of Industrial and Systems Engineers Annual Conference*, Orlando, FL, May 2019.

S. Ryan, J. Li, and N. Kazemzadeh, "Asymptotic Risk of Unit Commitment Schedule Due to Generating Unit Outages," in *IEEE International Conference on Probabilistic Methods Applied to Power Systems* (PMAPS), Boise, ID, June 2018. DOI: 10.1109/PMAPS.2018.8440452

D. Hu and S. M. Ryan, “Quantifying the Effect of Natural Gas Price Uncertainty on Economic Dispatch Cost Uncertainty,” *IEEE Power and Energy Society General Meeting*, Chicago, IL, July 2017. DOI: 10.1109/PESGM.2017.8274496

G. Guo and S. M. Ryan, “Risk-Averse Stochastic Integer Programs for Mixed-Model Assembly Line Sequencing Problems,” *Industrial and Systems Engineering Research Conference*, May 2017.

M. Zugg, G. Guo, M. Helwig, G. Hu, C. Krejci, M. Nikouei-Mehr, S. Ryan, D. Sly, L. Wang, “FactBoard: Real-Time Data-Driven Support System for the Factory Floor,” *Industrial and Systems Engineering Conference*, May 2017.

Y. Feng and S. M. Ryan, “Scenario Reduction for Stochastic Unit Commitment with Wind Penetration,” *IEEE Power and Energy Society General Meeting*, July 2014. Selected for presentation in a Best Paper session. DOI: 10.1109/PESGM.2014.6939138

Y. Feng, D. Gade, S. M. Ryan, J-P Watson, R. J-B Wets, and D. L. Woodruff, “A New Approximation Method for Generating Day-Ahead Load Scenarios,” *IEEE Power and Energy Society General Meeting*, July 2013. DOI: 10.1109/PESMG.2013.6672564

S. M. Ryan, R. J-B Wets, D. L. Woodruff, C. Silva-Monroy, and J-P Watson, “Toward Scalable, Parallel Progressive Hedging for Stochastic Unit Commitment,” *IEEE Power and Energy Society General Meeting*, July 2013. DOI: 10.1109/PESMG.2013.6673013

Y. Feng and S. M. Ryan, “Application of Scenario Reduction to LDC and Risk-based Generation Expansion Planning,” *Proceedings of IEEE Power Engineering Society General Meeting*, San Diego, July 2012. DOI: 10.1109/PESGM.2012.6345655

N. Gao and S. Ryan, “Closed–Loop Supply Chain Network Design Under Carbon Emission Regulations,” *Proceedings of Industrial Engineering Research Conference*, Reno, Nevada, May 2011.

Ryan, S., “Demand Price Sensitivity and Market Power in a Congested Fuel and Electricity Network,” *Proceedings of the IEEE Power Engineering Society General Meeting*, Minneapolis, July 2010.

Ryan, S., “Market Outcomes in a Congested Electricity System with Fuel Supply Network,” *Proceedings of the IEEE Power Engineering Society General Meeting*, Calgary, July 2009.

Wang, Y. and S. M. Ryan, “Comparison of Efficient Methods for Solving a Large-Scale Multistage Stochastic Program,” *Proceedings of the Industrial Engineering Research Conference*, Miami, May 2009.

Jin, S. and S. M. Ryan, “Power Generation Expansion Planning Under Uncertainties,” *Proceedings of the Industrial Engineering Research Conference*, Miami, May 2009.

Ryan, S., B. Padakala and X. Wu, “Closing the Loop on Product-Based Services with Condition Monitoring,” *Proceedings of the International Conference on Service Systems and Service Management*, Melbourne, Australia, July 2008.

Li, Y., J. D. McCalley and S. Ryan, “Risk-based Unit Commitment,” *Proceedings of the IEEE Power Engineering Society General Meeting*, 24-28 June 2007.

Ye, M., S. Ryan and J. McCalley, Transmission Expansion Planning with Transformer Replacement, *Proceedings of the 2007 Industrial Engineering Research Conference*, Nashville, May 2007.

Niederhauser, D., Antonenko, P., Ryan, S., Jackman, J., Ogilvie, C., Marathe, R., & Kumsaikaew, P., “Solution Strategies of More and Less Successful Problem Solvers in an Online Problem-based Learning Environment,” *Proceedings of the Annual Meeting of the American Educational Research Association*, Chicago, IL, April 2007

Ryan, S., Jackman, J., Marathe, R., Antonenko, P., Kumsaikaew, P., Niederhauser, Ogilvie, C., Student Selection of Information Relevant to Solving Ill-Structured Engineering Economic Decision Problems, *Proceedings of the 2007 American Society for Engineering Education Annual Conference*, Honolulu, June 24-27, 2007.

Chittamvanich, S. and S. M. Ryan, “Adjusting Remanufacturing Capacity Using Sales and Return Information,” *Proceedings of the Industrial Engineering Research Conference*, Orlando, May 2006.

Marathe, R. and S. M. Ryan, “Optimal Solution to a Capacity Expansion Problem,” *Proceedings of the Industrial Engineering Research Conference*, Orlando, May 2006.

Marathe, R. and S. M. Ryan, “Capacity Expansion for Uncertain Demand with Initital Shortages,” *Proceedings of the Industrial Engineering Research Conference*, Atlanta, May 2005.

Olafsson, S., V. Dark, M. Huba, J. Jackman, F. Peters, S. Ryan, K. Saunders, “Implementation and Assessment of Industrial Engineering Curriculum Reform,” *Proceedings of the ASEE Annual Conference*, Salt Lake City, June 2004.

Peters, F., J. Jackman, S. Olafsson, S. Ryan and K. Saunders “Integrated Curriculum to Improve Engineering Problem Solving,” *Proceedings of the Industrial Engineering Research Conference*, Houston, May 2004.

Marathe, R. and S. Ryan, “On the Validity of the Geometric Brownian Motion Assumption,” *Proceedings of the Industrial Engineering Research Conference*, Houston, May 2004 (extended abstract).

Serrato, M. and S. Ryan, “A Markov Decision Model to Evaluate Outsourcing in Reverse Logistics,” *Proceedings of the Industrial Engineering Research Conference*, Houston, May 2004 (extended abstract)

Jackman, J., K. J. Min, S. Olafsson, and S. Ryan, “Internet-Based Public Policy Participation for Rural Community Citizens,” *Proceedings of the National Conference on Digital Government Research*, page 450, Seattle, Washington, May 2004.

Olafsson, S., M. Huba, J. Jackman, F. Peters, and S. M. Ryan, “Information Technology Based Active Learning: A Pilot Study for Engineering Economy,” *Proceedings of the ASEE Annual Conference and Exposition*, Nashville, TN, 2003.

