JONATHAN F. BARD

The University of Texas
Graduate Program in Operations Research
& Industrial Engineering
Walker Department of Mechanical
Engineering
Austin, TX 78712-1591

512-471-3076 (*office*)
512-471-8727 (*fax*)

jbard@utexas.edu
http://sites.utexas.edu/bard/

EDUCATION:

D.Sc. - **The George Washington University**
Operations Research (Minor in Statistics)

M.S. - **Stanford University**
Aeronautical Engineering (Concentration in Optimization and Control Theory)

B.S. - **Rensselaer Polytechnic Institute**
Aeronautical Engineering

REGISTRATION: Professional Engineer, Texas # 58835

ACADEMIC APPOINTMENTS:

1984 – present	**University of Texas** *Professor & Industrial Properties Corp. Faculty Fellow*, Department of Mechanical Engineering, Operations Research & Industrial Engineering Graduate Program *Area Coordinator*, ORIE Program (1997-2009) *Associate Director*, Center for Mgt of Ops & Logistics (2001-2014) *Assistant Graduate Advisor*, Mfg Systems Program (1993-2008)	Austin, TX
1981 – 1983	**Northeastern University** Assistant Professor College of Business Administration Department of Management Science	Boston, MA
1979 – 1982	**University of Massachusetts** Assistant Professor College of Management Department of Management Science	Boston, MA

VISITING POSITIONS:

May 2015	**Universidad Nacional del Sur** Professor	Bahia Blanca, Argentina
June 2014	**Augsburg University** Professor Operations Management Department	Augsburg, Germany
May – July, 2010	**London Business School** Professor Department of Management Science and Operations	London, UK
1989 – 1990	**The Technion – Israel Institute of Technology** Professor Faculty of Industrial Engineering and Management	Haifa, Israel
1983 – 1984	**University of California** Associate Professor Department of Industrial Engineering & Operations Research	Berkeley, CA

PROFESSIONAL EXPERIENCE:

1975 – 1979	**The Aerospace Corporation** Program Manager	Washington, DC
1972 – 1975	**Booz, Allen & Hamilton** Project Manager	Bethesda, MD
1969 – 1972	**The Mitre Corporation** Systems Engineer	Bedford, MA

RESEARCH: Design and analysis of manufacturing systems, healthcare delivery, internal and external logistics, hierarchical optimization and decomposition techniques, personnel planning and scheduling, irregular airline operations.

HONORS & AWARDS:

Inaugural Highly Ranked Scholar (2024)
ScholarGPS

Best Researcher Award (2024)
Strategic Management and Business Strategy Organization

Best Paper (2017)
IIE Transactions on Manufacturing & Design

Honorary Doctorate (2016)
Technical University of Munich

Fulbright Scholar (2015)
Universidad Nacional del Sur, Bahia Blanca, Argentina

Harold Kuhn Award (2015)
Naval Research Logistics

INFORMS Fellow (2006)
Institute for Operations Research and the Management Sciences

Hamilton Book Award; *Operations Research Models and Methods* (2004)
University Co-operative Society

Outstanding IIE Publication (2003)
Institute of Industrial Engineers

IIE Transactions Award for Best Application Paper (2003)
Institute of Industrial Engineers

David F. Baker Distinguished Research Award (2002)
Institute of Industrial Engineers

Dean's Fellow (2002)
The University of Texas

Fellow, Center for Decisions under Uncertainty (2001)
Chinese Academy of Sciences, Beijing

Operations Research Division Outstanding Contribution Award (1997)
Institute of Industrial Engineers

IIE Fellow (1996)
Institute of Industrial Engineers

Joint Publishers Book-of-the-Year Award; *Project Management* (1995)
Institute of Industrial Engineers

LAIL Research Fellowship (June 1995)
Ecole Centrale de Lille

Outstanding IIE Publication Award (1994)
Institute of Industrial Engineers

CORE Research Fellowship (1994)
Center for Operations Research and Econometrics, UCL, Belgium

Distinguished Scholar (June 1994)
Japanese Ministry of Posts and Telecommunications

Operations Research Division Application Award (1993)
Institute of Industrial Engineers

Industrial Properties Corp. Endowed Faculty Fellow (1990-present)
The University of Texas

Lady Davis Fellowship (1989-90)
The Technion – Israel Institute of Technology

University Faculty Research Award (1989)
The University of Texas

IIE, Vector to Excellence Award, Austin Chapter (1988-89)

US Army-ASEE Summer Faculty Fellowship (1988)
Belvoir RD&E Center

Sun Oil Fellowship (Spring 1986)

NASA-ASEE Summer Faculty Fellowship (1985)
Johnson Space Center/Texas A&M University

NASA-ASEE Summer Faculty Fellowship (1983)
Jet Propulsion Laboratory/CALTECH

EDITORSHIPS:

IIE Transactions on Operations Engineering (Editor), 1996 – 2009
Management Science (Associate Editor), 1997 – 2002
IEEE Trans. on Engineering Management (Editorial Board), 1985 – 2010
Journal of the Operational Research Society (Advisory Board), 2006 – present
Int'l Journal of Production Research (Editorial Board), 1997 – present
Computers & Operations Research (Editorial Board), 1985 – 2019
Computers & Industrial Engineering (Editorial Board), 2008 – present
IIE Transactions (Department Editor for Applied Optimization), 1986 – 1995

PATENTS

"Systems and Methods for Scheduling Delivery of Healthcare Services; pending US20210225496A1CIP

INDUSTRIAL HIGHLIGHTS:

Designed long-range planning framework for automating general mail processing facilities at the U.S. Postal Service and developed software to manage both equipment acquisition and operations.

Reengineered the information flows in a PCB assembly plant and developed a decision support system for scheduling production.

Designed and implemented a nurse management decision support system now running in over a dozen hospitals in the US and UK.

Analyzed and redesigned the layout of a $10 million FMS work center using group technology concepts.

Developed the requirements for, and oversaw the acquisition of, a fully automated MRP system for an international electronics firm.

Designed a management information system for measuring worker productivity in the shipbuilding industry and performed a longitudinal statistical study to assess operational deficiencies.

Designed and conducted a wide variety of feasibility and operation analyses involving vehicle routing, risk-benefit tradeoffs, telecommunications systems, and corporate strategic planning.

SOFTWARE:

BLP: Branch and bound algorithm for linear and integer bilevel programming

NBLP: Branch and bound algorithm for nonlinear bilevel programming

AHP: Implementation of Saaty's Analytic Hierarchy Process

R&D: Interactive code for R&D project selection and termination

PALB: Dynamic programming implementation of assembly line balancing with parallel workstations

MAJOR CONSULTING:

2017 – present	***AccentCare, Inc.***	Dallas, TX
2001 – present	***Care Systems, Inc.***	Rockville, MD
2006 – 2012	***Federal Express***	Pittsburgh, PA
1997 – 2005	***Caleb Technologies***	Austin, TX
1996 – 2003	***Continental Airlines***	Houston, TX
1994 – 1996	***Ryder Trucking***	Miami, FL
1994 – 1996	***Ministry of Agriculture***	Paris, France
1994 – 1996	***Japan Post***	Tokyo, Japan
1992 – present	***Planmatics, Inc.***	Bethesda, MD
1992 – 1993	***AIQ Systems, Inc.***	Incline Village, NV
1990 – 1991	***U.S. Postal Service***	Washington, DC
1988 – 1991	***Arthur D. Little, Inc.***	Washington, DC
1988 – 1991	***Texas Instruments***	Austin, TX
1987 – 1988	***American Airlines***	Dallas, TX
1985 – 1990	***Jet Propulsion Laboratory***	Pasadena, CA
1984 – 1985	***Transamerica Delaval, Inc.***	Burlingame, CA
1983 – 1984	***Zehntel Corporation***	Walnut Creek, CA
1982 – 1984	***Decision Analysis Corporation***	Lexington, MA
1982 – 1985	***System Software, Inc.***	Boston, MA
1981 – 1983	***Office of Technology Assessment***	Washington, DC
1980 – 1983	***U.S. Department of HUD***	Washington, DC

BIOGRAPHICAL LISTINGS:
Who's Who in Frontier Science and Technology
Who's Who in Computer Education and Research
International Directory of Distinguished Leadership
International Who's Who in Engineering
Who's Who in Engineering Education

SOCIETIES:
Institute for Operations Research and the Management Sciences (INFORMS)
Institute of Industrial Engineers (IIE) (Past President, Austin Chapter)
Production & Operations Management Society (POMS)
Institute of Electrical & Electronics Engineers (IEEE)
Omega Rho (Operations Research)
Sigma Tau (Engineering)

GRADUATE STUDENT SUPERVISION:

Ph.D. Dissertations

[1] Efficient Arc Reduction in Stochastic Networks, James E. Bennett (1987).

