Esma S. Gel

Dept. of Supply Chain Man. and Analytics,
College of Business,
University of Nebraska–Lincoln,
730 N. 14th St, Lincoln, NE 68588

esma.gel@unl.edu
https://business.unl.edu/people/egel

Selected Research Interests

Stochastic modeling and control of manufacturing and service systems; healthcare delivery systems (patient access management, hospital/ER operations management); medical decision making; workforce management (workforce flexibility/agility and worksharing systems); supply chain management (dynamic price and lead time quotation, project portfolio management); multiple criteria optimization and decision making

Education

◇ **Northwestern University**, Evanston, IL.
Ph.D. in Industrial Engineering, December, 1999, GPA 4.0.

- *Specialization*: Stochastic modeling and control of production systems, queueing theory techniques for performance evaluation.
- Major in Applied Probability, minor in Production and Economics, and minor in Optimization.
- Advisors: Wallace J. Hopp, and Mark P. Van Oyen
- Dissertation title: *Stochastic Models of Workforce Agility in Manufacturing Systems*

◇ **Northwestern University**, Evanston, IL.
M.S. in Industrial Engineering, December 1995, GPA 4.0.

◇ **Middle East Technical University (METU)**, Ankara, Turkey.
B.S. in Industrial Engineering, June 1994.
GPA 3.9/4.0 with 1st ranking out of 77 graduates

◇ **Scholarships & Fellowships**

· Walter P. Murphy Fellowship for graduate study at Northwestern University (1994)
· The Scientific and Technical Research Council of Turkey scholarship (1994)
· Alarko, Inc. Scholarship for undergraduate academic achievement, Turkey (1993)

Honors & Awards

◇ **Award** 2021 Knowledge Enterprise Arizona State University Vision Award, as Technical Lead of the Modeling Emerging Threats to Arizona (METAz) Team.

◇ **Award** 2019 Top 5% Best Teachers Award, Fulton Schools of Engineering, ASU

◇ **Finalist** 2014 Daniel H. Wagner prize for Excellence in Operations Research Practice, "Project Portfolio Planning at Intel Corporation," with Sampath, Kempf and Fowler.

◇ **Award** Dr. Hamed K. Eldin Outstanding Young Industrial Engineer of the Year, given by the Institute of Industrial Engineers (IIE), 2008

Academic Experience

◇ **Cynthia Hardin Milligan Chair of Business and Professor, University of Nebraska-Lincoln**, Jan 2022 - Present
Department of Supply Chain Management and Analytics, College of Business
Lincoln, NE 68588

◇ **Scholar for the Future of Equality,The Difference Engine, Arizona State University**, Jan 2021 - Present
ASU in California, Los Angeles, CA 90015

◇ **Associate Professor, Arizona State University**, July 2007 - Jan 2022
School of Computing, Informatics and Decision Systems Engineering (CIDSE),
Industrial Engineering, Tempe, AZ 85281

◇ **Program Chair, Arizona State University**, August 2011- January 2016
Industrial Engineering Program, CIDSE

◇ **Visiting Associate Professor, Koç University**, Sept. 2008 - June 2009
On sabbatical leave at the Department of Industrial Engineering, Istanbul, Turkey

◇ **Assistant Professor, Arizona State University**, January 2000 - June 2007
Department of Industrial Engineering, P.O. Box 5906, Tempe, AZ 85287-5906

- Undergraduate Courses Taught: IEE 470 Stochastic Operations Research, IEE 461 Production Control, IEE 376 Operations Research
- Graduate Courses Taught: IEE 574 Advanced Deterministic Operations Research (in-class and online), IEE 534 Supply Chain Modeling and Analysis (in-class and online), IEE 561 Production Systems - Factory Physics (in-class and online), IEE 575 Stochastic Operations Research (M.S. core course), IEE 640 Probability and Stochastic Processes (Ph.D. core course), IEE 598 Stochastic Dynamic Programming (Ph.D. elective course)

◇ **Graduate Student**, September 1994 - December 1999
Northwestern University, Dept. of Industrial Engineering and Management Sciences, Evanston, IL.

- **Research Assistant**, with Dr. Wallace J. Hopp and Dr. Mark Van Oyen,
- **Summer Intern, Motorola Inc.**, June - August, 1996
Materials Research and Strategic Technologies, Semiconductor Products Sector, Phoenix, AZ.
- **Teaching Assistant**, September 1995 - May 1996
- **Research Aid, Argonne National Laboratory**, June - August, 1995

Publications

◇ **Refereed Journal Articles (JA)** [1]

38. **Kilinc, D.**, E. S. Gel, M. Y. Sir and K. S. Pasupathy, 2022, "Statistical characterization of patient response to offered access delays using healthcare transactional data," *Naval Research Logistics*, **69**(7), pp, 974-995, `https://doi.org/10.1002/nav.22070`

37. Gel, E. S. and F. S. Salman, 2022, "Dynamic Ordering Decisions with Approximate Learning of Supply Yield Uncertainty," *International Journal of Production Economics*, **243**, 108252, `https://app.dimensions.ai/details/publication/pub.1140182518`

36. S. Romero-Brufau, A. Chopra, A. Ryu, E. S. Gel, R. Raskar, W. Kremers, K. Anderson, J. Subramanian, B. Krishnamurthy, A. Singh, K. Pasupathy, Y. Dong, J. C. O'Horo, W. R. Wilson, O. Mitchell, T. C. Kingsley, 2021 "Public health impact of delaying second dose of BNT162b2 or mRNA-1273 COVID-19 vaccine: simulation agent based modeling study," , *The British Journal of Medicine (BMJ)*, **373**:n1087, `http://dx.doi.org/10.1136/bmj.n1087`

35. **Kilinc, D.**, E. S. Gel, and **A. Demirtas**, 2021, "Intelligent Teletriage and Personalized Routing to Manage Patient Access in a Neurosurgery Clinic, *IISE Transactions on Healthcare Systems Engineering*, **11**(3), pp. 224-239, `https://doi.org/10.1080/24725579.2021.1921081`

34. **Sampath, S.**, E. S. Gel, K. Kempf, and J. W. Fowler, 2021, "A Generalized Decision Support Framework for Large-Scale Project Portfolio Decisions," *Decision Sciences*, pp. 1-24, `https://doi-org.ezproxy1.lib.asu.edu/10.1111/deci.12507`.

33. Gel, E. S., M. L. Jehn, T. Lant, A. R. K. Muldoon, T. Nelson, H. M. Ross, 2020, "COVID-19 healthcare demand projections: Arizona," *PLoS ONE*, **15**(12): e0196556, `https://doi.org/10.1371/journal.pone.0242588`

32. Gel E. S., J. W. Fowler, **K. Khowala**, 2020, "Queuing approximations for capacity planning under common setup rules," *IISE Transactions*, 1-19, `https://doi.org/10.1080/24725854.2020.1815105`

[1] Student participants listed in bold. Contribution percentage, when indicated, refers to an overall share in conceptualization/modeling, data procurement, analysis, and writing of the manuscript.

31. **Morris S.**, Subramanian J, E. S. Gel, G. Runger, E. Thompson, D. W. Mallery, G. J. Weiss, 2018, "Performance of next-generation sequencing on small tumor specimens and/or low tumor content samples using a commercially available platform," *PLoS ONE*, **13**(4): e0196556. `https://doi.org/10.1371/journal.pone.0196556`, PMID: 29702695.