Jackman, J., S. Olafsson, F. Peters, S. Ryan and M. Huba, “The Electronic Learning Portal: An Active Learning Environment for Information Technology Across the Curriculum,” *Proceedings of the 2003 Industrial Engineering Research Conference*, Portland, OR, May, 2003.

Kim, H. and S. M. Ryan, “Analysis of Delayed Product Differentiation under a CONWIP Policy,” *Proceedings of the 2003 Industrial Engineering Research Conference*, Portland, OR, May, 2003.

Kim, H. and S. M. Ryan (2002). “A New Analytical Evaluation Model for Kanban Controlled Systems with Fork/Join Synchronization Stations,” *Proceedings of the 2002 Industrial Engineering Research Conference*, Orlando, May 19-21, 2002.

Ryan, S. M., K. J. Min and S. Olafsson (2002). "Experimental Study of Reverse Logistics E-Commerce," *Proceedings of the 10th IEEE International Symposium on Electronics and the Environment*, pp. 218-223, San Francisco, May 2002.

Pak, D. and S. M. Ryan (2001). “Option Pricing Methods for Estimating Capacity Shortages,” *Proceedings of the 2001 Industrial Engineering Research Conference*, Dallas, May 2001.

Gemmill, D., A. Qamhiyah and S. M. Ryan (2001). “Electronic Manufacturers’ Support for Product Recycling,” *Proceedings of the 2001 Industrial Engineering Research Conference*, Dallas, May 2001.

Ryan, S. M. (1999). “The Effect of Forecast Revisions on Capacity Expansion Cost,” *Proceedings of the 8th Annual Industrial Engineering Research Conference*, Phoenix, 1999.

Ryan, S. M. (1998). “Lead Times in Capacity Expansion with Uncertain Demand,” *Proceedings of the 7th Annual Industrial Engineering Research Conference*, Banff, 1998.

Non-Refereed Proceedings Papers

Ryan, S. M. and J. D. McCalley (2009). “Decision Models for Bulk Energy Transportation Networks,” *Second Proceedings of International Research in Engineering and Education Grantees.*

Ryan, S. M. (2002). “Planning for and Responding to Changing Demand,” *Proceedings of the 2002 NSF Design, Service & Manufacturing Grantees and Research Conference*, San Juan.

Ryan, S. M., D. Gemmill, D. Jacobson, J. Min, S. Olafsson, A. Qamhiyah (2002). “Scalable and Secure E-Commerce for Reverse Logistics,” *Proceedings of the 2002 NSF Design, Service & Manufacturing Grantees and Research Conference*, San Juan.

Ryan, S. M. (2001). “Capacity Expansion with Lead Times and Uncertain Demand,” *Proceedings of the 2001 NSF Design, Service & Manufacturing Grantees and Research Conference*, Tampa.

Ryan, S. M. (2000) “Option Values and the Choice of a Capacity Expansion Policy,” *Proceedings of the 2000 Manufacturing & Service Operations Management Conference*, Ann Arbor.

Ryan, S. M. (2000) “CONWIP Control for Multiproduct Systems,” *Proceedings of the 2000 NSF Design & Manufacturing Research Conferenc*e, Seattle.

Ryan, S. M. (1999). “Deterministic Approximations in Rolling Horizon Procedures under Forecast Uncertainty,” *Proceedings of the 1999 NSF Design & Manufacturing Grantees Conference*, Long Beach.

Brand, J. I., S. M. Ryan and M. S. Hallbeck (1998). “Multi-disciplinary Meta-analysis for Assessment of Relationships between Asthma Rates and Particulate Air,” Presented at the 1998 American Institute of Chemical Engineers Annual Meeting.

Ryan, S. M. and M. Mazumdar (1990). “Model Validation and Variance of Production Costs,” Presented at the Electric Power Research Conference on Applications of Power Production Simulation.

Reports

Ryan, S. M., G. Gross, G. Hu and A. Lima Abrantes. Analysis of Power System Operational Risks from Gas System Dependence. Power Systems Engineering Research Center Report M-36, September, 2018. https://pserc.wisc.edu/publications/reports/2018_reports/M-36_Final_Report.pdf

Grijalva, S., S. Meliopoulos, S. M. Ryan, A. Dominguez-Garcia, P. W. Sauer. Computational Challenges and Analysis Under Increasingly Dynamic and Uncertain Electric Power System Conditions. Power Systems Engineering Research Center Future Grid Initiative, May, 2012. https://pserc.wisc.edu/documents/publications/papers/fgwhitepapers/Grijalva_PSERC_Future_Grid_TA5_May_2012.pdf

Invited Lectures

“Investments to Reduce Power System Risk from Gas System Dependence,” Mathematics of Energy Systems Workshop on Electricity Systems of the Future: Incentives, Regulation and Analysis for Efficient Investment, Isaac Newton Institute for Mathematical Sciences, University of Cambridge, UK, March 2019

“Analysis of Power System Operational Uncertainty from Gas System Dependence,” simultaneous webinar for the Power Systems Engineering Research Center and seminar in the Electrical & Computer Engineering Department, Iowa State University, October 2018

“Scenario Decomposition of Stochastic Integer Programs for Unit Commitment,” seminar for Integrated Systems Engineering Department, The Ohio State University, January 2015

“Capacity Expansion in the Integrated Fuel and Electricity Supply Chain,” seminar for Department of Industrial and Systems Engineering, Texas A&M University, November 2010

“Effects of Cost Forecast Bias in a Stochastic Programming Model of Bulk Energy Flows in the U.S.,” seminar for Department of Engineering Science and Special Colloquia on the Optimization and Planning of Electricity Series, University of Auckland, April 2008

“Modeling, Analysis and Optimization in Closed Loop Supply Chains,” seminar for University of Iowa Mechanical & Industrial Engineering Department, February 2006

“Capacity Expansion for Uncertain Demand with Lead Times,” seminar for University of Iowa Department of Management Sciences, April 2004

“Capacity Expansion for Uncertain Demand with Lead Times,” invited seminars at:
Instituto Tecnológico y de Estudios Superiores de Monterrey, Toluca, Mexico, Industrial Engineering Ph.D. Seminar Series, June 2002.

Auburn Univ. Industrial & Systems Eng. Dept. Seminar Series, March 2002.