[2] Extensions to the Multilevel Programming Problem, James T. Moore (1987).

[3] Algorithms for Nonlinear Bilevel Mathematical Programs, Thomas A. Edmunds (1988).

[4] Mathematical Models for the Design, Analysis and Staffing of General Mail Facilities, Ahmad Jarrah (1991).

[5] The Set-Union Knapsack Problem, David Nehme (December 1995).

[6] Framework for Exact and Heuristics Solutions for the Airlines' Irregular Operations Routing Problem, Michael Arguello (May 1997).

[7] The Inventory Routing Problem with Satellite Facilities, Liu Huang (August 1997).

[8] The Vehicle Routing Problem with Time Windows and Capacity Constraints, Georgios Kontoravdis (August 1997).

[9] Theory and Algorithms for Flow Shop Scheduling with Setup Times, Roger Rios Mercado (August 1997).

[10] Models and Solution Techniques for the Aircraft Schedule Recovery Problem, Benjamin G. Thengvall (August 1999).

[11] Modeling and Optimization of Disruption Management, Xiangtong Qi (May 2003).

[12] Model and Solution Techniques for Machine Scheduling Problems in High Volume Factories, Xinhui Zhang (August 2003).

[13] Multimachine Scheduling with Priority and Resource Constraints, Siwate Rojanasoonthon (May 2004).

[14] Staff Planning and Scheduling in the Service Industry: An Application to US Postal Service Mail Processing and Distribution Centers, Lin Wan (May 2005).

[15] Models and Algorithms for Midterm and Daily Nursing Scheduling, Hadi W. Purnomo (May 2005).

[16] Resource Reallocation in Project Management, Guidong Zhu (May 2005).

[17] A Stochastic Optimization Approach to Long-Term Staff Planning at the U.S. Postal Service, Yong Min Wang (August 2006).

[18] Lot-Sizing and Inventory Routing for a Production-Distribution Supply Chain, Narameth Nananukul (May 2008).

[19] Flexible Shift Scheduling of Physicians in Hospitals, Jens Brunner (July 2009).

[20] Combining Mathematical Programming and Metaheuristics: An Application to Semiconductor Manufacturing, Yumin Deng (December 2009).

[21] Weekly Routing and Scheduling of Home Therapists. Yufen Shao (December 2011).

[22] Pickup and Delivery Problems with Side Constraints, Yuan Qu (December 2012).

[23] Assembly and Test Operations with Multipass Requirements in Semiconductor Manufacturing, Zhufeng Gao (December 2013).

[24] Models and Methods for Optimizing Baggage and Ground Handling at Airports, Ferdinand Kiermaier (May 2015).

[25] Analysis, Design and Implementation of Models for Housestaff Scheduling at Outpatient Clinics and Improving Patient Flow at a Family Health Clinic, Zhichao Shu (May 2015).

[26] Models and Methods for Operational Planning in Freight Railroads, Xiaoyan (June) Si (May 2015).

[27] Optimization Models and Methods for Transportation Services, Sifeng Lin (August 2015).

[28] Scheduling of Crews and Vehicles: Models and Algorithms, Yutian Yang (May 2016).

[29] Combining Simulation and Optimization Techniques to Schedule Assembly & Test Operations and Semiconductor Facilities, Shihui Jia (May 2016).

[30] Optimization Models for Manufacturing and Personnel Scheduling, Youngbum Hur (August 2017).

[31] Use of Optimization to Solve Problems in Electricity Distribution and Healthcare Delivery, Jia Guo (May 2020).

[32] Workforce Planning in Manufacturing and Service Industries, Christian D. Ruf (May 2020).

[33] Optimization Approaches for Energy Infrastructure Network Design. Gopika Geetha Jayadev (May 2021).

[34] Natural Gas Market Applications of Multi-Agent Optimization. Baturay Çalci (May 2022).

[35] Optimization Methods for Scheduling in Industrial Applications. Ai Zhao (August 2023).

[36] Application of Analytic Techniques to Support Organizational Decision Making. Yanyue (Lillian) Ding (May 2024).

M.S. Theses

[1] Optimal Through Flight Analysis, Ian G. Cunningham (1985).

[2] A Multiple Objective Methodology for Evaluating Space Station Subsystem Automation, John M. Kelly (1985).

[3] Optimal R&D Resource Allocation, Pedro E. Kaufmann (1987).

[4] Shortest Path Problems for Probabilistic Networks, Jeanne L. Miller (1987).

[5] Single Machine Scheduling with Flowtime and Earliness Penalties, Krishnamurthi Venkatraman (1989).

[6] Design and Optimization of a Long-Distance Telephone Networks, Wassim Bejjani (1989).

[7] Printed Circuit Board Component Insertion Optimization, Raymond Clayton (1989).

[8] Simulation and Mixed Integer Linear Programming Models for Analysis of Semi-Automated Mail Processing, Steven D. Wert (1989).

[9] Simulation of a Printed Wire Board Facility, Louis G. Zachos (1989).

[10] Discrete Event Simulation of a Medium Volume Production Line Using Slam II Simulation Language, Daniel J. Crowley (1991).

[11] Sequencing Mixed-Model Assembly Lines to Minimize Inventory and Line Length, Sameer Joshi (1991).

[12] A Manufacturing Data Collection System, Lea Ann Graham (1992).

[13] Facility-Wide Improvements to Printed Wire Board Assembly Scheduling, Scott D. Holland (1992).

[14] An Analysis of the Potential Impact of Control Strategies for Bulk Queueing Systems on Semiconductor Manufacturing Facilities, Jennifer K. Robinson (1993).

[15] Capacity Expansion with Discrete Options in Semiconductor Manufacturing Systems, Krishna Srinivasan (1995).

[16] Collaborative Product Development and Management, Raja W. Shaik (2000).

[17] Workforce Scheduling in the Service Industry, Canan Binici (2000).

[18] Solving Nurse Scheduling Problems Using the Column Generation Approach, Hadi W. Purnomo (2002).

[19] Solving the Workgroup Assignment Problem Using Tabu Search, Lakshmi N.K. Ramachandran (2003).

[20] An Analysis of the Arrival Slot Reallocation Problem during a Ground Delay Program, Dinesh N. Mohan (May 2005).

[21] On Implementing Hit-and-Run Drivers in a Multi-Start Framework, Domingo A. Lara (May 2007).

[22] Using Monte Carlo Simulation to Analyze and Validate Heuristically Determined Vehicle Routing Zones, Jing Zan (December 2008).

[23] The Therapist Scheduling Problem for Patients with Fixed Appointment Times, Huan Wang (December 2011).

[24] Portfolio Optimization Using Stochastic Programming with Market Trend Forecast, Yutian Yang (August 2014).

[25] Benders Decomposition and an IP-Based Heuristic for Selecting IMRT Treatment Beam Angles, Sifeng Lin (December 2014).

[26] Formulations and Algorithms for the Kidney Exchange Program, Lizeth Carolina Riascos Alverez (April 2017).