30. **Hafizoglu, A. B.**, E. S. Gel and P. Keskinocak, 2016,"Price and Lead Time Quotation for Contract and Spot Customers," *Operations Research*, **64**(2), pp. 406-415.

29. **Sampath, S.**, E. S. Gel, J. W. Fowler, K. Kempf, 2015, "A Decision-Making Framework for Project Portfolio Planning at Intel Corporation," *Interfaces*, **45**(5), 391-408.

28. **Clough, M. C.**, T. L. Jacobs, E. S. Gel, 2013, "A Choice-Based Mixed Integer Programming Formulation for Network Revenue Management," *Journal of Revenue and Pricing Management*, **13**(5), pp. 366-387.

27. **Marquis, J**, E. S. Gel, J. W. Fowler, M. Koksalan, P. Korhonen , J. Wallenius, 2015, "Impact of Number of Interactions, Different Interaction Patterns and Human Inconsistencies on Some Hybrid Evolutionary Multi-Objective Optimization Algorithms," *Decision Sciences*, **46**(5), pp. 981-1006.

26. **Ramirez-Nafarrate, A.**, **A. B. Hafizoglu**, E. S. Gel, and J. W. Fowler, 2014, "Optimal Ambulance Diversion Control Policies," *European Journal of Operational Research*, **236**(1), pp. 298-312.

25. **Yucel, E.**, S. Salman, E. S. Gel, L. Ormeci, and A. Gel, 2013,"Optimizing specimen collection for processing in clinical testing laboratories," *European Journal of Operational Research*, **227**(3), pp. 503-514.

24. **Morris, S.**, E. S. Gel, J. V. Smith, J. D. Paulauskis, D. Van den Boom, P. Oeth, and R. Penny, 2013, "Two algorithms for biospecimen comparison and differentiation using SNP genotypes," *Pharmacogenomics*, **14**(4), pp. 379-390.

23. **Yucel, E.**, F. S. Salman, L. Ormeci, and E. S. Gel, 2013, "A constant-factor approximation algorithm for multi-vehicle collection for processing problem," *Optimization Letters*, **7**(7), pp. 1627-1642.

22. **Hafizoglu, A. B.**, E.S. Gel and P. Keskinocak, 2013,"Expected Tardiness Computations in Multi-class Priority $M/M/c$ queues," *Journal of Computing*, **25**(2), 364-376.

21. Fowler, J. W., E. S. Gel, M. Koksalan, P. Korhonen, **J. Marquis** and J. Wallenius, 2010, "Interactive Evolutionary Multi-Objective Optimization for Quasi-Concave Preference Functions," *European Journal of Operational Research*, **206**(2), pp. 417-425.

20. Gel, E. S., N. Erkip, and **A. Thulaseedas**, 2010, "Analysis of simple inventory control systems with execution errors: Economic impact under correction opportunities," *International Journal of Production Economics*, **125**, pp. 153-166.

19. **Bozkurt, B.**, J. W. Fowler, E. S. Gel, **B. Kim**, M. Koksalan, and J. Wallenius, 2010, "Quantitative Comparison of Approximate Solution Sets for Multi-Criteria Optimization Problems with Weighted Tchebycheff Preference Function," *Operations Research*, **58**(3), pp. 650-659.

18. Fowler, J. W. , **P. Wirojanagud**, and E. S. Gel, 2008, "Heuristics for workforce planning with worker differences," *European Journal of Operational Research*, **190**(3), pp. 724-740.

17. Gel, A., S. Pannala, M. Syamlal, T. J. O'Brien, and E. S. Gel, 2007, "Comparison of frameworks for next-generation multiphase flow solver, MFIX: A group decision-making exercise," *Concurrency and Computation: Practice and Experience*, **19**(5), pp.609-624.

16. **Vardar, C.**, E. S. Gel, and J. W. Fowler, 2007, "A framework for evaluating remote diagnostics investment decisions for semiconductor equipment suppliers," *European Journal of Operational Research*, **180**(3), pp. 1411-1426.

15. **Wirojanagud, P.**, E. S. Gel, J. W. Fowler, and R. Cardy, 2007, Modeling inherent worker differences for workforce planning," *International Journal of Production Research*, 45(3), pp. 525-553.

14. **Duarte, B.**, J. W. Fowler, K. Knutson, E. S. Gel, and D. Shunk, 2007, A Compact Abstraction of Manufacturing Nodes in a Supply Network, *International Journal of Simulation and Process Modeling, (Special issue on Supply Chain Modeling and Simulation)*, **3**(3), pp. 115-126.
13. Gel, E. S., W. J. Hopp, and M. P. Van Oyen, 2007, Hierarchical cross-training in WIP-constrained environments, *IIE Transactions*, 39, pp. 125-143.
12. Armbruster, D., E. S. Gel, and **J. Murakami**, 2007, Bucket brigades with worker learning, *European Journal of Operational Research*, **176**(1), pp. 264-274.
11. **Berrado, A.**, N. F. Hubele, and E. S. Gel, 2006, An empirical investigation into the distribution of flatness measurements, *Quality Engineering*, **18**(3), pp. 351-357. (Contrib: 20%)
10. Armbruster, D. and E. S. Gel, 2006, Bucket Brigades Revisited: Are they always effective?, *European Journal of Operational Research*, **172**(1), pp. 213-229.
9. Hubele, N. F., **A. Berrado**, and E. S. Gel, 2005, A Wald Test for Comparing Multiple Capability Indices, *Journal of Quality Technology*, **37**(4), pp. 304-307.
8. Karady, G. G. , G. T. Heydt, E. S. Gel, and N. F. Hubele, 2005, The utilization of Micromechanical Devices in a Power Circuit Breaker," *Electric Power Component and Systems*, **33**(10), pp. 1159-1174.
7. **Kim, B.**, E. S. Gel, J. W. Fowler, W. M. Carlyle, and J. Wallenius, 2005, Evaluation of non-dominated solution sets for k-objective optimization problems: An exact method and approximations, *European Journal of Operational Research*, **173**(2), 565-582.
6. Fowler, J. W., **B. Kim**, W. M. Carlyle, E. S. Gel, and S.-M. Horng, 2005, Evaluating A Posteriori Solution Techniques for Bi-Criteria Parallel Machine Scheduling Problems, *Journal of Scheduling*, **8**(1), pp. 75-96.
5. Ye, N., E. S. Gel, **X. Li**, T. Farley, and Y.-C. Lai, 2005, Web server QoS models: applying scheduling rules from production planning, *Computers & Operations Research*, **32**(5), pp. 1147-1164.
4. Carlyle, M. W., J. W. Fowler, E. S. Gel, **B. Kim**, 2003, Quantitative comparison of approximate solution sets for bi-criteria optimization problems, *Decision Sciences*, **34**(1), pp. 63-82.
3. Hopp, W. J., M. L. Spearman, S. Chayet, K. L. Donohue, and E. S. Gel, 2002, Using an optimized queueing network model to support wafer fab design, *IIE Transactions*, **34**(2), pp. 119-130.
2. Van Oyen, M. P., E. S. Gel, and W. J. Hopp, 2001, Performance opportunity for workforce agility in collaborative and noncollaborative work systems, *IIE Transactions*, **33**(9), pp. 761-777.
1. Gel, E. S., W. J. Hopp, and M. P. Van Oyen, 2002, Factors affecting opportunity of worksharing as a dynamic line balancing mechanism, *IIE Transactions*, **34**(10), 847-863.