“Experimental Study of Reverse Logistics E-Commerce,” invited seminars at:

Instituto Tecnológico y de Estudios Superiores de Monterrey, Toluca, Mexico, June 2002

Econometric Institute, Erasmus University Rotterdam, The Netherlands, June 2002

“CONWIP for Multiproduct Systems,” invited seminar at Instituto Tecnológico y de Estudios Superiores de Monterrey, Toluca, Mexico, June 2002

Invited Conference Presentations

S. Ryan, Partnership with our Graduate College to Build Science Communication Skills, 2021 National Science Foundation Research Traineeship (NRT) Annual Meeting: Shaping 21st Century STEM Graduate Education, online, January 2021

S. Ryan, The External Evaluator is Here to Help, 2021 National Science Foundation Research Traineeship (NRT) Annual Meeting: Shaping 21st Century STEM Graduate Education, online, January 2021

S. Ryan, G. Emirhuseyinoglu, Land Use Optimization for Nutrient Reduction under Stochastic Precipitation Rates, 2019 China-US Joint Eco-environmental Symposium on Research and Innovation at the Nexus of Food, Energy and Water, Seattle, WA, October 2019

D. Hu, S. Ryan, Co-Optimized vs. Separately Optimized Natural Gas and Power Systems Considering Gas Priorities, INFORMS Annual Meeting, October, 2019 (presented by D. Hu)

G. Guo, S. Ryan, Obtaining Lower Bounds for Multi-Stage Risk-averse Stochastic Mixed-Integer Programs, INFORMS Annual Meeting, October, 2017 (presented by G. Guo)

D. Hu, S. Ryan, Quantifying the Effect of Natural Gas Price Uncertainty on Economic Dispatch Cost Uncertainty, INFORMS Annual Meeting, October, 2017 (presented by D. Hu)

D. Sarı, S. Ryan, Reliability of Wind Power Scenarios and Stochastic Unit Commitment Cost, INFORMS Annual Meeting, November, 2015 (presented by D. Sarı)

J-P Watson, S. Ryan, D. Woodruff, Scalable Lower and Upper Bounding Techniques for Stochastic Unit Commitment with Progressive Hedging, INFORMS Annual Meeting, November, 2015 (presented by J-P Watson)

D. Hu, S. Ryan, Combined Natural Gas and Electric System Operation with Wind Energy, INFORMS Annual Meeting, November, 2015 (presented by D. Hu)

S. Jin, A. Botterud, S. Ryan, Temporal vs. Stochastic Granularity in Thermal Generation Capacity Planning with Wind Power, IEEE Power & Energy Society General Meeting, July, 2015 (presented by A. Botterud)

D. Sarı, S. Ryan, Statistical Metrics of Wind Power Scenarios and Unit Commitment Results, IIE Industrial & Systems Engineering Research Conference, May, 2015 (presented by D. Sarı)

S. Ryan, D. Sarı, Statistical Metrics for Assessing Quality of Scenarios for Unit Commitment and Dispatch, SIAM Conference on Computational Science and Engineering (CSE15), March, 2015

A. Haddad, S. Ryan, Adjusting Closed Loop Transportation Capacities to Uncertain Carbon Tax with Stochastic Demands, INFORMS Annual Meeting, November, 2014 (presented by A. Haddad)

G. Guo, S. Ryan, Integration of Progressive Hedging and Dual Decomposition for Stochastic Integer Programs, INFORMS Annual Meeting, November, 2014 (presented by G. Guo)

N. Kazemzadeh, S. Ryan, Robust Optimization or Stochastic Programming for Unit Commitment? INFORMS Annual Meeting, November, 2014

Y. Feng, S. Ryan, Solution Sensitivity Based Scenario Reduction for Stochastic Unit Commitment, INFORMS Annual Meeting, November, 2014

S. Ryan, Y. Feng, C. Silva-Monroy, J-P Watson, D. Woodruff, Scenario Reduction for Scalable Stochastic Unit Commitment, Federal Energy Regulatory Commission Staff Technical Conference on Increasing Real-Time and Day-Ahead Market Efficiency through Improved Software, June, 2014

J-P Watson, S. Ryan, D. Woodruff, New Lower Bounding Results for Scenario-Based Decomposition Algorithms for Stochastic Mixed-Integer programs, SIAM Conference on Optimization, May, 2014 (presented by J-P Watson)

J-P Watson, S. Ryan, D. Woodruff, A New Mixed-Integer Lower Bound for Progressive Hedging, INFORMS Optimization Society Conference, March, 2014 (presented by J-P Watson)

J-P Watson, S. Ryan, D. Woodruff, Stochastic Unit Commitment: Scalable Computation and Experimental Results, INFORMS Annual Meeting, October, 2013 (presented by J-P Watson)

S. Ryan, S. Gade, A New Lower Bound from Progressive Hedging, INFORMS Annual Meeting, October, 2013

D. Woodruff, S. Ryan, J-P Watson, Stochastic Unit Commitment: Stochastic Process Modeling for Load and Renewables, Federal Energy Regulatory Commission Staff Technical Conference on Increasing Real-Time and Day-Ahead Market Efficiency through Improved Software, June, 2013

J-P Watson, S. Ryan, D. Woodruff, Stochastic Unit Commitment: Scalable Computation and Experimental Results, Federal Energy Regulatory Commission Staff Technical Conference on Increasing Real-Time and Day-Ahead Market Efficiency through Improved Software, June, 2013 (presented by J-P Watson)

D. Gade, S. Ryan, J-P Watson, D. Woodruff, A New Lower Bound from Progressive Hedging, International Conference on Stochastic Programming, July, 2013

S. Jin, A. Botterud, S. Ryan, Impact of Demand Response on Thermal Generation Investment with High Wind Penetration, ISERC, May, 2013

D. Gade, S. Ryan, Y. Feng, Error Density Estimation and Decomposition for Stochastic Unit Commitment, ISERC, May, 2013 (presented by D. Gade)

Y. Feng, S. Ryan, D. Gade, An Optimization Approach to Modeling Day-Ahead Electricity Demand, ISERC, May, 2013 (presented by Y. Feng)

Stochastic Unit Commitment for the Day-Ahead Market and Resource Adequacy Assessments, ECI Conference on Modeling, Simulation and Optimization for the 21st Century Electric Power Grid, Lake Geneva, WI, Oct 2012

Stochastic Generation Expansion Planning, ECI Conference on Modeling, Simulation and Optimization for the 21st Century Electric Power Grid, Lake Geneva, WI, Oct 2012 (presented by D. Woodruff)

Scenario Generation and Reduction Applied to Long-term Power Generation Expansion Planning with Risk, INFORMS Annual Meeting, Phoenix, Oct 2012 (presented by Y. Feng)

A Tri-Level Transmission and Generation Expansion Planning Model for a Deregulated Market, INFORMS Annual Meeting, Phoenix, Oct 2012 (presented by S. Jin)

Panelist on “Computational Challenges,” PSERC Future Grid Forum on Technological Challenges in Designing the Future Grid, June, 2012

Robust Design of a CLSC Network for Uncertain Carbon Regulations and Random Product Flows, INFORMS Annual Meeting, Charlotte, NC, Nov 2011 (presented by N. Gao)