[27] Controlling Work in Process During Semiconductor Assembly and Test Operations, Chuwen Zhang (May 2017)

[28] Applied Materials Dimension Line Factory Simulation, Agnes Elimbi Moudio (May 2022).

[29] Weekly Crew Scheduling for Freight Rail Engineers: A Network Approach, Jinhu Lyu (May 2024).

PUBLICATIONS

BOOKS

[1] A. Shtub, J.F. Bard and S. Globerson (2005), ***Project Management: Processes, Methodologies, and Economics***, Prentice Hall, Upper Saddle River, NJ.

[2] P.A. Jensen and J.F. Bard (2003), ***Operations Research: Models and Method*s**, John Wiley & Sons, New York. https://utw11041.utweb.utexas.edu/ORMM/ http://he-cda.wiley.com/WileyCDA/HigherEdTitle/productCd-0471380040.html

[3] J. Keogh, A. Shtub, J.F. Bard and S. Globerson (2000), ***Project Planning and Implementation***, Pearson, Boston.

[4] J.F. Bard (1998), ***Practical Bilevel Optimization: Algorithms and Applications***, Kluwer Academic Publishers, Boston. http://www.wkap.nl/prod/b/0-7923-5458-3

[5] K. Shimizu, Y. Ishizuka and J.F. Bard (1997), ***Nondifferentiable and Two-Level Programming***, Kluwer Academic Publishers, Boston. http://www.wkap.nl/prod/b/0-7923-9821-1

[6] A. Shtub, J.F. Bard and S. Globerson (1994), ***Project Management: Engineering, Technology and Implementation***, Prentice Hall, Englewood Cliffs, NJ.

BOOK CHAPTERS

[7] A. Mobasher, G. Lim, J.F. Bard and V. Jordan (2013). Daily Scheduling of Nurses in Operating Suites. ***Handbook of Industrial & Systems Engineering***, A.B. Badiru (ed.), Chapter 55, pp. 1217-1241, Taylor & Francis, New York.

[8] J.F. Bard (2010). Nurse Scheduling Models. In ***Wiley Encyclopedia of Operations Research and Management Science***, J.J. Cochran, L.A. Cox, Jr., P. Keskinocak, J.F. Kharoufeh and J.C. Smith (eds.), Topic 4.3, Medicine and Health Care, vol. 5, pp. 3617-3627, John Wiley & Sons, NY.

[9] D.P. Morton, J.F. Bard and Y.M. Wang (2010). A Branch-and-Price Algorithm for the Stochastic Generalized Assignment Problem. In ***Computational Optimization: New Research Developments***, R.F. Linton and T.B. Carroll Jr. (eds.), Chapter 7, pp. 207-236, Nova Publishers, Hauppauge, NY.

[10] J.F. Bard (2005). Project Scheduling. In ***Handbook of Industrial & Systems Engineering***, A. Badiru (ed.), Chapter 4, pp. 4.1-4.46, CRC Press, Boca Raton, FL.

[11] J.F. Bard (2001). Bilevel Linear Programming: Formulation and Properties. In ***Encyclopedia of Optimization***, P.M. Pardalos and C.A. Floudas (eds.), Chapter 8, pp. 137-140, Kluwer Academic Publishers, Amsterdam.

[12] J.F. Bard (2001). Bilevel Linear Programming: Complexity and Equivalence to Minmax Problem. In ***Encyclopedia of Optimization***, P.M. Pardalos and C.A. Floudas (eds.), Chapter 9, pp. 140-144, Kluwer Academic Publishers, Amsterdam.

[13] J.F. Bard (2001). Bilevel Programming in Management. In ***Encyclopedia of Optimization***, P.M. Pardalos and C.A. Floudas (eds.), Chapter 17, pp. 173-177, Kluwer Academic Publishers, Boston.

[14] J.F. Bard (1998). Conceptual Design and Analysis of Rail Car Unloading Area. In ***Industrial Applications of Combinatorial Optimization***, G. Yu (ed.), pp. 272-300, Kluwer Academic Publishers, Boston.

[15] J.F. Bard, J. Plummer and J.C. Sourie (1998). Determining Tax Credits for Converting Nonfood Crops to Biofuels: An Application of Bilevel Programming. In ***Multilevel Optimization: Algorithms and Applications***, A. Migdalas, P.M. Pardalos, P. Varbrand (eds.), pp. 23-50, Kluwer Academic Publishers, Boston.

[16] M. Arguello, J.F. Bard and G. Yu (1998). Models and Methods for Managing Airline Irregular Operations. In ***Operations Research in the Airline Industry***, G. Yu (ed.), pp. 1-45, Kluwer Academic Publishers, Boston.

[17] J.F. Bard (1989). Optimizing the R&D Portfolio. In ***Early Warning Signals for R&D Projects***, R. Balachandra, Chapter 6, pp. 107-121, Lexington Books, D.C. Heath and Company, Lexington, MA.

[18] J.F. Bard (1986). The Evolution of Robotics in Manufacturing. In ***Modelling and Design of Flexible Manufacturing Systems***, A. Kusiak (ed.), pp. 33-63, Elsevier Science Publishing, Amsterdam.

JOURNALS

[19] D. Liu, B.D. Leibowicz, J.F. Bard, Y. Zhu, Y. Guo, Y. Shao (2025). Optimal Investment Planning for Production Networks with Fixed Production Profiles. To appear in ***Computers & Operations Research***.

[20] A. Zhao, J.F. Bard (2024). Weekly Home Healthcare Routing and Scheduling with Overlapping Patient Clusters. ***Health Systems***. https://doi.org/10.1080/20476965.2024.2422494

[21] B. Calci, B.D Leibowicz, J.F. Bard, G. Jayadev (2024). A Bilevel Approach to Multi-Period Natural Gas Pricing and Investment in Gas-Consuming Infrastructure. ***Energy 303,*** 131754. https://doi.org/10.1016/j.energy.2024.131754

[22] D. Rossit, J.F. Bard (2024). Solving the Waste Bin Location Problem with Uncertain Waste Generation Rate: A Bi-objective Robust Optimization Approach. ***Waste Management & Research: The Journal for a Sustainable Circular Economy.*** https://doi.org/10.1177/0734242X241248

[23] J. Guo, J.F. Bard (2024). Air Traffic Controller Scheduling. ***Computers & Industrial Engineering 191*** 11012.

[24] J. Guo, J.F. Bard (2024). Weekly Scheduling for Freight Rail Engineers & Trainmen. ***Transportation Research Part B: Methodology 183*** 102942.

[25] J. Huang, D.J. Morrice, J.F. Bard (2024). Coordinated Scheduling for In-clinic and Virtual Medicine Patients in a Multi-Station Network. ***IISE Transactions on Operations Engineering & Analytics 56***(4), 437-457.

[26] P.M. Cronin, D.J. Morrice, J.F. Bard, L.K. Leykum (2024). Empirical Analysis of the Impact of Collaborative Care in Internal Medicine: Applications to Length of Stay, Readmissions, and Discharge Planning. ***IISE Transactions on Healthcare Systems Engineering 14***(1), 69-88.

[27] A. Zhao, J.F. Bard (2024). Batch Processing in a Multi-purpose System with Machine Downtime and a Multi-skilled Workforce. ***International Journal of Production Research 62***(12), 4470-4493.

[28] A. Zhao, J.F. Bard, J.E. Bickel (2023). A two-stage Approach to Aircraft Recovery under Uncertainty. ***Journal of Air Transport Management 111,*** 102421.