◇ **Under Review, Under Revision, Work in Progress (IP)**

1. **S. Dey, A. K. Kurbanzade**, E. S. Gel, S. Mehrotra, "Optimization Models for Vaccine Allocation and Distribution Management During COVID-19: A Literature Review," under review, target journal *Naval Research Logistics*, May 2023.
2. **Zhou, S.**, A. Iquebal, E. S. Gel,"Approximating upper bounds using GPR confidence intervals for point-based value iteration, "to be submitted, *journal TBD*, Feb 2023,
3. A. Iquebal, E. S. Gel,"Active learning methods for approximate solution of finite horizon POMDPs using point-based value iteration, "in preparation, target journal: *Operations Research*, March 2023,
4. **Ebadi, M.**, E. S. Gel, and R. Akhavan-Tabatabei, "Risk-dependent Screening Policies for Cervical Cancer: A POMDP Approach." in preparation.

◇ **Book Chapters/Refereed Conference Papers (CP)**

26. A. Chopra, E. S. Gel, J. Subramanian, B. Krishnamurthy, S. Romero-Brufau, K. Pasupathy, T. Kingsley, R. Raskar, 2021, DeepABM: Scalable and Efficient Agent-Based Simulations via Geometric Learning Frameworks - A Case Study for COVID-19 Spread and Interventions, *Proceedings of the 2021 INFORMS Winter Simulation Conference*, Phoenix, AZ.
25. D. M. Aleman, A. Anagnostou, C. Currie, J. W. Fowler, E. S. Gel, A. R. Rutherford, 2021, Panel on Simulation Modeling for Covid-19, *Proceedings of the 2021 INFORMS Winter Simulation Conference*, Phoenix, AZ.
24. Fowler, J., Gel, E. S., **C. Vardar**, 2021, Using transient simulations to improve field service systems for semiconductor manufacturing. *SW21: Proceedings of The Operational Research Society Simulation Workshop*
23. **Kilinc, D.**, N. Shahraki, E. S. Gel, A. Degnim, T. Hoskin, T. Horton, M. Sir, K. Pasupathy, 2020, Simulation Modeling as a Decision Tool for Capacity Allocation in Breast Surgery, *Proceedings of the 2020 INFORMS Winter Simulation Conference*
22. **Kilinc, D.**, N. Shahraki, E. S. Gel, A. Degnim, T. Hoskin, M. Sir, K. Pasupathy, 2020, Using operative features to identify surgical complexity: A case in breast surgery practice. *2020 42nd Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC)*, 6070–6073.
21. Gel, E. S., Keskinocak, P., and **Yilmaz, T.**, 2019, Dynamic Price and Lead Time Quotation Strategies to Match Demand and Supply in Make-to-Order Manufacturing Environments, Book Chapter, A. E. Smith (ed.), *Women in Industrial and Systems Engineering*, Women in Engineering and Science, `https://doi.org/10.1007/978-3-030-11866-2_23`
20. **Clough, M.C.**, Jacobs, T. L., and Gel, E. S., 2015, New formulations for price and ticket availability decisions in choice-based network revenue management, *AGIFORS 55th Annual Symposium: Analytics for Efficiency and Customer Centric Optimization*
19. Gel, E.S., Keskinocak, P., and **A.B. Hafizoglu**, 2011, Price and Lead Time Quotation Strategies for Systems with Contracted Customers and Spot Purchasers, *Engineering Research and Innovation Conference*, Atlanta, GA, USA.
18. Gel, A., E. S. Gel, L. Örmeci, F. S. Salman, **E. Yücel**, 2009, Designing Routes to Match Collected Workload with the Processing Capacity, *Proceedings of the International Workshop on Freight Transportation and Logistics (ODYSSEUS)*, May 26-29 2009, Cesme, Turkey.
17. Karady, G. G., G. T. Heydt, E. Gel, and N. Hubele, 2008, Power Circuit Breaker using MicroElectroMechanical Switches (MEMS), *Operation and Control of Electric Energy Processing Systems*, edited by J. Momoh and L. Mili, Wiley, Chp. 4.
16. **Bekki, Ö. B.** and E. S. Gel, 2008, Dynamic Price and Lead-time Quotation in a Make-to-order System: Approximate Solutions, *Proceedings of the 2008 Industrial Engineering Research Conference*, Vancouver, CA.
15. **Marquis, J.**, J. Fowler, E. S. Gel, M. Köksalan, P. Korhonen, and J. Wallenius, 2007, Interactive Evolutionary Multicriteria Scheduling. *3rd Multidisciplinary International Conference on Scheduling: Theory and Applications*, pp. 591-594.
14. **Wirojanagud, P.**, J. W. Fowler, and E. S. Gel, 2005, Workforce Planning in Semiconductor Manufacturing, *3rd International Conference on Modeling and Analysis of Semiconductor Manufacturing*, October 2005, Singapore, pp. 222-230.
13. **Vardar, C.**, E. S. Gel, and J. W. Fowler, 2005, Using transient simulations to improve field service systems for semiconductor manufacturing, *3rd International Conference on Modeling and Analysis of Semiconductor Manufacturing*, October 2005, Singapore, pp. 140-146.
12. Hubele, N. F., E. S. Gel, and **A. Berrado**. Probability Models, Control and Capability Comparison, *Proceedings of 2005 NSF Design and Manufacturing Grantees Conference*, January 2005, Scottsdale, AZ.

11. Callarman, T., J. W. Fowler, E. S. Gel, M. Pfund, D. Shunk, 2004, Creating a Research Agenda Framework for Semiconductor Supply Network Integration, *Evolution of Supply Chain Management: Symbiosis of Adaptive Value Networks and ICT*, edited by Y.S. Chang, H.C. Makatsoris, and H.D. Richards, Kluwer Academic Publishers, Ch. 6, pp. 161-201.
10. **Vardar, C.**, J. W. Fowler, and E. S. Gel, 2004, Designing a Field Service System for Semiconductor Manufacturing Systems for Remote Diagnostics Era, *Proceeedings of the 12th Annual Industrial Engineering Research Conference*, May 15-19, 2004, Houston, TX.
9. Hubele, N.F., E. S. Gel and **A. Berrado**, Identification of probability models for flatness data, *Proceedings of 2004 NSF Design and Manufacturing Grantees Conference*, January 2004, Dallas, TX.
8. Heydt, G. T., D. S. James, E. Gel, M. Albu, and N. F. Hubele, The reliability analysis of high power switches composed of series and parallel branches, *Proceedings of the 2003 IEEE Power Engineering Society General Meeting*, 2003, l:1-8.
7. Daskin, M. S., W. M. Carlyle, E. S. Gel and J. W. Fowler, Experiments with an Integrated Preference Function for Assessing a Genetic Algorithm for the Center-Median Location Tradeoff, *Proceedings of 2003 NSF Design and Manufacturing Grantees Conference,* January 2003, Birmingham, AL.
6. Duarte, B.M., Fowler, J.W., Knutson, K., Gel, E., and Shunk, D., Parameterization of Fast and Accurate Simulations for Complex Supply Networks, *Proceedings of the Winter Simulation Conference*, San Diego, CA, Dec. 8-11, 2002, pp. 1327-1336.
5. Scholl, W., E. S. Gel, **K. Khowala** and J. W. Fowler, Use of Analytical Queueing Approximations to Set Processing Step Performance Targets at Infineon Technologies, *Proceedings of the International Conference on Modeling and Analysis of Semiconductor Manufacturing* (MASM 2002), Eds. Mackulak, Fowler and Schomig, April 2002, Dresden, pg. 206.
4. Carlyle, W. M., B. Kim, J. W. Fowler and E. S. Gel, 2001, Comparison of multiple objective genetic algorithms for parallel machine scheduling algorithms, *Evolutionary Multi-Criteria Optimization*, Zitzler et al., eds. Lecture Notes in Computer Science, Vol. 1993, pp. 472-485.
3. Kim, B., E. S. Gel, W. M. Carlyle, J. W. Fowler, 2001, A new technique to compare algorithms for bi-criteria combinatorial optimization problems, *MCDM in the New Millenium*, M. Koksalan and S. Zionts, eds., Lecture Notes in Economics and Mathematical Systems, Vol. 507, Springer Verlag, pp. 113-123.
2. Hopp, W. J., M. P. Van Oyen and E. S. Gel, 1999, Workforce agility: Classification and Modeling, Part I", 1999 NSF Design and Manufacturing Grantees Conference, January 1999, Long Beach, CA.
1. Van Oyen, M. P., E. S. Gel and W. J. Hopp, 1997, Performance opportunity for flexible workers, Proceedings of the 35th Annual Allerton Conference on Communication, Control and Computing, September 1997, pp. 553-562.