Generation Expansion Planning with Wind Energy and Demand Response, INFORMS Annual Meeting, Charlotte, NC, Nov 2011 (presented by S. Jin)

Carbon Regulation Effects on Expanding an Integrated Electricity Supply Network, Industrial Engineering Research Conference, Reno, Nevada, May 2011 (presented by S. Jin)

A Branch-and Bound Algorithm for the Bilevel Mixed Integer Linear Programming Problem, INFORMS Annual Meeting, Austin, Nov, 2010 (presented by P. Xu)

“Capacity Expansion in the Integrated Supply Network for an Electricity Market,” INFORMS Annual Meeting, Austin, Nov, 2010 (presented by S. Jin)

Scenario Reduction Methods for rolling Stochastic Energy Planning Programs, INFORMS Annual Meeting, Austin, Nov, 2010 (presented by Y. Wang)

Infrastructure Improvements and Total Welfare in an Electricity Market with Fuel Network, INFORMS Annual Meeting, San Diego, CA, Oct 2009

Value of Monitoring for Replacement under Proportional Hazards with Continuous-time Degradation, INFORMS Annual Meeting, San Diego, CA, Oct 2009 (presented by X. Wu)

Data-Driven Maintenance of the Electricity Transmission System, INFORMS Annual Meeting, San Diego, CA, Oct 2009

Stochastic Programming Models for Multi-period Energy Planning with Emphasis on First-Stage Decision, INFORMS Annual Meeting, San Diego, CA, October 2009 (presented by Y. Wang)

Optimal Prices and Production Rate in a Closed Loop Supply Chain under Heavy Traffic, INFORMS Annual Meeting, Washington, DC, Oct 2008

Efficient Methods for Solving a Large-Scale Multistage Stochastic Program, INFORMS Annual Meeting, Seattle, Nov 2007 (presented by Y. Wang)

Effects of Market-Based Uncertainty on Optimal Flows of Fuels and Power in the U.S., INFORMS Annual Meeting, Pittsburgh, Nov 2006 (presented by Y. Wang)

Adjusting Remanufacturing Capacity Using Sales and Return Information, INFORMS Annual Meeting, Pittsburgh, Nov 2006 (presented by S. Chittamvanich)

A Markov Decision Model to Evaluate Reverse Logistics Outsourcing, 21st European Conference on Operational Research, Reykjavik, July 2006

A General Queuing Network Model to Optimize Refurbishing Policies for Returned Products, Annual Conference of the Production and Operations Management Society, Boston, Apr 2006 (presented by J. Vorasayan)

Optimal Price and Quantity of Refurbished Products, INFORMS Annual Meeting, San Francisco, Nov 2005 with Jumpol Vorasayan

Using Forecast Information From Early Returns of Used Products to Set Remanufacturing Capacity, presented at INFORMS National Meeting, Denver, CO, Oct 2004

Technological Improvement in Capacity Expansion for Uncertain Exponential Demand with Lead Times, Industrial Engineering Research Conference, Portland, Oregon, May 2003 (extended abstract published in proceedings)

Panelist on “Creative Solutions to Balancing Work and Family,” INFORMS National Meeting, San Jose, Nov 2002

Allocating Work in Process in a Multiple Product CONWIP System with Lost Sales, INFORMS National Meeting, San Jose, Nov 2002

Analysis of Delayed Product Differentiation with Pull Control, INFORMS National Meeting, San Jose, Nov 2002

Experimental Study of Reverse Logistics E-Commerce, 10th European Conference on Information Systems, Gdansk, Poland, Jun 2002.

Lead Times in Capacity Expansion with Nonstationary Uncertain Demand, INFORMS Fall National Meeting, Oct 1998.

A Flexible CONWIP Control Strategy for a Job Shop, INFORMS Fall National Meeting, Oct 1997.

Renewal Reward Approximation for the Variance of Electric Power Production Costs, INFORMS Fall National Meeting, Nov 1996.

Other Conference Presentations

G. Emirhuseyinoglu, S. Ryan, Water Quality Impacts of Optimal Crop Insurance Policy Selection, INFORMS Annual Meeting, October 2021 (presented by G. Emirhuseyinoglu)

G. Emirhuseyinoglu, S. Ryan, Farm Management Optimization to Reduce Nutrient Runoff Under Uncertainty, INFORMS Annual Meeting, November 2020 (presented by G. Emirhuseyinoglu)

X. Guo, S. Ryan, A Time Series Momentum Hybrid that Controls Downside Risk, INFORMS Annual Meeting, November 2020 (presented by X. Guo)

X. Guo, S. Ryan, Statistical Assessment of Momentum-based Scenarios for Stock Index Returns and Levels, INFORMS Annual Meeting, October 2019 (presented by X. Guo)

G. Emirhuseyinoglu, S. Ryan, Land Use Optimization for Nutrient Reduction under Stochastic Precipitation Rates, INFORMS Annual Meeting, October 2019 (presented by G. Emirhuseyinoglu)

G. Guo, S. Ryan, Multi-stage Risk-averse Stochastic Mixed-integer Programming for Mixed-model Assembly Line Sequencing, INFORMS Annual Meeting, November 2018 (presented by G. Guo)

N. Kazemzadeh, S. Ryan, A Computationally Efficient Branch-and-Cut Method for Robust Unit Commitment, INFORMS Annual Meeting, November, 2016 (presented by N. Kazemzadeh)

D. Sarı, S. Ryan, Scenario Generation Assessment for Stochastic Programs, INFORMS Annual Meeting, November, 2016 (presented by D. Sarı)

A. Haddad, S. Ryan, Conditions Under Which Adjustability Lowers the Cost of a Robust Linear Program, INFORMS Annual Meeting, November, 2016 (presented by A. Haddad)

N. Kazemzadeh, S. Ryan, Robust Optimization vs. Stochastic Programming for Electricity Generating Unit Commitment, INFORMS Annual Meeting, November, 2015 (presented by N. Kazemzadeh)

E. Keyvanshokooh, E. Kabir, S. Ryan, Hybrid Robust-Stochastic Optimization Approach for Closed-loop Supply Chain Network Design, INFORMS Annual Meeting, November, 2015 (presented by E. Keyvanshokooh)

A. Haddad, S. Ryan, Closed-loop Supply Chain Design for Uncertain Carbon Tax Rates and Stochastic Demands, INFORMS Annual Meeting, October, 2013 (presented by A. Haddad)

Y. Feng, S. Ryan, Scenario Generation and Reduction for Stochastic Unit Commitment with Wind Energy Penetration, INFORMS Annual Meeting, October, 2013 (presented by Y. Feng)

S. Jin, A. Botterud, S. Ryan, Generation Expansion Planning with Wind Power Uncertainties, ISERC, May, 2013

A. Haddad, S. Ryan, Robust Design of a Closed-loop Supply Chain Under Carbon Regulation Uncertainty, ISERC, May, 2013 (presented by A. Haddad)

Meeting a Capacity Service Level Constraint for Uncertain Demand with Lead Times, INFORMS Annual Meeting, Pittsburgh, November 2006 (presented by R. Marathe)

A Markov Decision Model to Evaluate Reverse Logistics Outsourcing, 21st European Conference on Operational Research, Reykjavik, July 2006 (presented in an invited session)

Optimal Timing and Size Parameters for a Capacity Expansion Problem, INFORMS Annual Meeting, San Francisco, November 2005, with Rahul Marathe.