[29] J. Guo, J.F. Bard (2023). A Three-Step Optimization Algorithm for Home Healthcare Delivery. ***Socio-Economic Planning Sciences 87***, Part A, 101517. https://doi.org/10.1016/j.seps.2023.101517

[30] G. Jayadev, B.D. Leibowicz, J.F. Bard, Calci (2022). Risk-averse Stochastic Bilevel Programming: An Application to Natural Gas Markets. ***Computers & Industrial Engineering 169***. https://doi.org/10.1016/j.cie.2022.108151

[31] G. Jayadev, B.D. Leibowicz, J.F. Bard, B. Calci (2022). Strategic Interactions between Liquefied Natural Gas and Domestic Gas Markets: A Bilevel Model. ***Computers & Operations Research*** **144**. https://doi.org/10.1016/j.cor.2022.105807

[32] J. Guo, J.F. Bard (2022). A Column Generation-Based Algorithm for Midterm Nurse Scheduling with Specialized Constraints, Preference Considerations, and Overtime. ***Computers & Operations Research 138.*** https://doi.org/10.1016/j.cor.2021.105597

[33] B. Calci, B.D Leibowicz, J.F. Bard (2022). North American Natural Gas Markets under LNG Demand Growth and Infrastructure Restrictions. ***The Energy Journal 43***(2), 17-40.

[34] J. Guo, J.F. Bard, D.J. Morrice, C. Jaén and R. Poursani (2022). Offering Transportation Services to Economically Disadvantaged Patients at a Family Health Center. ***Health Systems 11***(4), 251-275.

[35] C. Ruf, J.F. Bard, R. Kolisch (2021). Workforce Capacity Planning with Hierarchical Skills, Long-term Training and Random Resignations. ***International Journal of Production Research 60***(2) 783-807.

[36] B. Calci, B.D Leibowicz, J.F. Bard, G. Jayadev (2021). Incorporating Learning-by-Doing into Mixed Complementarity Equilibrium Models. ***Computers & Industrial Engineering 159.*** https://doi.org/10.1016/j.cie.2021.107472

[37] Y. Hur, J.F. Bard, D.J. Morrice (2020). Appointment Scheduling at a Multidisciplinary Outpatient Clinic Using Stochastic Programming. ***Naval Research Logistics 68***(1), 134-155.

[38] D.J. Morrice, J.F. Bard, K.M. Koenig (2020). Designing and Scheduling a Multi-provider Integrated Practice Unit for Patient-Centered Care. ***Health Systems 9***(4), 293-316.

[39] F. Kiermaier, M. Frey and J.F. Bard (2020). The Flexible Break Assignment Problem for Large Tour Scheduling Problems with an Application to Airport Ground Handlers. ***Journal of Scheduling 23***(2), 177-209.

[40] S. McRae, J.O. Brunner and J.F. Bard (2019). Analyzing Economies of Scale and Scope in Hospitals by use of Case Mix Planning. ***Health Care Management Science 23***(1), 80-101.

[41] S. Jia, D.J. Morrice and J.F. Bard (2019). A Performance Analysis of Dispatch Rules for Semiconductor Assembly & Test Operations. ***Journal of Simulation 13***(3), 163-180.

[42] Y. Hur, J.F. Bard, R. Chacon (2019). Hierarchy Machine Setup for Multi-pass lot Scheduling at Semiconductor Assembly and Test Facilities. ***International Journal of Production Research 57***(14), 4351-4370.

[43] P. Zhang, J.F. Bard, D.J. Morrice and K.M. Koenig (2019). Extended Open Shop Scheduling with Resource Constraints: Appointment Scheduling for Integrated Practice Units. ***IISE Transactions on Engineering & Analytics 51***(10), 1037-1060.

[44] Y. Hur, J.F. Bard, M. Frey and F. Kiermaier (2019). A Stochastic Optimization Approach to Shift and Break Scheduling for Airport Workers. *Computers & Operations Research* ***107***, 127-139.

[45] R.Z. Rios-Mercado and J.F. Bard (2019). An Exact Algorithm for Designing Optimal Districts in the Recycling of Waste Electric and Electronic Equipment through an Improved Reformulation. ***European Journal of Operational Research 276***(1), 259-271.

[46] Y. Hur, J.F. Bard, M. Frey and F. Kiermaier (2019). An Investigation of Shift and Break Flexibility with Real-time Break Assignments Using a Rolling Horizon Approach. ***Flexible Services and Manufacturing Journal 31***(1), 174–211.

[47] D. Wang, D.J. Morrice, K. Muthuraman, J.F. Bard, L.K. Leykum and S.H. Noorily (2018). Coordinated Scheduling for a Multi-Server Network in Outpatient Surgical Care. ***Production and Operations Management 27***(3) 458-479.

[48] D.J. Morrice, J.F. Bard, L.K. Leykum and S. Noorily (2018). The Impact of a Patient-Centered Surgical Home Implementation on Preoperative Processes in Outpatient Surgery. ***IIE Transactions on Healthcare Systems Engineering 8***(2), 155-166.

[49] C. Zhang, J.F. Bard and R. Chacon (2017). Controlling Work in Process during Semiconductor Assembly and Test Operations. ***International Journal of Production Research 55***(24), 7251-7275.

[50] J.F. Bard, Z. Shu, D.J. Morrice and L.K. Leykum (2017). Constructing Block Schedules for Internal Medicine Residents. ***IIE Transactions on Healthcare Systems Engineering 7***(1), 1-14.

[51] Y. Yang and J.F. Bard (2017). Internal Mail Transport at Processing & Distribution Centers. ***IISE Transactions on Design & Manufacturing 49***(3), 285-303.

[52] S. Lin, J.F. Bard, A.I. Jarrah, X. Zhang and L.J. Novoa (2017). Route Design for Last-in, First-out Delivery with Backhauling. ***Transportation Research C: Emerging Technologies* 76**, 90-117.

[53] F. Kiermaier, M. Frey and J.F. Bard (2016). Flexible Cyclic Rostering in the Service Industry. ***IIE Transactions on Operations Engineering & Analytics 48***(12), 1139-1155.

[54] A.I. Jarrah, X. Qi and J.F. Bard (2016). The Destination-Loader-Door Assignment Problem for Cross-Docking Facilities. ***Transportation Science 50***(4), 1314–1336.

[55] J.F. Bard, Z. Shu, D.J. Morrice and L.K. Leykum (2016). Annual Block Scheduling for Internal Medicine Residents with 4+1 Templates. ***Journal of the Operational Research Society 67***(7), 911-927.

[56] G. Lim, A. Mobasher, J.F. Bard and A. Najjarbashi (2016). Nurse Scheduling with Lunch Break Assignments in Operating Suites. ***Operations Research for Health Care 10***, 35-48.

[57] J.F. Bard, Z. Shu, D.J. Morrice, L. Leykum and R. Poursani (2016). Block Scheduling for Family Medicine Residency Programs. ***IIE Transactions on Operations Engineering & Analytics 48***(9), 797-811.

[58] S. Lin, G.J. Lim and J.F. Bard (2016). Benders Decomposition and an IP-based Heuristic for Selecting IMRT Treatment Beam Angles. ***European Journal of Operational Research 25***1(3), 715-726.

[59] J.F. Bard, Z. Shu, D. Morrice, D. Wang, R. Poursani and L. Leykum (2016). Improving Patient Flow at a Family Health Clinic. ***Health Care Management Science 19***(2), 170-191.

[60] D. Rossit, F. Tohme, M. Frutos, J.F. Bard and D. Broz (2016). A Non-permutation Flowshop Scheduling Problem with Lot Streaming: A Mathematical model. ***International Journal of Industrial Engineering Computations 7***(3), 507-516.

[61] S. Jia, J.F. Bard, R. Chacon and J. Stuber (2015). Improving Performance of Dispatch Rules for Daily Scheduling of Assembly and Test Operations. ***Computers & Industrial Engineering 90***, 86-106.

[62] J.F. Bard, S. Jia, R. Chacon and J. Stuber (2015). A Comparison of Optimization and Simulation Approaches for Daily Scheduling of Assembly & Test Operations. ***International Journal of Production Research 53***(9), 2617-2632.