Research Projects

◇ **Funded Research Awards**

- **National Institutes of Health, National Institute of Allergy and Infectious Disease, R01**, "EpiMoRPH: A simulation environment for generating spatially-refined intervention strategies for the control of infectious disease," Project No: 1R01AI168144-01, **04/2022 thru 04/2027, $3.5M**, with Mihaljevic (PI), Hepp, Doerry, (Northern Arizona University) and S. Mehrotra (Northwestern).
- **Mayo Clinic Rochester**, "SCOPE Tool: Strategic Capacity optimization with predictive enhancement," E. S. Gel (100%), $18,000, 09/2019-12/2019.
- **Mayo Clinic Rochester**, "Optimizing capacity allocation decisions in the face of rising patient demand and complexity," E. S. Gel (100%), $18,661, 01/2019-06/2019.
- **Mayo Clinic Rochester**, "Priority-driven patient access," E. S. Gel (100%), $20,000, 08/2018-12/2018.

- **Mayo Clinic Arizona**, "Artificial intelligence for patient access: machine learning, simulation and optimization tools," E. S. Gel (100%), $30,810, 01/2017-05/2017.
- **Mayo Clinic Arizona**, "A comprehensive model of care for low back pain patients," E. S. Gel (100%), $130,343, 12/1/2015-12/31/2016.
- **National Science Foundation**, "Arizona State University affiliation with the Center for Engineering LOgistics and Distribution (CELDi)," R. Villalobos and E. S. Gel, (30%), $8,000, 6/2010, 5/2011.
- **National Science Foundation**, "Arizona State University affiliation with the Center for Engineering LOgistics and Distribution (CELDi)," R. Villalobos and E. S. Gel, (30%), $199,695, 6/2008, 5/2009.
- **National Science Foundation**, "GOALI Collaborative Research: Matching Demand and Supply through Price and Lead Time Decisions," P. Keskinocak and E. S. Gel (50%), $360,000, 9/1/2007-8/31/2010.
- **IBM**, "Supply Network Modeling: Tight integration versus Loose Integration," T. Callarman, J. W. Fowler and E. S. Gel (33%), $54,000, 01/04-12/04.
- **National Science Foundation**, Division of Design, Manufacture and Industrial Innovation, Manufacturing Enterprise Systems; "SGER: Identification of General Probability Models for a Taxonomy of Manufacturing Processes" E. S. Gel (50%) and N. F. Hubele, $99,936, 9/15/02 - 8/31/03.
- **National Science Foundation**, Division of Electrical and Communications Systems, and **Office of Naval Research;** "EPNES: Integrated MEMS and Advanced Technologies for the Next Generation Power Distribution System," G. T. Heydt, G. G. Karady, E. S. Gel (20%), B. C. Kim, N. F. Hubele, $399,968, 10/1/02 - 9/30/05.
- **National Science Foundation**, Division of Mathematical Sciences, Applied Mathematics; "Dynamics of Production and Supply Networks," D. H. Armbruster, E. S. Gel (33%), and C. Ringhofer, $189,922, 8/15/02 - 8/31/05.
- **National Science Foundation**, Division of Design, Manufacture and Industrial Innovation, Operations Research; "Collaborative SGER: Solution Evaluation Methods for Multi-Objective Combinatorial Optimization Algorithms," W. M. Carlyle, J. W. Fowler, E. S. Gel (33%), Mark S. Daskin and Collette Coullard, $100,000, 6/15/01 - 5/31/02.
- **ASU Institute of Manufacturing and Enterprise Systems**, "An Integrated Approach to Workforce Planning and Control," E. S. Gel, W. M. Carlyle, J. W. Fowler and R. Cardy, $35,000, 9/01-9/02.
- **Infineon Technologies, AG**, "Modeling and Simulation for Productivity Improvement of a Semiconductor Manufacturing Facility," J. W. Fowler and E. S. Gel (33%), $75,485, 1/1/00 - 12/31/01.
- **Semiconductor Research Corporation**, "Scheduling of Semiconductor Wafer Fabrication Operations," J. W. Fowler, W. M. Carlyle, G. Runger and E. S. Gel (12%), $271,088, 1/1/01 - 12/31/03.
- **Intel Corporation**, "A Modular, Scalable Approach to Modeling and Analysis of Semiconductor Manufacturing Supply Networks," J. W. Fowler, H. D. Armbruster, W. M. Carlyle, L. M. Ellram, E. S. Gel (7%), K. Knutson, D. Rivera, D. Shunk, and T. E. Callarman, $150,000, 4/1/01 - 12/31/02.

◇ **Awards for Research on Teaching, Curriculum Development, and Outreach**

- Ira A. Fulton Schools of Engineering *2019 Top 5% Best Teachers* Award, Arizona State University.
- **USAID**, "US-Mexico Partnership on Education and Technology Transfer for the Aerospace Industry," R. Villalobos, J. W. Fowler, and E. S. Gel (33%), $299,956, 5/1/04 - 5/31/07.

- **National Science Foundation**, "A Plan for Competency-Based Individualized Curriculum for Engineering Education," D. L. Shunk, E. S. Gel (40%), G. Hogg, W. M. Moor, D. Evans, $100,000, 1/1/03 - 12/31/03.
- **CRESMET-ASU Faculty Grant-in-Aid**, "A New Multidisciplinary Approach to Stochastic modeling Education," E. S. Gel (100%) and C. Greenwood, $10,000, 3/1/01-6/31/01.

STUDENTS

Ph.D. Advisees: Cem Vardar, Pornsarun Wirojaganud, Özgün B. Bekki, Jon Marquis, Erika Murquia, Ahmet B. Hafizoglu, Eda Yucel (at Koc University, Istanbul), Scott Morris, Michael Clough, Siddhartha Sampath, Aysegül Demirtas, Derya Kılınç, Malik Ebadi (at Sabanci University, Istanbul), Siqiong Zhou (current, at Arizona State University, Tempe).

M.S. Advisees: Anoop Thulaseedas, Ketan Khowala, Ashish Malhotra, Emin A. Tanrioven (Koc University), Emre Sancak (Koc University), Isabel Martha Namen Leon, Özkan Meriç Özcan, Alexis Wade.