A General Queuing Network Model to Optimize Refurbishing Policies for Returned Products, INFORMS Annual Meeting, San Francisco, November 2005, (interactive session) with Jumpol Vorasayan.

Outsourcing Analysis for Reverse Logistics Systems, Industrial Engineering Research Conference, Atlanta, May 2005 with Marco Serrato.

Allocating Work in Process in a Multiple Product CONWIP System with Lost Sales, INFORMS National Meeting, San Jose, November 2002 (invited session)

Experimental Study of Reverse Logistics E-Commerce, IEEE International Symposium on Electronics and the Environment, San Francisco, May 2002.

Capacity Expansion under Technological Change, 2001 Operations Research and Management Sciences International Conference, Maui, Hawaii, June 2001.

A Scalable and Secure E-Commerce Hub for Electronics Recycling, Electronic Product Recovery and Recycling Conference, Arlington, Virginia, April 2001.

Capacity Expansion for a Loss System, INFORMS Fall National Meeting, San Antonio, Texas, November 2000.

A Nonstationary Capacity Expansion Policy for Nonstationary Demand (presented by Dohyun Pak), INFORMS/KORMS Conference, Seoul, Korea, June 18-21, 2000.

Capacity Expansion Using Option Pricing, Industrial Engineering Research Conference, Cleveland, Ohio, May 20-22, 2000.

Buying Friends or Sleeping with Enemies: Institutional Checks and the Cost of Agreement (presented by Will Heller), 2000 Annual Meeting of the Midwest Political Science Association, Chicago, April 26-29, 2000.

A CONWIP Control Policy for a Job Shop, 6th Industrial Engineering Research Conference, May 1997.

Rolling Horizon Procedures for Capacity Expansion with ARIMA Demand, IFORS 14th Triennial Conference, July 1996.

Rolling Horizon Procedures for Capacity Expansion with SARIMA Demand Models, INFORMS Fall National Meeting, October 1995.

The Variance of Electric Power Production Costs, SIAM Conference on Applied Probability, March 1990.

Chronological Influences on the Variance of Power System Production Costs, ORSA/TIMS Fall National Meeting, October 1989.

Effect of Frequency and Duration of Generating Unit Outage in System Production Costs, IEEE-PAS, July 1989.

A Tie-Breaking Algorithm for Infinite Horizon Capacity Expansion, ORSA/TIMS Spring National Meeting, May 1989.

A Tie-Breaking Algorithm for Discrete Infinite Horizon Optimization, ORSA/TIMS Fall National Meeting, October 1987.

Resolving Degeneracy in Finite Choice Infinite Horizon Optimization, ORSA/TIMS Fall National Meeting, October 1986.

Instruction for ISU

IE 101 Orientation, Cr. R.; Spring 2001, 20 students
IE 305 Engineering Economic Analysis, 3 credits
Fall Semesters: 2002, 2003, 2004, 2005: 180 students with a teaching assistant
Fall Semester 2007: 55 students with teaching assistant
Spring Semester 2011: 90 students with teaching assistant
IE 312 Optimization, 3 credits, Fall Semesters: 1999 and 2000
50 students with a teaching assistant
IE 413 Stochastic Modeling, Analysis and Simulation, 4 credits, Fall 2015, 2017, 2018, 2019
115-160 students with 1.5 - 2 teaching assistants

IE 422X Design and Analysis Applications for System Improvement, 3 credits, Fall 2020
14 students
IE 510 Network Analysis, 3 credits
Fall 2000, 2001, 2002, 2003, 2019 and Spring 2006, 2010, 2012, 2016, 2018
10-17 graduate students; 2-4 undergraduate students
IE 512 Stochastic Production Systems, 3 credits
Spring Semesters: 2000, 2001, 2002
10-15 graduate students
IE 513 Analysis of Stochastic Systems, 3 credits
Spring 2003, 2005 and Fall 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017
10-20 graduate students, 2-4 undergraduate students
IE 590C Special Topics; replaced low enrollment in IE 510, 3 credits
Fall 2004; 5 graduate students
IE 590 Advanced Analytics Projects, 3 credits, Spring 2019
10 graduate students
IE 592X Advanced Analytics Projects, 3 credits, Spring 2020
5 graduate students
IE 501/601 Research Basics and Communication, 1 credit
Spring 2009; R credit Fall 2009, Spring 2010, Fall 2010, Spring 2011
40-50 graduate students
IE 613 Stochastic Production Systems, 3 credits
Spring 2004, 2007, 2009
4 - 10 graduate students
IE 633 Stochastic Programming, 3 credits
Spring 2013, Fall 2014, Fall 2016, Fall 2018, Fall 2020.
10-13 graduate students

Graduate Student Supervision

Ph.D.

Heedong Kim, Ph.D. Aug 2000 - December 2002, "Analysis of Delayed Product Differentiation under Pull-Type Policies." Granted Dec 2002. Director, Business Planning Team, Taekwang Group, South Korea.

Marco Antonio Serrato García, Ph.D. Aug 2002 - May 2006, "Outsourcing Analysis for Reverse Logistics Systems: A Qualitative Study & a Markov Decision Model." Granted May 2006. Executive Director – Learning Enterprise, Arizona State University.

Jumpol Vorasayan, Ph.D. Jan 2002 - May 2006, "A General Queuing Network Model to Optimize Refurbishing Policies for Returned Products." Granted May 2006. Department of Agro-industrial Technology, Faculty of Agro-Industry, Kasetsart University, Bangkok, Thailand.

Rahul Marathe, Ph.D. Aug 2002 - Aug 2006, "Capacity Expansion under a Service Level Constraint for Uncertain Demand with Lead Times." Granted Aug 2006. Professor, Indian Institute of Technology Madras.

Suphalat Chittamvanich, Ph.D. Aug 2003 - May 2007, "Adjusting Remanufacturing Capacity using Sales and Return Information." Granted May 2007. Senior General Manager, Logistics and Supply Chain Management, Thai Bridgestone Co., Ltd.