[63] Y. Qu and J.F. Bard (2015). A Branch-and-Price-and-Cut Algorithm for Heterogeneous Pickup and Delivery Problems with Configurable Vehicle Capacity. ***Transportation Science 49***(2), 254-270.

[64] Z. Gao, J.F. Bard, R. Chacon and J. Stuber (2015). An Assignment-Sequencing Methodology for Scheduling Assembly and Test Operations with Multi-pass Requirements. ***IIE Transactions on Design & Manufacturing 47***(2) 153-172.

[65] Y. Hu, B. Xu, J.F. Bard, H. Chi and M. Gao (2015). Optimization of Multi-fleet Aircraft Routing Considering Passenger Transiting under Airline Disruption. ***Computers & Industrial Engineering 80***, 132-144.

[66] D.J. Morrice, E. Wang, J.F. Bard, L. Leykum, S. Noorily and P. Veerapaneni. (2014). A Patient-Centered Surgical Home to Improve Outpatient Surgical Processes of Care and Outcomes. ***IIE Transactions on Healthcare Systems Engineering 4***(3), 119-134.

[67] J.F. Bard, Z. Shu and L. Leykum (2014). A Network Approach for Monthly Scheduling of Residents in Primary Care Clinics. ***Operations Research for Health Care 3***(4), 200-214.

[68] J.F. Bard, Y. Shao, X. Qi and A.I. Jarrah (2014). The Traveling Therapist Scheduling Problem with Fixed Appointment Times. ***IIE Transactions on Operations Engineering & Analytics 46***(7), 683-706.

[69] Y. Shao, J.F. Bard and A.I. Jarrah (2014). A Sequential GRASP for the Therapist Routing and Scheduling Problem. ***Journal of Scheduling 17***(2), 109-133.

[70] J.F. Bard, Z. Shu and L. Leykum (2013). Monthly Clinic Assignments for Internal Medicine Housestaff. ***IIE Transactions on Healthcare Systems Engineering 3***(4), 207-239.

[71] J. Brunner, J.F. Bard and J.M. Köhler (2013). Bounded Flexibility in Days-on and Days-Off Scheduling. ***Naval Research Logistics 60***(8), 678-701.

[72] Y. Qu and J.F. Bard (2013). The Heterogeneous Pickup and Delivery Problem with Configurable Vehicle Capacity. ***Transportation Research, Part C: Emerging Technologies 32***, 1-20.

[73] J.F. Bard, Z. Gao, R. Chacon and J. Stuber (2013). Daily Scheduling of Multi-Pass Lots at Assembly and Test Facilities. ***International Journal of Production Research 51***(23-24), 7047-7070.

[74] S. Yeh, L. Leykum, J. O'Rouke and J.F. Bard (2013). Using Systems Engineering to Improve Housestaff Scheduling and Clinic Utilization. ***Journal of General Internal Medicine 28***, S448-S449.

[75] J.F. Bard, Y. Shao and H. Wang (2013). Weekly Scheduling Models for Traveling Therapists. ***Socio-Economic Planning Sciences 47***(3), 191-204.

[76] S.K. Health, J.F. Bard and D.J. Morrice (2013). A GRASP for Simultaneously Assigning and Sequencing Product Families on Flexible Assembly Lines. ***Annals of Operations Research 203***(1), 295-323.

[77] J. Brunner and J.F. Bard (2013). Flexible Weekly Tour Scheduling for Postal Service Workers. ***Journal of Scheduling 39***(1), 129-149.

[78] J.F. Bard and A.I. Jarrah (2013). Integrating Commercial and Residential Pickup and Delivery Networks: A Case Study. ***Omega 41***(4), 706-720.

[79] J.F. Bard, Z. Gao, R. Chacon and J. Stuber (2012). Real-time Decision Support for Assembly and Test Operations in Semiconductor Manufacturing. ***IIE Transactions on Design & Manufacturing 44***(12), 1083-1099.

[80] A.I. Jarrah and J.F. Bard (2012). Large-Scale Pickup and Delivery Work Area Design. ***Computers & Operations Research 39***(12), 3102-3118.

[81] Y. Shao, J.F. Bard and A.I. Jarrah (2012). The Therapist Routing and Scheduling Problem. ***IIE Transactions on Operations Engineering & Analysis 44***(10), 868-893.

[82] Y. Qu and J.F. Bard (2012). A GRASP with Adaptive Large Neighborhood Search for Pickup and delivery Problems with Transshipment. ***Computers & Operations Research 39(***10), 2439–2456.

[83] A. Mobasher, G. Lim, J.F. Bard and V. Jordan (2011). Daily Scheduling of Nurses in Operating Suites. ***IIE Transactions on Healthcare Systems Engineering 1***(4), 232-246.

[84] J.O. Brunner, J.F. Bard and R. Kolisch (2011). Midterm Physician Scheduling with Flexible Shifts Using Branch-and-Price. ***IIE Transactions on Operations Engineering & Analysis 43***(2), 84-109.

[85] A.I. Jarrah and J.F. Bard (2011). Pickup and Delivery Network Segmentation Using Contiguous Geographic Clustering. ***Journal of the Operational Research Society 62***(10), 1827-1843.

[86] Y. Deng and J.F. Bard, (2011). A Reactive GRASP with Path Relinking for Capacitated Clustering. ***Journal of Heuristics 17***(2), 119-152.

[87] J.F. Bard, Y. Deng, R. Chacon and J. Stuber (2010). Midterm Planning to Minimize Deviations from Daily Target Outputs in Semiconductor Manufacturing. ***IEEE Transactions on Semiconductor Manufacturing 23***(3), 456-467.

[88] J.F. Bard and N. Nananukul (2010). A Two-Stage Supply Chain Planning Problem with Inventory Routing. ***Computers & Operations Research 37***(12), 2202-2217.

[89] J.F. Bard, A.I. Jarrah and J. Zan (2010). Validating Vehicle Routing Zone Construction Using Monte Carlo Simulation. ***European Journal of Operational Research 206***(1), 73-85.

[90] Y. Deng, J.F. Bard, R. Chacon and J. Stuber (2010). Scheduling Back-End Operations in Semiconductor Manufacturing. ***IEEE Transactions on Semiconductor Manufacturing 23***(2), 210-220.

[91] J.O. Brunner, J.F. Bard and R. Kolisch (2009). Flexible Shift Scheduling of Medical Residents. ***Health Care Management Science 12***(3), 285-305.

[92] J.F. Bard and N. Nananukul (2009). The Integrated Production-Inventory-Distribution-Routing Problem for a Single Commodity. ***Journal of Scheduling 12***(3), 257-280.

[93] J.F. Bard and A.I. Jarrah (2009). Large-Scale Constrained Clustering for Rationalizing Pickup and Delivery Operations. ***Transportation Research, Part B: Methodological 43***(5), 542-561.

[94] J.F. Bard and N. Nananukul (2009). Heuristics for a Multiperiod Inventory Routing Problem with Production Decisions. ***Computers & Industrial Engineering 57***(3), 713-723.

[95] J.F. Bard and L. Wan (2008). Workforce Design with Movement Restrictions between Workstation Groups. ***Manufacturing and Service Operations Management 40***(1), 24-42.

[96] J.F. Bard and D.N. Mohan (2008). Reallocating Arrival Slots during a Ground Delay Program. ***Transportation Research Part B: Methodological 42***(2), 113-134.

[97] S.K. Monkman, D.J. Morrice and J.F. Bard (2008). A Production Scheduling Heuristic for an Electronics Manufacturer with Sequence Dependent Setup Costs. ***European Journal of Operational Research 187***(3), 1100-1114.

[98] J.F. Bard and H.W. Purnomo (2007). Cyclic Preference Scheduling of Nurses Using a Lagrangian-Based Heuristic. ***Journal of Scheduling 10***(1), 5-23.

[99] G. Zhu, J.F. Bard and G. Yu (2007). A Two-Stage Stochastic Programming Approach for Project Planning with Uncertain Activity Durations. ***Journal of Scheduling 10***(3), 167-180.