PROFESSIONAL AFFILIATIONS

Institute for Operations Research and Management Science (INFORMS): Manufacturing and Service Operations Management (MSOM) Subdivision, Section on Multiple Criteria Decision Making, (MCDM) Healthcare Applications Society (HAS), Women in OR/MS Forum (WORMS)

Institute of Industrial Engineers (IIE)

American Society of Engineering Education (ASEE)

ACM SIGHPC

WORKSHOPS

◇ Selected to participate in the "New Century Scholars: Teaching, Learning and Your Academic Career Workshop" at Stanford University as one of the thirty new engineering faculty members selected nationwide, July 28 - August 2, 2002.

◇ Effective Teaching: A Workshop, by Richard M. Felder and Rebecca Brent, College of Engineering and Mines, The University of Arizona, April 13-14, 2000.

◇ Making Grading a Delight, Center for Learning and Teaching Excellence, ASU, February 16, 2000.

INTERNAL SERVICE

◇ **Leadership and Committee Work at University of Nebraska-Lincoln**

University level:

- University Professorship Committee (AY 22-23)

College level:

- Research and Professorship Review Committee (AY 22-23)

Department level:

- Faculty search committee (AY 2022-23)
- Personnel committee (AY 2021-current)

◇ **Leadership at Arizona State University**

Program Chair, Industrial Engineering Program, School of Computing, Informatics and Decision Systems Engineering (08/11-01/16)

Member, Dean's Executive Committee, Fulton Schools of Engineering (08/11-07/15)

Chair and Member, Dean's Executive Committee, Fulton Schools of Engineering (08/15-01/17)

Member, Dean's Executive Committee, Fulton Schools of Engineering (01/17-08/18)

◇ **Committee Work at Arizona State University**

- Member, Undergraduate Program Committee for Industrial Engineering Program (08/20-present)

- Member, Personnel Committee, School of Computing, Informatics and Decision Systems Engineering (08/18 - 08/20)
- Member and Chair, Dean's Executive Committee (08/13-08/18)
- Member, Undergraduate Program Committee for Industrial Engineering Program (08/11-01/16)
- Member, Undergraduate Program Committee for Engineering Man. Program (08/13-01/16)
- Member, Industrial Engineering Graduate Programs Committee (08/11-01/16)
- Barrett Honors College Faculty Student Advisor for Industrial Engineering and Engineering Management programs, (08/11-present)
- Graduate Programs Committee Member and Chair (08/09-08/11)
- College Teaching Excellence Committee (09/06-06/10)
- Industrial Engineering Department Personnel Committee (09/07-06/08)
- School of Computing, Informatics and Decision Systems Engineering Personnel Committee (09/09-06/11)
- Dean's Diversity Committee, College of Engineering and Applied Sciences, ASU (09/02 - 01/03)
- Joint Arizona Consortium for Manufacturing and Engineering Education for Tomorrow (JACME^{2}T) Continuous Improvement Learning Competency Team Member, ASU (01/00 - 05/07)
- Faculty Advisor, Turkish Student Association (TUSA), ASU, (08/01 - 05/03, 08/13-08/15)
- Chair; Publicity and Seminars Committee, IE, ASU (09/02 - 06/07)
- Organizer of the ASU Stochastic Modeling Community Seminar Series - joint with C. Greenwood (Math), IE, ASU, (01/01 - 08/05)
- Graduate Affairs Committee, IE, ASU (09/02 - 05/06)
- Statewide MS Program Committee, IE, ASU (09/01 -06/07)
- Course Coordinator for IEE 461 and IEE 561, IE, ASU (09/01 - 06/07)
- M.S.E. Comprehensive Exam Coordinator, IE, ASU (various years)

◇ **Service on Master's Thesis (M), Ph.D. Qualifying Exam (QE) and Dissertation (DC) Committees at ASU:** (2020) Logan Mathesen, Seho Kee, Nourah Almatooq, (2019) Alireza Boloori, ... (2013) Jonathan Adler, (2009) Saylisse Davila (DC), Joseph Juarez (DC); (2007) Nuttha Lurponglukana (DC), Hussam Alshraideh (M), Sandipan Ganguly (DC), Harikrishnan Raghunathan (M, Electrical Engineering); (2000 through 2006) Cathy Lawson (DC), Abdelaziz Berrado (QE), Ahmed Algandoor (QE), Yo Huh (QE), Zuizhao Yao (DC, QE), Brett Duarte (M), Andy Burhanuddin (M), Jennifer Smith (M).

◇ **Service as Director or Second Reader for Undergraduate Honors Theses by Barrett Honors College students at ASU:** (2012) Amanda Fischer; (2013) Nicole Dunham, Garrett Austin; (2014) Tignes Fisher; (2015) Katherine Reyes, Matt Otis; (2018) Ö. Meric Özcan, Daniel Travis, Arlen Dean; (2019) Mariah Elgin, Alexis Wade (2022) Elisa Thomas, Lienna Tieu, Brooke Howard

◇ **Minority Student Recruitment at ASU** Have participated in different programs designed to attract students from various underrepresented minority groups at ASU, such as the Minority Engineering Program (MEP), Women in Science and Engineering (WISE) and College of Engineering and Applied Science (CEAS) to attract high school students to Industrial Engineering.

Editorial Service

◇ **Editor;** INFORMS Tutorials Volume, INFORMS National Meeting, 2018, Phoenix, AZ

◇ **Associate Editor;** OMEGA, Flexible Services and Manufacturing Journal,
Interfaces-Special Issue on Humanitarian Logistics
IISE Transactions

◇ **Reviewer for**

Misc. NSF Unsolicited Proposals Review Panels: DMII, MES, CMMI MES, CDI Type I, etc.

Book McGraw-Hill, Factory Physics, 2/e by Hopp and Spearman, October 2002.

Jour. Operations Research
Manufacturing & Service Operations Management
Journal of Operations Management
IEEE Transactions on Engineering Management
IIE Transactions - special issue on Workforce Agility
European Journal of Operations Research
Quality and Reliability Engineering International
Journal of Manufacturing Systems
IIE Transactions -on Manufacturing Systems Modeling
Computers and Operations Research
IIE Transactions -on Scheduling and Logistics

Conf. 35th Annual Allerton Conference on Communication, Control and Computing
15th International Multiple Criteria Decision Making Conference
2006 Manufacturing and Service Operations Management Conference

Professional Service

◇ **Secretary/Treasurer**, INFORMS MSOM Society, 8/2022-8/2023

◇ **Advisory Board Member**, INFORMS MCDM Section, 8/2017-8/2019

◇ **Member**, INFORMS Board of Directors, 01/2015-12/2017

◇ **Vice President of Sections/Societies**, INFORMS Subdivisions Council, 01/2015-12/2017

◇ **Member**, INFORMS Meetings Committee, 01/2012-12/2016

◇ **Member**, INFORMS Subdivisions Council, 01/2011-12/201

◇ **Award Committees**
2021 Syngenta Crop Challenge Award Committee
2021 INFORMS Diversity Ambassadors Selection Committee
2019 Best Paper in Supply Chain and Logistics Selection Committee, IISE Transactions
Chair, 2018 Best Paper in Supply Chain and Logistics Selection Committee, IISE Transactions
INFORMS 2020 Annual Meeting, Committee Title: Nicholson Prize Committee
INFORMS 2019 Annual Meeting, Committee Title: Nicholson Prize Committee
INFORMS 2019 Annual Meeting, Multiple Criteria Decision Making (MCDM) Section, Junior Researcher Award Committee

◇ **Chair**, First IIE Doctoral Colloquium Organization Committee, with B. Bidanda and M. Dessouky, IERC, May 2002.