Yan Wang, Ph.D. Aug 2007 – Dec 2010, "Scenario Reduction Heuristics for a Rolling Stochastic Programming Simulation of Bulk Energy Flows with Uncertain Fuel Costs." Senior Vice President, CITIC Securities, China.

Xiang Wu, Ph.D. Aug 2007 – May 2012, "Optimal Replacement in the Proportional Hazards Model and its Applications in a Product-Service System." Manager of Data Sciences, Adobe Systems.

Nan Gao, Ph.D. Aug 2009 – Aug 2012, “Essays on Product Return Management and Closed Loop-Supply Chain Network Design.” Project Planning Engineer, BP.

Shan Jin, Ph.D. Aug 2009 – Dec 2012, “Electricity System Capacity Expansion Studies to Consider Uncertainties and Interactions in Restructured Markets.” Director I, Data Science, Liberty Mutual Insurance Group.

Yonghan Feng, Ph.D. Aug 2010 – Dec 2014, “Scenario Generation and Reduction for Long-term and Short-term Power System Generation Planning Under Uncertainties.” Data Scientist, Sears Holdings.

Narges Kazemzadeh, Ph.D. Aug 2013 – Dec 2016, “Risk Considerations in Electricity Generation Unit Commitment under Supply and Demand Uncertainty.” Posdoctoral Research Associate, University of Maryland.

SeyyedAli HaddadSisakht, Ph.D. Aug 2012 – Dec 2016, “Multi-Stage Robust and Stochastic Optimization in Closed Loop Supply Chain Design.” Operations Research Scientist, WISE Systems, Inc., Cambridge, MA.

Didem Sarı, Ph.D. Aug 2013 – May 2017, “Scenario Generation Quality Assessment for Two-Stage Stochastic Programs.” Assistant Professor, Alanya Alaaddin Keykubat University, Turkey.

Ge Guo, Ph.D. Jun 2013 – May 2018. “Solution methods and bounds for two-stage risk-neutral and multistage risk-averse stochastic mixed-integer programs with applications in energy and manufacturing.” Assistant Professor, University of Baltimore.

Dan Hu, Ph.D. Aug 2015 – Aug 2019. “Short-term operation of the power system and the natural gas system considering uncertainties.” Senior Analyst, Liberty Mutual Insurance Company.

Xiaoshi Guo, Ph.D. Aug 2017 – Aug 2021. “Improving time series and cross-sectional momentum trading strategies using stochastic programming.” Data Scientist, Aviagen.

Görkem Emirhüseyinoğlu, Ph.D. Aug 2017 – Dec 2022. “Insights from stochastic programs on aligning farmer prot motive with environmental goals.” Operations Research Scientist, Syngenta.

Ghazal Shah Abadi, Ph.D. Jan 2021 – present.

M.S.

Kyle Franzen, University of Nebraska, Aug 1996. “Genetic Algorithms and their Applications.” Employed by Cardiff Software, San Marcos, CA.

Wen-Lien Chen, University of Nebraska, May 1998. “A Minimum Inventory Cost Assignment of Flexible Machines to Workstations in Series.” Employed by TAISIL Electronic Materials Corporation, Taiwan

Sook-Yee Chan, Mathematics and Statistics (co-advisor), University of Nebraska, May 1999. Thesis: “Modeling Workflow in a Hospital Medical Records Department.” Ph.D. program in Operations Research, North Carolina State University.

Alexander Simampo, M.S. Aug 1999 – May 2000, “Capacity Expansion for a Loss System with Exponential Demand Growth.” Granted May 2000. Employed by Sabritec, Irvine, CA.

Dohyun Pak, M.S. Aug 2000 – May 2001. Thesis: “Option Pricing Methods for Estimating Capacity Shortages.” Granted May 2001. Joined Ph.D. program, Industrial & Operations Engineering, University of Michigan.

Jumpol Vorasayan, M.S. Jan 2000 – Dec 2001. Thesis: “Allocating Work in Process in a Multiple Product CONWIP System.” Granted Dec 2001. Continued for Ph.D., ISU.

Balasaptadri Vellore, M.S. Jan 2000 – Dec 2001. Thesis: “Final Assembly Sequencing of Mixed-Model Assembly Lines in a Just-in-Time Rolling Horizon Environment.” Granted Dec 2001. Employed by EPIC Systems Corporation, Madison, WI.

Nattapol Pornsalnuwat, M.S. Jan 2000 – May 2002. Thesis: "Capacity Expansion with Technological Change." Granted May 2002. Employed by Metropolitan State University, Minneapolis, MN.

Rajiv Bhandari, M.S. Jan 2001 – Dec 2002, "Controlling Inventories with Stochastic Item Returns." Granted Dec 2002. Employed by EPIC Systems Corporation, Madison, WI.

Suphalat Chittamvanich, M.S., Jan 2001 – May 2003. Thesis: "Using Data on Early Returns of Electronic Products to Forecast Future Availability." Granted May 2003. Continued for Ph.D., ISU.

Vikram Sriram, M.S., Aug 2003 – Dec 2004, "Feasibility Study on the Use of Ethanol Produced from Corn Stover in the Fuel Industry." Granted Dec 2004. Employed by Feed Energy Company, Des Moines, IA.

Ankush Oberoi, M.S., Aug 2003 – May 2005, "Practical Application of Lean Manufacturing Principles." Granted May 2005. Employed by Nationwide Insurance, Des Moines, IA.

Yan Wang, M.S. Aug 2005 – May 2007. Thesis: "Effects of Fuel Cost Uncertainty on Optimal Energy Flows in U.S." Granted May 2007. Continued for PhD, ISU

Anand Ghurka, M.S. December 2005 – May 2008, "Security Constrained Deterministic Power Transmission Expansion Planning." Granted May 2008. Employed by Bechtel.

Bhavana Padakala, M.S. Jan 2007 – Dec 2008. Thesis: "Inventory Management in a Manufacturing/Remanufacturing Hybrid System with Condition Monitoring." Granted Dec 2008. Senior Manager, Retail Merchandising & Supply Chain, Accenture.

Shan Jin, M.S. Sep 2007 – Aug 2009. Thesis: "Long Term Power Generation Planning Under Uncertainty." Granted Aug 2009. Continued for PhD, ISU

Ersin Gunes, M.S. Sep 2011 – Aug 2013. Thesis: "Optimal Design of a Gas Transmission Network: A Case Study of the Turkish Natural Gas Pipeline Network System." Granted Aug 2013. BOTAŞ – Petroleum Pipeline Corporation.

Yusuk Kim, M.S. Sep 2011 – Aug 2013. Thesis: "Facility Location for a Hybrid Manufacturing/Remanufacturing System with Carbon Costs." Granted Aug 2013. Korean Express.