[100] J.F. Bard, D.P. Morton and Y.M. Wang (2007). Workforce Planning at USPS Mail Processing & Distribution Centers Using Stochastic Optimization. ***Annals of Operations Research 155***(1), 51-78.

[101] L. Wan and J.F. Bard (2007). Weekly Staff Scheduling with Workstation Group Restrictions. ***Journal of the Operational Research Society 58***(8), 1030-1046.

[102] H.W. Purnomo and J.F. Bard (2007). Cyclic Preference Scheduling for Nurses Using Branch and Price. ***Naval Research Logistics 54***(2), 200-220.

[103] J.F. Bard and H.W. Purnomo (2006). Incremental Changes in the Workforce to Accommodate Changes in Demand. ***Health Care Management Science 9***(1), 71-85.

[104] J.F. Bard and L. Wan (2006). The Task Assignment Problem for Unrestricted Movement between Workstation Groups. ***Journal of Scheduling 9***(4), 315-342.

[105] G. Zhu, J.F. Bard and G. Yu (2006). A Branch-and-Cut Procedure for the Multimode Resource Constrained Project Scheduling Problem. ***INFORMS Journal on Computing 18***(3), 377-390.

[106] X. Qi, J.F. Bard and G. Yu (2006). Disruption Management for Machine Scheduling: The Case of SPT Schedules. ***International Journal of Production Economics 103***(1), 166-184.

[107] J.F. Bard and S. Rojanasoonthon (2006). A Branch & Price Algorithm for Parallel Machine Scheduling with Time Windows and Job Priorities. ***Naval Research Logistics 53***(1) 24-44.

[108] X. Zhang and J.F. Bard (2006). A Multi-Period Machine Assignment Problem. ***European Journal of Operational Research 170***(2), 398-415.

[109] X. Qi and J.F. Bard (2006). Generating Labor Requirements and Rosters for Mail Handlers Using Simulation and Optimization. ***Computers & Operations Research 33***(9), 2645-2666.

[110] X. Zhang and J.F. Bard (2006). Comparative Approaches to Equipment Scheduling in High Volume Factories. ***Computers & Operations Research 33***(1), 132-157.

[111] J.F. Bard and H.W. Purnomo (2005). Hospital-Wide Reactive Scheduling of Nurses with Preference Considerations. ***IIE Transactions on Operations Engineering 37***(7), 589-608.

[112] J.F. Bard and L. Wan (2005). Weekly Scheduling in the Service Industry: An Application to Mail Processing & Distribution Centers. ***IIE Transactions on Scheduling & Logistics 37***(5), 379-396.

[113] J.F. Bard and H.W. Purnomo (2005). Short-Term Nurse Scheduling in Response to Daily Fluctuations in Supply and Demand. ***Health Care Management Science 8***(4), 315-324.

[114] J. F. Bard and H.W. Purnomo (2005). A Column Generation-Based Approach to Solve the Preference Scheduling Problem for Nurses with Downgrading. ***Socio-Economic Planning Sciences 39***(3), 193-213.

[115] J.F. Bard and H.W. Purnomo (2005). Preference Scheduling For Nurses Using Column Generation. ***European Journal of Operational Research 164***(2), 510-534.

[116] X. Zhang and J.F. Bard (2005). Equipment Scheduling at Mail Processing and Distribution Centers. ***IIE Transactions on Scheduling & Logistics 37***(2), 175-187.

[117] G. Zhu, J.F. Bard and G. Yu (2005). Disruption Management for Resource-Constrained Project Scheduling. ***Journal of the Operational Research Society 56***, 365-381.

[118] S. Rojanasoonthon and J.F. Bard (2005). A GRASP for Parallel Machine Scheduling with Time Windows. ***INFORMS Journal on Computing 17***(1), 32-51.

[119] X. Qi, J.F. Bard and G. Yu (2004). Class Scheduling for Pilot Training. ***Operations Research 52***(1), 148-162.

[120] J.F. Bard (2004). Staff Scheduling in High Volume Service Facilities with Downgrading. ***IIE Transactions on Scheduling & Logistics 36***(10), 985-997.

[121] J.F. Bard (2004). Selecting the Appropriate Input Data Set When Configuring a Permanent Workforce. ***Computers & Industrial Engineering 47***(4), 371-389.

[122] X. Qi, J.F. Bard and G. Yu (2004). Supply Chain Coordination with Demand Disruptions. ***Omega 32***(4), 301-312.

[123] R.Z. Rios-Mercado and J.F. Bard (2003). The Flowshop Scheduling Polyhedron with Setup Times. ***Journal of Combinatorial Optimization 7***(3) 291-318.

[124] S. Rojanasoonthon, J.F. Bard and S.D. Reddy (2003). Algorithms for Parallel Machine Scheduling: A Case Study of the Tracking and Data Relay Satellite System. ***Journal of the Operational Research Society 54***(8), 806-821.

[125] B.G. Thengvall, J.F. Bard and G. Yu and (2003). A Bundle Algorithm for the Aircraft Schedule Recovery Problem During Hub Closures. ***Transportation Science 37***(4), 392-407.

[126] J.F. Bard, C. Binici and A.H. deSilva (2003). Staff Scheduling at the United States Postal Service. ***Computers & Operations Research 30***(5), 745-771.

[127] P. Jaillet, J.F. Bard, L. Huang and M. Dror (2002). Delivery Cost Approximations for Inventory Routing Problems in a Rolling Horizon Framework. ***Transportation Science 36***(3), 292-300.

[128] J.F. Bard, G. Kontoravdis and G. Yu (2002). A Branch-and-Cut Procedure for the Vehicle Routing Problem with Time Windows. ***Transportation Science 36***(2), 250-269.

[129] X. Qi, G. Yu and J.F. Bard (2002). Single Machine Scheduling with Variable Due Dates. ***Discrete Applied Mathematics*** **122**(1-3), 211-233.

[130] S. Dempe and J.F. Bard (2001). A Bundle Trust-Region Algorithm for Bilinear Bilevel Programming. ***J. Optimization Theory and Applications 110***(2), 265-288.

[131] B.G. Thengvall, G. Yu and J.F. Bard (2001). Multiple Fleet Aircraft Schedule Recovery Following Hub Closure. ***Transportation Research, Part A: Policy and Practice 35***(4), 289-308.

[132] J.F. Bard, G. Yu and M.F. Arguello (2001). Optimizing Aircraft Routings in Response to Groundings and Delays. ***IIE Transactions on Operations Engineering 33***(10), 931-947.

[133] J.F. Bard, J. Plummer and J.C. Sourie (2000). A Bilevel Programming Approach to Determining Tax Credits for Biofuel Production. ***European Journal of Operational Research 120***(1), 30-46.

[134] B.G. Thengvall, J.F. Bard and G. Yu (2000). Balancing User Preferences for Aircraft Schedule Recovery during Airline Irregular Operations. ***IIE Transactions on Operations Engineering 32***(3), 181-193.

[135] J.F. Bard, K. Srinivasan and D. Tirupati (1999). An Optimization Approach to Capital Expansion in Semiconductor Manufacturing. ***International Journal of Production Research 37***(15), 3359-3382.

[136] R.Z. Rios-Mercado and J.F. Bard (1999). A Branch-and-Bound Algorithm for Flowshop Scheduling with Setup Times. ***IIE Transactions on Scheduling & Logistics 31***(8), 721-731.

[137] R.Z. Rios-Mercado and J.F. Bard (1999). An Enhanced TSP-Based Heuristic for Makespan Minimization in a Flow Shop with Setup Times. ***Journal of Heuristics 5***(1), 53-70.

[138] J.F. Bard, L. Huang, P. Jaillet and M. Dror (1998). A Decomposition Approach to the Inventory Routing Problem with Satellite Facilities. ***Transportation Science 32***(2), 189-203.