Conferences

◇ **Session Chair**

· Served as session chair in various conferences, since 2000.

◇ **Cluster Chair**

· "Semiconductor Manufacturing," with W. M. Carlyle, INFORMS International Meeting 2001, Hawaii.

· "Workforce Agility: Issues of Planning and Control," INFORMS Annual Meeting, 2003, Atlanta, GA.

· "Workforce Flexibility," with N. Argon, INFORMS National Meeting, 2005, San Francisco, CA.

· "Workforce Engineering," with R. Askin, INFORMS National Meeting, 2007, Seattle, WA.

- "Workforce Engineering and Management," with Yun Fong Lim, INFORMS National Meeting, 2009, San Diego, CA.
- "Workforce Engineering and Management," with Yun Fong Lim, INFORMS National Meeting, 2011, Charlotte, NC.
- "OR in Agriculture," with Greg Doonan, INFORMS National Meeting, 2019, Seattle, WA
- "Globalized Agriculture," with Greg Doonan, INFORMS National Meeting, 2020, Virtual

◇ **Conference Organizing Committee Member**

- Sponsored Sessions Chair for INFORMS Annual Meeting, 2005, San Francisco, CA.
- Program Co-chair, INFORMS Annual Meeting, 2012, Phoenix, AZ
- Tutorials Co-chair, editor of INFORMS Tutorials Volume, INFORMS National Meeting, 2018, Phoenix, AZ
- General Co-chair, INFORMS Annual Meeting, 2023, Phoenix, AZ

◇ **Advisory Board Member**

- Second International Conference on Responsive Manufacturing, June 2002, Gaziantep, Turkey.

PRESENTATIONS◇ **Invited Seminars**

- Keynote Speaker, "Simulation and Optimization Approaches for Pandemic Response: Descriptive, Predictive and Prescriptive Models," APMS International Conference, Gyeongju, Republic of Korea, September 25-29, 2022, South Korea.
- Invited seminar speaker, "Modeling and Data Analysis for COVID-19 Healthcare Demand Projections in Arizona," Southern Methodist University, Department of Industrial Engineering, March 5, 2021, Dallas, TX.
- "Multi-compartment SEIRD Models for COVID-19 Projections in Arizona," Center for Accelerating Operational Efficiency (CAOE), CIDSE, ASU, January 28, 2021.
- "Multi-compartment SEIRD Models for COVID-19 Projections in Arizona," University of Arizona, Evaluation Group for the Analysis of Data, October 22, 2020.
- "Improving Patient Access through Prioritization," Maricopa Integrated Health System (Valleywise Health), OB/GYN Research Day, June 2018.
- "Improving Access of Low Back Pain Patients through Prioritization at Neurosurgery Arizona," Mayo Clinic Kern Center Grand Rounds, March 12, 2018, Rochester, MN.
- "Dynamic Quotation Strategies to Match Demand and Supply," University of Florida, Industrial Engineering, April 7, 2016, Gainesville, FL.
- "Matching Supply and Demand through Price and Leadtime Decisions," Amazon.com, February 3, 2016, Seattle, WA.
- "Healthcare Adventures of an Industrial Engineer," Mayo Clinic Arizona Department of Medicine Grand Rounds, September 18, 2015, Scottsdale, AZ.
- "Principles for Worksharing Control in Manufacturing Systems with Cross-trained Workers," Middle East Technical University, Ankara, Turkey, May 8, 2009.
- "Principles for Worksharing Control in Manufacturing Systems with Cross-trained Workers," Sabanci University, Istanbul, Turkey, April 2, 2009.
- "Principles for Worksharing Control in Manufacturing Systems with Cross-trained Workers," Koc University, Istanbul, Turkey, March 20, 2009.
- "Dynamic price and lead time quotation in make-to-order systems," Lee Kong Chian School of Business, Singapore Management University, Singapore, May 30, 2008.
- "Models of workforce agility in production systems," Dresden University of Technology, Dresden, Germany, June 29, 2006.

- "Stochastic models of workforce agility in production systems," Department of Industrial Engineering, Purdue University, West Lafayette, IN, April 28, 2003.
- "Bucket brigades when worker speeds do not dominate each other uniformly," Department of Systems and Industrial Engineering, University of Arizona, Tucson, AZ, May 2, 2002.
- "A New Solution Evaluation Method for Multi Objective Combinatorial Optimization Problems," *Women in OR* Seminar Series, Department of Industrial Engineering and Management Sciences Northwestern University, Evanston, IL, November 27, 2001.
- "Factory Physics and The Theory of Constraints," Continuous Improvement Learning Competency Team Symposium on the Theory of Constraints, JACME^{2}T, March 9, 2001, Boeing, Mesa.
- "Stochastic Models of Workforce Agility," Department of Systems and Industrial Engineering, University of Arizona, Tucson, AZ, April 13, 2000.
- "Future Challenges in Lean Enterprises: Workforce Issues," with W. M. Carlyle and J. W. Fowler, Continuous Improvement Symposium on Lean Enterprises, JACME^{2}T, February 10, 2000, Motorola University, Tempe, AZ.

◇ **List of Presentations at Conferences**

- "Scheduling a machine shared by multiple CONWIP lines," with M. P. Van Oyen (Presenter) and E. Kim, INFORMS National Fall Meeting 1996, Atlanta, GA.
- "Limits of performance for production systems with flexible workers" with M. P. Van Oyen and W. J. Hopp, INFORMS National Fall Meeting 1997, Dallas, TX.
- "Organization of flexible labor in stochastic production systems" with M. P. Van Oyen (Presenter) and W. J. Hopp, INFORMS International Meeting 1998, Montreal, Canada.
- "Analysis of flowline worksharing systems" with M. P. Van Oyen and W. J. Hopp, INFORMS National Fall Meeting 1998, Seattle, WA.
- "Coordination of cross-trained workers in serial lines" with M. P. Van Oyen (Presenter) and W. J. Hopp, 10th INFORMS Applied Probability Conference, 1999, Ulm, Germany.
- "Stochastic control of worksharing systems" with M. P. Van Oyen and W. J. Hopp, INFORMS National Spring Meeting 2000, Salt Lake City, UT.
- "Optimal worksharing in systems with hierarchical cross-training" with M. P. Van Oyen and W. J. Hopp, INFORMS National Fall Meeting 2000, San Antonio, TX.
- "An a posteriori evaluation technique for bi-criteria parallel machine scheduling algorithms" with **B. Kim**, W. M. Carlyle and J. W. Fowler, 15th International Conference on Multiple Criteria Decision Making, July 10-14, 2000, Ankara, Turkey.
- "An a posteriori evaluation technique for bi-criteria parallel machine scheduling algorithms" with **B. Kim**, W. M. Carlyle and J. W. Fowler, INFORMS International Meeting 2001, Maui, Hawaii.
- "Bucket brigades with varying worker speeds" with D. Armbruster, INFORMS International Meeting 2001, Maui, Hawaii.
- "Bucket brigades with varying worker speeds," with D. Armbruster, MSOM Sponsored talk, INFORMS National Meeting, November 2001, Miami, FL.
- "Optimal work sharing in systems with hierarchical cross-training," with W. J. Hopp and M. P. Van Oyen, Applied Probability Sponsored talk, INFORMS National Meeting, November 2001, Miami, FL.
- "Finding a Job in Academia," First IIE Doctoral Colloquium, Industrial Engineering Research Conference, May 2002, Orlando, FL.
- "A Facility Location Problem to Expedite Disaster Relief," with J. C. Smith and F. Ozel, INFORMS National Meeting, November 2002.