Yang-Hua Wu, M.S. Sep 2012 – Aug 2014. Thesis: "A stochastic mathematical program with complementary constraints for market-wide power generation and transmission expansion planning." Granted Aug 2014, Taiwan Semiconductor Manufacturing Company.

Esmaeil Keyvanshokooh, M.S. Sep 2013 – Aug 2015. Thesis: "Hybrid robust and stochastic optimization for closed-loop supply chain network design using accelerated Benders decomposition." Granted Aug 2015, U. of Michigan IOE PhD program.

Dan Hu, M.S. Sep 2013 – Aug 2015. Thesis: "Short-term scheduling of a combined natural gas and electric power system with wind energy." Granted Aug 2015. Continued for PhD, ISU.

Jinchi Li, M.S. Sep 2016 – May 2018. Creative Component: "The influence of the unit commitment plan on the variance of electric power production cost." Granted May 2016.

Enrique Alameda-Basora, M.S. Sep 2017 – May 2019. Thesis: "A Dynamic Bayesian Network to Predict the Total Points Scores in National Basketball Association Games." Granted May, 2018, Deere & Company.

Supervision of Post-Doctoral Students and Professional Staff

Rahul Marathe, Research on stochastic models of capacity expansion and development of student problem-solving skills. Aug 2006 – May 2007. Professor, Indian Institute of Technology Madras.

Dinakar Gade, Improved power systems operations using advanced stochastic optimization, Sep 2012 – Jun 2013. Sabre Holdings.

Youngrok Lee, Improved power systems operations using advanced stochastic optimization, Sep 2013 – Mar 2014. Disney.

Supervision of Undergraduate Research and Independent Study

Charles McAllister (U. of Nebraska honors thesis), May 1998. "Relative Risk Characteristics for Rolling Horizon Hedging Heuristics for Capacity Expansion." Professor, Southeast Missouri State U.

Jeff Ohlmann (U. of Nebraska honors thesis in mathematics and statistics, co-advisor), May 1998. "Forecasting and Optimal Scheduling of Transcriptionists at Madonna Rehabilitation Hospital." Associate Professor, U. Iowa.

REU Supplement for CAREER Award
Brian Erickson and Katie Maurer, Spring 2000
Tony Menning, Summer 2001
Brenda Murphy and Derek Watson, Summer 2002

Program for Women in Science and Engineering Undergraduate Research Interns:
Suzanne Childress and Sadaf Raza, June – August, 2001
Fang Peng, June – August, 2002

Mentor for Freshman Honors Program:
Teresa Hicks and Derek Watson, Spring 2002
Aaron Dobratz and Paula Madgett, Spring 2003
Bill Huspek, Spring 2007
Kegan Wall, Spring 2020

IE 490 Independent Study: Nathan Knause, Fall 2004

Undergraduate Research Assistants
Sarah Gidlewski and Bobbi Wendorff, Fall 2007 – Spring 2008
Chelsea Tomek and Ju Xiong, Summer 2009
Benjamin Meier, Fall 2013
Matthew Goiffon, Spring 2014
Enrique Alameda-Basora, Fall 2016 – Spring 2017
Dan Cushing, Brady Engelke and Cody Haugo, Fall 2017
Jason Castro, Kevin Flynn, Yiwei He, James Mattern, Lavail Nolan, Ryan Olson, Spring 2018
Erin Starkey, Spring 2020
Tyler Brenza, Grace Nashleanas, Colton Richardson, Sam Schwierking, Spring 2021

Offices Held in Professional Societies

Institute of Industrial & Systems Engineers
Member of Selection Committee, Pritsker Doctoral Award, 2019
Member of Selection Committee, Young Energy Investigator Award, 2018
Co-chair, Energy Track for Industrial Engineering Research Conference, 2011 and 2015
Scholarship Board of Trustees, 2007 – 2010
Board of Directors, Operations Research Division, 2004 – 2008 (President, 2006 – 2007)
Chair, Special Interest Group on Stochastic Processes, Operations Research Division, 1998 – 2001
Board Member, Omaha Chapter 90, 1997 – 1999

Institute for Operations Research and the Management Sciences (INFORMS)
Member of Selection Committtee, Harold Hotelling Medal for Lifetime Achievement, Section on Energy, Natural Resources & Environment, 2021-present (award inaugurated 2021).

VP-Communications, Forum on Women in OR/MS, 2001 – 2004

Editorships of Journals

Editor-in-Chief, *The Engineering Economist*, 2017 – 2020
Senior Editor, *Production and Operations Management*, 2011 – 2018
Editor, *IEEE Transactions on Power Systems*, 2014 – 2017
Associate Editor, *Naval Research Logistics*, 2006 – 2016
Guest Editorial Board, *IEEE Transactions on Smart Grid*, 2012 – 2013
Area Editor, *The Engineering Economist*, 2001 – 2012; 2021 - present
Member of Editorial Board, *IIE Transactions*, 2001 – 2006

Service to Disciplinary and Professional Societies or Associations

Institute of Industrial & Systems Engineers (IISE)
Organized session for 2021 Annual Conference
Panelist in Doctoral Colloquium session on publishing, 2020, 2021
Organized two tutorials for 2007 Industrial Engineering Research Conference
Organized session for 2001 Industrial Engineering Research Conference
Chaired session in 2000 Industrial Engineering Research Conference
Organized two sessions for 1999 Industrial Engineering Research Conference

Institute for Operations Research and the Management Sciences (INFORMS)
Reviewer for Quality, Statistics and Reliability Section Student Paper contest, 2009

Reviewer for Energy, Natural Resources & Environment Student Paper contest, 2006

Co-Chair of Invited Cluster on Service Operations, Annual Meeting, November 2005

Organized Sessions:
"Planning for Nonstationary Uncertain Demand," Fall National Meeting, November 1999.
"Forecasting and Decision Making over Time," Spring National Meeting, May 1999.
"Optional Values in Dynamic Optimization," International Conference, June 2001.
"Planning and Control of Pull or Hybrid Systems," National Meeting, November 2002
"E-Commerce for Reverse Logistics," National Meeting, November 2002
"Extending Product Useful Life through Services and Remanufacturing," Annual Meeting, November 2006
"Innovative OR Teaching in Industrial Engineering from the OR Division of IIE," Annual Meeting, November 2006
"Planning for Uncertainty in Energy Systems," Annual Meeting, November 2010

Professional Society Memberships

Alpha Pi Mu Industrial Engineering Honor Society
Tau Beta Pi Engineering Honor Society
INFORMS, Institute for Operations Research and the Management Sciences
Institute of Industrial and Systems Engineers (Fellow)
American Society for Engineering Education
Institute of Electrical and Electronics Engineers (Senior Member)