[139] J.F. Bard, L. Huang, M. Dror and P. Jaillet (1998). A Branch and Cut Algorithm for the VRP with Satellite Facilities. ***IIE Transactions on Operations Engineering 30***(9), 821-834.

[140] R.Z. Rios-Mercado and J.F. Bard (1998). Computational Experience with a Branch-and-Cut Algorithm for Flowshop Scheduling with Setup Times. ***Computers & Operations Research 25***(5), 351-366.

[141] R.Z. Rios-Mercado and J.F. Bard (1998). Heuristics for the Flow Line Problem with Setup Costs. ***European Journal of Operational Research 110***(1), 76-98.

[142] M.F. Arguello, J.F. Bard and G. Yu (1997). A GRASP for Aircraft Routing in Response to Groundings and Delays. ***Journal on Combinatorial Optimization 1***(3), 211-228.

[143] J.F. Bard (1997). An Analysis of a Rail Car Unloading Area for a Consumer Products Manufacturer. ***Journal of the Operational Research Society 48***(9) 873-883.

[144] J.F. Bard (1997). Benchmarking Simulation Software for Use in Modeling Postal Operations. ***Computers & Industrial Engineering 32***(3) 607-625.

[145] O. Goldschmidt, J.F. Bard and A. Takvorian (1997). Complexity Results for Mixed-Model Assembly Lines with Approximation Algorithms for the Single Station Case. ***International J. Flexible Manufacturing Systems 9***(3) 251-272.

[146] J.F. Bard, A.H. deSilva and A. Bergevin (1997). Evaluating Simulation Software for Postal Service Use: Technique versus Perception. ***IEEE Transactions on Engineering Management 44***(1) 31-42.

[147] T.A. Feo, J.F. Bard and S.D. Holland (1996). A GRASP for Scheduling Printed Wiring Board Assembly. ***IIE Transactions on Scheduling & Logistics 28***(2), 155-164.

[148] T.A. Feo, J.F. Bard and S.D. Holland (1995). Facility Wide Scheduling of Printed Wiring Board Assembly. ***Operations Research 43***(2), 219-230.

[149] J.K. Robinson, J.W. Fowler and J.F. Bard (1995). The Use of Upstream and Down Stream Information in Scheduling Semiconductor Batch Operations. ***International Journal of Production Research 33***(7), 1849-1869.

[150] J.F. Bard, T.A. Feo and S.D. Holland (1995). Reengineering and the Development of a Decision Support System for Printed Wiring Board Assembly. ***IEEE Transactions on Engineering Management 42***(1), 91-98.

[151] G. Kontoravdis and J.F. Bard (1995). A GRASP for the Vehicle Routing Problem with Time Windows. ***ORSA Journal on Computing 7***(1), 10-23.

[152] D. J. Crowley, J.F. Bard and P.A. Jensen (1995). Using Flow Ratio Analysis and Discrete Event Simulation to Design a Medium Volume Production Facility. ***Computers & Industrial Engineering 28***(2), 379-397.

[153] A.I.Z. Jarrah, J.F. Bard and A.H. deSilva (1994). Solving Large-Scale Tour Scheduling Problems. ***Management Science 40***(9), 1124-1144.

[154] A.I.Z. Jarrah, J.F. Bard and A.H. deSilva (1994). Equipment Selection and Machine Scheduling in General Mail Facilities. ***Management Science 40***(8), 1049-1068.

[155] J.F. Bard, A. Shtub and S.B. Joshi (1994). Sequencing Mixed-Model Assembly Lines to Level Parts Usage and Minimize Line Length. ***International Journal of Production Research 32***(10), 2431-2454.

[156] J.F. Bard, R. Clayton and T.A. Feo (1994). Machine Setup and Component Insertion for Printed Circuit Board Assembly. ***International Journal of Flexible Manufacturing Systems 6***(1), 5-31.

[157] J.F. Bard, A.H. deSilva and T.A. Feo, S.D. Wert (1993). Design of Semi-Automated Mail Processing Facilities. ***IIE Transaction on Design & Manufacturing 25***(4), 88-101.

[158] J.F. Bard, K. Venkatraman and T.A. Feo (1993). Single Machine Scheduling with Flow Time and Earliness Penalties. ***Journal of Global Optimization 3***(3***)***, 289-309.

[159] J.F. Bard and A. Graham (1993). Developing a Data Collection System for PCB Assembly: A Case Study in Software Engineering. ***IEEE Transactions on Engineering Management 40***(2), 191-202.

[160] J.F. Bard (1992). A Comparison of the Analytic Hierarchy Process with Multiattribute Utility Theory: A Case Study. ***IIE Transactions 24***(5), 111-121.

[161] A.I.Z. Jarrah, J.F. Bard and A.H, deSilva (1992). A Heuristic for Machine Scheduling at General Mail Facilities. ***European Journal of Operational Research 63***(2) 192-206.

[162] S.B. Graves, J.L. Ringuest and J.F. Bard (1992). Recent Developments in Screening Methods for Nondominated Solutions in Multiobjective Optimization. ***Computers & Operations Research 19***(7), 683-694**.**

[163] J.F. Bard and J.T. Moore (1992). An Algorithm for the Discrete Bilevel Programming Problem. ***Naval Research Logistics 39*** 419-435.

[164] T.A. Edmunds and J.F. Bard (1992). An Algorithm for the Mixed-Integer Nonlinear Bilevel Programming Problem. ***Annuals of Operations Research 34*** 149-162**.**

[165] J.F. Bard, E. Dar-El and A. Shtub (1992). An Analytic Framework for Sequencing Mixed Model Assembly Lines. ***International Journal of Production Research 30***(1), 35-48.

[166] S.D. Wert, J.F. Bard, A.H. deSilva and T.A. Feo (1991). A Simulation Analysis of Semi-Automated Mail Processing Facilities. ***Journal of the Operational Research Society 42***(12), 1071-1086.

[167] T.A. Feo, K. Venkatraman and J.F. Bard (1991). A GRASP for a Difficult Single Machine Scheduling Problem. ***Computers & Operations Research 18***(8), 635-643.

[168] J.F. Bard and W.A. Bejjani (1991). Designing Telecommunications Networks for the Reseller Market. ***Management Science 37***(9), 1125-1146.

[169] J.F. Bard and B. Golany (1991). Determining the Number of Kanbans in a Multiproduct, Multistage Production System. ***International Journal of Production Research 29***(5), 881-895.

[170] T.A. Edmunds and J.F. Bard (1991). Algorithms for Nonlinear Mathematical Bilevel Programs. ***IEEE Trans. Systems, Man, and Cybernetics 21***(1), 83-89.

[171] J.F. Bard and J.E. Bennett (1991). Arc Reduction and Path Preference in Stochastic Acyclic Networks. ***Management Science 37***(2), 198-215.

[172] J.F. Bard and T.A. Feo (1991). An Algorithm for the Manufacturing Equipment Selection Problem. ***IIE Transactions 23***(1), 83-92.

[173] J.F. Bard (1991). Some Properties of the Bilevel Programming Problem. ***J. Optimization Theory and Applications 68***(2), 371-378.

[174] J.T. Moore and J.F. Bard (1990). The Mixed Integer Linear Bilevel Programming Problem. ***Operations Research 38***(5), 911-921.

[175] T.A. Edmunds and J.F. Bard (1990). A Time Axis Decomposition Technique for Large Scale Optimal Control Problems. ***J. Optimization Theory and Applications 67***(2), 259-277.

[176] J.F. Bard (1990). Using Multicriteria Methods in the Early Stages of New Product Development. ***Journal of the Operational Research Society 41***(8) 755-766.

[177] J.F. Bard and S. Sousk (1990). A Tradeoff Analysis for Rough Terrain Cargo Handlers Using the AHP: An Example of Group Decision Making. ***IEEE Transactions on Engineering Management EM-37***(3), 222-228.