- "Statistical Operations Control For Wafer Fab Scheduling," with G. Runger, **A. Burhanuddin**, E. S. Gel, **C. Vardar**, INFORMS National Meeting, November 2002.
- "Decision Rules for Adaptive Rescheduling for Wafer Fabs," with **C. Vardar**, **A. Burhanuddin**, E. S. Gel, M. Pfund, G. Runger, INFORMS National Meeting, November 2002.
- "Dynamics of Bucket Brigades When Ranking of Worker Speeds Varies," with H. D. Armbruster, INFORMS National Meeting, November 2002, San Jose, CA.
- "Modeling Inherent Worker Differences for Workforce Planning," with **P. Wirojaganud**, M. Carlyle, J. Fowler and R. Cardy, INFORMS National Meeting, November 2002.
- "Reliability analysis of MEMS switches for high power applications," with **S. Falcones**, N. F. Hubele, G. T. Heydt, G. Karady, EURO-INFORMS Joint International Meeting, July 2003, Istanbul, Turkey.
- "A facility location problem to expedite disaster relief," with Cole Smith and F. Ozel, EURO-INFORMS Joint International Meeting, July 2003, Istanbul, Turkey.
- "Finding the Best Probability Model for Flatness Data," with **A. Berrado** and N. Hubele, INFORMS National Meeting, October 2003, Atlanta, GA.
- "Designing A Field Service System For Semiconductor Manufacturing Systems For Remote Diagnostics Era," with **C. Vardar**, and J. W. Fowler, INFORMS National Meeting, October 2003, Atlanta, GA.
- "Bucket Brigades Revisited: Are they Always Effective?" with D. Armbruster, INFORMS National Meeting, October 2003, Atlanta, GA.
- "Workforce planning under uncertainty," with **P. Wirojanagud** and J. W. Fowler, Tenth International Conference on Stochastic Programming, October 2004, Tucson, AZ.
- "Stochastic optimization using several layers of models with different levels of abstraction," with **C. Vardar** and J. W. Fowler, Tenth International Conference on Stochastic Programming, October 2004, Tucson, AZ.
- "Performance Evaluation of a Single Server Under Various Setup Policies," with **K. Khowala** and J. W. Fowler, INFORMS Annual Meeting, October 2004, Denver, CO.
- "Bucket brigades with worker learning," with D. Armbruster and **J. Murakami**, (invited), INFORMS Annual Meeting, November 2005, San Francisco, CA.
- "Dynamic quotation of price and lead time in a make-to-order system," with **O. B. Bekki**, (contributed), INFORMS Annual Meeting, November 2005, San Francisco, CA.
- "Hierarchical cross-training in WIP-constrained environments," with W. J. Hopp and M. P. Van Oyen, (invited), INFORMS Annual Meeting, November 2005, San Francisco, CA.
- "An interactive evolutionary approach based on convex preference cones to multiobjective optimization," with J. W. Fowler, M. Koksalan, P. Korhonen, **J. Marquis**, and J. Wallenius, INFORMS Annual Meeting, November 2006, Pittsburgh, PA.
- "Joint price and lead-time quotation in make-to-order systems," with **O. B. Bekki**, INFORMS Annual Meeting, November 2006, Pittsburgh, PA.
- "Interactive Evolutionary Multi-Criteria Scheduling," with **J. Marquis**, J. W. Fowler, M. Koksalan, P. Korhonen, and J. Wallenius, INFORMS Annual Meeting, November 2007, Seattle, WA.
- "Workforce Planning Models with Individual Worker Differences," with **P. Wirojanagud** and J. W. Fowler, (invited), INFORMS Annual Meeting, November 2007, Seattle, WA.
- "Dynamics of Bucket Brigades with Fixed Stations," with **E. Murguia** and D. Armbruster, (invited), INFORMS Annual Meeting, October 2008, Washington D.C.
- "Analysis of Diversion Decisions in Emergency Departments Using a Markov Decision Process Model," with **A. R. Nafarrate** and J. Fowler, INFORMS Annual Meeting, October 2008, Washington D.C.

- "Early Career Tips for Tenure and Promotion," participant in invited panel on tenure process, INFORMS Annual Meeting, October 2008, Washington D.C.
- "Solution Methods for Workforce Planning Models with Individual Worker Differences," with **P. Wirojanagud** and J. W. Fowler, (invited), INFORMS Annual Meeting, October 2008, Washington D.C.
- "Designing routes to match collected workload with the processing capacity,", with **E. Yucel**, S. Salman and L. Ormeci, ODYSSEUS 2009, Fourth International Workshop on Freight Transportation and Logistics, May 2009, Cesme, Turkey.
- "Design and Analysis of Ambulance Diversion Policies," with **A. R. Nafarrate**, J. Fowler, and T. Wu, (invited in Health Applications Cluster), INFORMS Annual Meeting, October 2009, San Diego, CA.
- "Dynamics of Bucket Brigades in Systems with Fixed Stations," with **E. Murguia** and D. Armbruster, (invited in Workforce Engineering and Management Cluster), INFORMS Annual Meeting, October 2009, San Diego, CA.
- "Interactive Evolutionary Multi-objective Optimization for Quasi-concave Preference Functions," with **J. Marquis**, J. Fowler, M. Koksalan, and J. Wallenius, (invited in Multi-Criteria Decision Making Cluster), INFORMS Annual Meeting, October 2009, San Diego, CA.
- "Design and Analysis of Ambulance Diversion Policies," with **A. R. Nafarrate**, J. Fowler, and T. Wu, INFORMS Annual Meeting, San Diego, CA, October 2009.
- "Dynamics of Bucket Brigades in Systems with Fixed Stations," with **E. Murguia**, and D. Armbruster, INFORMS Annual Meeting, San Diego, CA, October 2009.
- "Interactive Evolutionary Multi-objective Optimization for Quasi-concave Preference Functions, " with **J. Marquis**, J. Fowler, M. Koksalan, P. Korhonen, and J. Wallenius, INFORMS Annual Meeting, San Diego, CA, October 2009.
- "Dynamic Inventory Replenishment Decisions with Bayesian Learning of Supply Yield Uncertainty, " with **Baykal Hafizoglu** and Sibel Salman, INFORMS Annual Meeting, Austin, TX, November 2010.
- "Dynamic Price and Lead Time Quotation for MTO Systems with Contract Customers and Spot Purchasers, " with **Baykal Hafizoglu** and Pinar Keskinocak, INFORMS Annual Meeting, Austin, TX, November 2010.
- "Expected Tardiness Computations in Multi-class Priority M/M/c Queues, " with **Baykal Hafizoglu** and Pinar Keskinocak, INFORMS Annual Meeting, Austin, TX, November 2010.
- "Panel Discussion: Excellence and Diversity in Academia, " Panel Discussion sponsored by WORMS, INFORMS Annual Meeting, Austin, TX, November 2010.
- "Centralized and Decentralized Dynamic Price and Lead Time Quotation, " with **Baykal Hafizoglu** and Pinar Keskinocak, INFORMS Annual Meeting, Charlotte, NC, November 2011.
- "Dynamics of a Two-worker Bucket Brigade with Location Dependent Hand-off Costs, " with **Erika Murguia** and Dieter Armbruster, INFORMS Annual Meeting, Charlotte, NC, November 2011.
- "Logistics of Clinical Testing: Heuristics for Routing and Scheduling of Specimen Collection," with **Eda Yucel**, Sibel Salman and Lerzan Ormeci, INFORMS Annual Meeting, Charlotte, NC, November 2011.
- "A Constant-factor Approximation Algorithm for Multi-vehicle Collection for Processing problem, " with **Eda Yucel**, Sibel Salman and Lerzan Ormeci, invited, INFORMS Annual Meeting, Phoenix, AZ, October 2012.
- "Arrival Processes Based on SIR Models for Epidemic Diseases, " with Maria Rieders, Lerzan Ormeci and **Baykal Hafizoglu**, INFORMS Annual Meeting, Phoenix, AZ, October 2012.