Journal Article Reviews

Applied Energy
Computers & Operations Research
Encyclopedia of Operations Research and Management Science
European Journal of Operational Research
IEEE Transactions on Automation Science and Engineering

IEEE Transactions on Power Systems
IEEE Transactions on Smart Grid
IISE Transactions
INFOR
INFORMS Journal on Computing
International Journal of Production Economics
International Journal of Production Research
International Transactions in Operational Research
Journal of the American Statistical Association
Journal of Cleaner Production
Journal of Energy Engineering
Journal of Engineering Education
Journal of Manufacturing Systems
Management Science
Queuing Systems: Theory and Applications
Operations Research Letters
Operations Research
Pacific Journal of Optimization
Production and Operations Management
Wind Energy

Conference Reviews

Industrial Engineering Research Conference, 1997/2003/2004/2005/2006/2007/2009/2011
ASME International Mechanical Engineering Congress, 2002/2003
IEEE International Symposium on Electronics & the Environment, 2003
IEEE Power Sysems Conference & Exposition, 2006
ASEE Annual Conference Proceedings, 2004/2005/2007/2019/2020
IEEE Power & Energy Society General Meeting, 2009/2010

Proposal Reviews

FONDECYT, Chile, Nov 2013; Jan 2017, Oct 2017
Swiss National Science Foundation, May 2013
University of Wisconsin – Milwaukee, Jan 2012
Power Systems Engineering Research Center, Oct 2011; Oct 2012; Oct 2014; Oct 2016; Oct 2017
National Science Foundation Program in Applied Mathematics 1999
U.S. Department of Energy Office of Science EPSCoR, Jan 2018

Grant Review Panels

National Science Foundation SBE Collaborative Groups (site visit 2009)
National Science Foundation CMMI Operations Research Program (December 2008)
National Science Foundation DMII Operations Research Program (April 2005)
National Science Foundation DMII/CMMI Manufacturing Enterprise Systems CAREER awards (panels 2004, 2010)
National Science Foundation CMMI Service, Manufacturing and Operations Research program (panel 2016)
National Science Foundation CMMI Service Enterprise Systems (panel 2010)
National Science Foundation DMII Program in Production Systems (panels 2001, 2000, 1999, 1998)
US Department of Energy ARPA-E, 2020

Technical Review Committee, “Development of a Stochastic Resource Adequacy Study with Significant Solar Energy Penetration,” U.S. DOE SunShot Transmission Grid Integration project of Sandia National Laboratories, Oct 2013 – Sep 2014.

University/Campus Service

Iowa State University

Program for Women in Science and Engineering:
Mentor for undergraduate IE student, AY 2000-2001

Center for Excellence in Learning and Teaching (formerly Center for Teaching Excellence):
Engineering representative to the Advisory Board, 2001 – 2005
Presenter in a Faculty Forum on “Teaching: Sharing Ideas and Strategies,” 2002

Department Leadership Taskforce, 2010 – 2013

Faculty Review Board, 2013 – 2019

Faculty Senate, 2014 – 2020
Academic Affairs Council 2014 – 2016
Faculty Development and Administrative Relations Council 2016 – 2017
Engineering Caucus Chair, 2017 – 2019
Office of the Senior Vice President and Provost Review Committee, 2019

Data Science Curriculum Coordinating Committee, 2015 – 2017

Data Science Major Development Committee, 2016 – 2017

Vice President for Research Grand Challenge Advisory Committee, 2017

Graduate College

Judge, GMAP Research Symposium, May 2012; September 2014

Presenter, “Collaborative Scholarship: Benefits & Pitfalls,” Graduate College Professional Development Workshop, Nov 2012

Panelist, GR ST 529, Publishing Academic Work, Feb and Dec 2014

Reviewer, AGEP and GWC Graduate Student Fellowships, 2015 – 2016

Graduate Council, 2020 – present
Graduate Faculty Membership Committee, 2020 – present

College of Engineering

IMSE Study Committee, 2000

Honors Program Committee, 2001 – 2003

Engineering Dean Search Committee, 2003 – 2004

Ad Hoc Committee for IE/ME Merger Study, 2003 – 2004

Research Grants Committee, 2003 – 2006

Faculty Professional Development Committee, 2008 – 2009

Promotion and Tenure Committee, 2008 – 14; Chair, 2010 – 2012

Co-Champion, Sustainability Cluster, 2008 – 2011

Aerospace Engineering Department Chair Search Committee, 2009 – 2010

Industrial and Manaufacturing Systems Engineering Department Chair Search Committees, 2006 – 2007, 2010 – 2011, 2015 – 2016

Mentor for Assistant Professor Michelle Soupir, Agricultural and Biosystems Engineering, 2010 – 2014

Post-tenure Review Ad Hoc Committee, Electrical and Computer Engineering, 2013 – 2014

Research Strategic Plan Committee, 2018

Department of Industrial and Manufacturing Systems Engineering

IMSE Learning Community Learning Team Mentor, 2000 – 2001

Recruiting and Retention Committee, 1999 – 2000
Chair, 2000 – 2001

Graduate Committee, 2001 – 2006

Associate Chair for Research, 2002 – 2006
Organized Walkup Distinguished Lecture Series 2003 – 2005
Newletters and other research publicity, 2003 – 2006
Administered graduate student paper contests, 2004 – 2006

Strategic Plan Committee, 2006

Interim Chair, Jul 2006 – Jul 2007

Mentor of Assistant/Associate Professor Lizhi Wang, 2007 – 2012

Mentor of Assistant Professor Rick Stone, 2008 – 2010

Mentor of Associate Professor Michael Dorneich, 2013 – present

Mentor of Assistant Professor Mingyi Hong, 2014 – 2017

Mentor of Pre-Tenure Faculty Group, 2015 – 2016

Judge for IIE Student Paper Competition, 2009, 2010, 2011

Director of Graduate Education, 2008 – 2014

Associate Chair, 2011 – 2014

Post-tenure Review Ad Hoc Committees, 2011, 2013, 2018, 2019

Member, Public Relations Committee, 2011 – 2015

Chair, Ad Hoc Committee for Department Chair Evaluation, 2015

Honors and Awards Committee, 2014 – 2015

Chair, Fact Finding Committee for Guiping Hu Promotion and Tenure, 2015

Chair, Self-Study Committee for Board of Regents Program Review, 2015 – 2016

Member, Faculty Search Committee, 2016 - 2017

Chair, Preliminary Review Committee for Promotion and Tenure, 2016 – 2017

Member, Fact Finding Committees for Promotion and Tenure Candidates, 2017

Chair, Fact Finding Committees for Promotion Candidates, 2020

Chair, Department Enhancement Program Subcommittee, 2020

Coordinator, Operations Research and Analytics Group, 2016 – 2021

Director of Research, 2021