- "Dynamic Inventory Replenishment Decisions with Bayesian Learning of Supply Yield Uncertainty, " with **Baykal Hafizoglu** and Sibel Salman, sponsored, MSOM, INFORMS Annual Meeting, Phoenix, AZ, October 2012.
- "Interactive Evolutionary Multicriteria Scheduling, " with John Fowler, Murat Koksalan and Jyrki Wallenius, sponsored, MCDM, INFORMS Annual Meeting, Phoenix, AZ, October 2012.
- "Optimal Control Policies for Ambulance Diversion Decisions," with **Adrian Ramirez-Nafarrate**, **Baykal Hafizoglu** and John Fowler, invited, Health Informatics Cluster, INFORMS Annual Meeting, Phoenix, AZ, October 2012.
- "Optimizing Portfolios when Dealing with Ranges," with **Sidd Sampath** and Karl Kempf, INFORMS Annual Meeting, Phoenix, AZ, October 2012.
- "Price and Lead Time Quotation for Contract and Spot Customers," with **Baykal Hafizoglu** and Pinar Keskinocak, sponsored, MSOM, INFORMS Annual Meeting, Phoenix, AZ, October 2012.
- "Quantitative Comparison of Approximate Solution Sets for Multicriteria Optimization Problems," with **Jon Marquis**, John Fowler, Murat Koksalan and Jyrki Wallenius, sponsored, WORMS, INFORMS Annual Meeting, Phoenix, AZ, October 2012.
- "Risk Neutral Project Portfolio Optimization: A case study from Intel," with **Sidd Sampath** and Karl Kempf, INFORMS Annual Meeting, Phoenix, AZ, October 2012.
- "Optimal Ambulance Diversion Control Policies," with **Adrian Ramirez-Nafarrate** and **Baykal Hafizoglu**, EURO-INFORMS Conference, Rome, Italy, July 2013.
- "Impact of Different Interaction Patterns and Human Inconsistencies on Hybrid Evolutionary Multi-Objective Algorithm," with J. Fowler, M. Koksalan, P. Korhonen, **J. Marquis**, and J. Wallenius, sponsored, MCDM, INFORMS Annual Meeting, Minneapolis, MN, October 2013.
- "Stochastic Processes to Model Hospital Arrivals due to an Epidemic," with **Baykal Hafizoglu**, Lerzan Ormeci, and Maria Rieders, (invited in Disease Progression Cluster) INFORMS Annual Meeting, Minneapolis, MN, October 2013.
- "Centralized and Decentralized Dynamic Price and Lead Time Quotation," with **Baykal Hafizoglu** and Pinar Keskinocak, sponsored, MSOM, INFORMS Annual Meeting, San Francisco, November 2014.
- "Optimal Screening Strategies for Cervical Cancer," with Raha Akhavan-Tabatabaei and **Isabel Namen-Leon**, sponsored, Health Applications, INFORMS Annual Meeting, San Francisco, November 2014.
- "A Learner-Analytics Based Approach for Attenuating the Course-Level Dropout Rate," with **Aysegul Demirtas**, Jennifer Bekki and George Runger, INFORMS Annual Meeting, Philadelphia, November 2015.
- "The Optimal Control of Child Delivery For Women with Hypertensive Disorders Of Pregnancy," with **Aysegul Demirtas** and Soroush Saghafian, INFORMS Annual Meeting, Philadelphia, November 2015.
- "Optimal Intervention Strategies For Hypertensive Disorders Of Pregnancy," with **Aysegul Demirtas** and Soroush Saghafian, INFORMS Annual Meeting, Nashville, November 2016.
- "Assessing the maternal and neonatal risks of childbirth morbidity for women with hypertensive disorders of pregnancy," with **Aysegul Demirtas**, Soroush Saghafian, and Dean Coonrod, MD., Pacific Coast Obstetrical and Gynecological Society Annual Meeting 2016, Sun Valley, Idaho, Sep 27, 2016 - Oct 02, 2016.
- "Optimal Child Delivery Strategies for Hypertensive Disorders of Pregnancy," with **Aysegul Demirtas**, Soroush Saghafian, and Dean Coonrod, MD., INFORMS Annual Meeting, Houston, TX, October 2017.
- "Improving Patient Access of Back Pain Patients," with **Derya Kilinc** and Bernard Bendok, MD, INFORMS Annual Meeting, Houston, TX, October 2017.

- "Improving Access of Low Back Pain Patients Through Prioritization at a Neurosurgery Clinic," with **Derya Kilinc** and Bernard Bendok, MD, INFORMS Annual Meeting, Phoenix, AZ, November 2018.
- "Design of Remote Diagnostic Networks for Semiconductor Equipment Suppliers," with John W. Fowler and Giulia Pedrielli, INFORMS Annual Meeting, Phoenix, AZ, November 2018.
- "Surgical Capacity Allocation Via Simulation: the Case of Breast Surgery," with **Derya Kilinc** and Kalyan Pasupathy, INFORMS Annual Meeting, Seattle, WA, November 2019.
- " Optimal Intervention For Women With Hypertensive Disorders of Pregnancy," with **Aysegul Demirtas** and Dean Coonrod, INFORMS Annual Meeting, Seattle, WA, November 2019.
- " Quantitative Modeling and Analysis of Trial Data For Variety Advancement Decisions," with Dieter Armbruster, INFORMS Annual Meeting, Seattle, WA, November 2019.
- " Surgical Capacity Allocation Via Simulation: The Case Of Breast Surgery At Mayo Clinic ," with **Derya Kilinc** and Kalyan Pasupathy, INFORMS Annual Meeting, Virtual, November 2020.
- " Statistical Characterization Of Patient Response To Offered Access Delays Using Healthcare Transactional Data," with **Derya Kilinc**, Mustafa Sir and Kalyan Pasupathy, INFORMS Annual Meeting, Virtual, November 2020.
- " Patient Demand Management Through Prioritized Access With Time Windows Access Protocol," with **Derya Kilinc**, Mustafa Sir and Kalyan Pasupathy, INFORMS Annual Meeting, Virtual, November 2020.
- "Intelligent Teletriage and Personalized Routing at a Neurosurgery Department," invited session "AI Applications at Mayo Clinic," with **Derya Kilinc**, Mustafa Sir and Kalyan Pasupathy, INFORMS Annual Meeting, Virtual, October 2022.