[178] J.F. Bard and J.T. Moore (1990). A Branch and Bound Algorithm for the Bilevel Programming Problem. ***SIAM Journal on Scientific and Statistical Computing 11***(2) 281-292.

[179] J.F. Bard and J.T. Moore (1990). Production Planning with Variable Demand. ***Omega 18***(1) 35-42.

[180] T.A. Edmunds and J.F. Bard (1990). A Decomposition Technique for Discrete Time Optimal Control Problems with an Application to Water Resources Management. ***Mathematical and Computer Modelling 13***(1) 61-78.

[181] T.A. Feo and J.F. Bard (1989). Flight Scheduling and Maintenance Base Planning. ***Management Science 35***(12), 1415-1432.

[182] J.F. Bard (1989). Assembly Line Balancing with Parallel Workstations and Dead Time. ***International Journal of Production Research 27***(6), 1005-1018.

[183] J.F. Bard and T.A. Feo (1989). Operations Sequencing in Discrete Parts Manufacturing. ***Management Science 35***(2), 249-255.

[184] J.F. Bard and A. Feinberg (1989). A Two-Phase Approach to Technology Selection and System Design. ***IEEE Transactions on Engineering Management EM-36***(1), 28-36.

[185] J.F. Bard and J.L. Miller (1989). Probabilistic Shortest Path Problems with Budgetary Constraints. ***Computers & Operations Research 16***(2), 145-159.

[186] J.F. Bard and T.A. Feo (1989). The Cutting Path and Tool Selection Problem in Computer-Aided Process Planning. ***Journal of Manufacturing Systems 8***(1), 17-26.

[187] J.F. Bard (1988). A Heuristic for Minimizing the Number of Switches on a Flexible Machine. ***IIE Transactions 20***(4), 382-391.

[188] J.F. Bard (1988). Short-Term Scheduling of Thermal-Electric Generators Using Lagrangian Relaxation. ***Operations Research 36***(5), 756-766.

[189] J.F. Bard (1988). Convex Two-Level Optimization. ***Mathematical Programming 40*** 15-27.

[190] J.F. Bard, R. Balachandra and P.E. Kaufmann (1988). An Interactive Approach to R&D Project Selection and Termination. ***IEEE Transactions on Engineering Management EM-35***(3), 139-146.

[191] J.W. Barnes, R. Hanley and J.F. Bard (1988). Scheduling Tactical Aircrews to Meet Flying Requirements. ***Journal of Logistics 12***(4), 25-32.

[192] J.F. Bard (1987). Developing Competitive Strategies for Buyer-Supplier Negotiations. ***Management Science 33***(9), 1181-1191.

[193] J.F. Bard and I.G. Cunningham (1987). Improving Through-Flight Schedules. ***IIE Transactions 19***(3), 242-251.

[194] J.F. Bard (1986). A Multiobjective Methodology for Selecting Subsystem Automation Options. ***Management Science 32***(12), 1628-1641.

[195] J.F. Bard (1986). Evaluating Space Station Applications of Automation and Robotics. ***IEEE Trans. Engineering Management EM-33***(2), 102-111.

[196] J.F. Bard (1986). An Assessment of Industrial Robots: Capabilities, Economics, and Impacts. ***Journal of Operations Management 6***(2), 99-124.

[197] J.F. Bard (1985-86). A Reliability Analysis of Occupational Exposure Data Using a Family of Proportional and Additive Hazard Functions. ***J. Environmental Systems 15***(4), 293-306.

[198] J.F. Bard and S. Chatterjee (1985). Objective Function Bounds for the Inexact Linear Programming Problem with Generalized Cost Coefficients. ***Computers & Operations Research 12***(5), 483-491.

[199] J.F. Bard (1985). Parallel Funding of R&D Tasks with Probabilistic Outcomes. ***Management Science 31***(7), 814-828.

[200] J.F. Bard (1985). Algorithmic and Geometric Developments for a Hierarchical Planning Problem. ***European Journal of Operational Research 19***(3), 372-383.

[201] S. Chatterjee and J.F. Bard (1985). A Comparison of Box-Jenkins Time Series Models with Auto-Regressive Processes. ***IEEE Trans. Systems, Man, and Cybernetics SMC-15***(2), 252-259.

[202] J.F. Bard (1984). An Investigation of the Linear Three Level Programming Problem. ***IEEE Trans. Systems, Man, and Cybernetics SMC-14***(5), 711-717.

[203] J.F. Bard (1984). Optimality Conditions for the Bilevel Programming Problem. ***Naval Research Logistics Quarterly 31*** 13-26.

[204] J.F. Bard (1984). The Costs and Benefits of a Satellite-Based System for Natural Resource Management. ***Socio-Economic Planning Sciences 18***(1), 15-24.

[205] J.F. Bard (1984). Inexact Linear Programming with Generalized Technological Matrix Sets. ***European Journal of Operational Research 16***(1), 107-112.

[206] J.F. Bard (1983-84). Regulating Nonnuclear Industrial Wastes by Hazard Classification. ***Journal of Environmental Systems 13***(1), 21-41.

[207] J.F. Bard (1983). An Efficient Point Algorithm for a Linear Two-Stage Optimization Problem. ***Operations Research 31***(4), 670-684.

[208] J.F. Bard (1983). Coordination of a Multidivisional Firm Through Two Levels of Management. ***Omega 11***(5), 457-465.

[209] J.F. Bard (1983). An Algorithm for Solving the General Bilevel Programming Problem. ***Mathematics of Operations Research 8***(2), 260-272.

[210] J.F. Bard and A. Watkins (1983). Improved Rangeland Management with an Earth Resource Survey System. ***Technological Forecasting and Social Change 24***(4), 313-329.

[211] J.F. Bard (1983). The Application of a Remote Data Acquisition System to Livestock Management: Benefit Estimation. ***Socio-Economic Planning Sciences 17***(2), 49-56.

[212] J.F. Bard and J.E. Falk (1982). A Separable Programming Approach to the Linear Complementarity Problem. ***Computers & Operations Research 9***(2), 153-159.

[213] J.F. Bard and J.E. Falk (1982). An Explicit Solution to the Multi-Level Programming Problem. ***Computers & Operations Research 9***(1), 77-100.

[214] J.F. Bard (1981). An Analytic Model of the Reaction Time of a Naval Platform. ***IEEE Trans. Systems, Man, and Cybernetics SMC-11***(10), 723-726.

[215] J.F. Bard and J.E. Falk (1980). Computing Equilibria Via Nonconvex Programming. ***Naval Research Logistics Quarterly 27*** 233-255.

[216] J.F. Bard (1979-80). A Decision Model for the Regulation of Hazardous Wastes. ***Journal of Environmental Systems 9***(4), 235-248.

[217] J.F. Bard (1978). The Use of Simulation in Criminal Justice Policy Analysis. ***Journal of Criminal Justice 6***(2), 99-116.

[218] J.F. Bard (1978). A Criminal Justice Model for Policy Analysis. ***IEEE Trans. Systems, Man, and Cybernetics SMC-8***(3), 208-214.

[219] J.F. Bard (1978). A Systems Dynamics Evaluation of Alternative Crime Control Policies. ***Justice System Journal 3/3***, 242-263.

PROCEEDINGS

[220] D.J. Morrice J.F. Bard, H. Mehta, S. Sahoo, N.B. Arunachalam and P. Benkatraman (2018). Using Simulation to Design a WorkLife Integrated Practice Unit. ***Proceedings of the 2018 Winter Simulation***

Conference. M. Rabe, A.A. Juan, N. Mustafee, A. Skoogh, S. Jain, and B. Johansson (eds.), pp. 2624-2635, Gothenburg, Sweden.

[221] D.J. Morrice, D. Wang, J.F. Bard, L. Leykum, S. Noorily and P. Veerapaneni (2013). A Simulation Analysis of a Patient-Centered Surgical Home to Improve Outpatient Surgical Processes of Care and Outcomes. ***Proceedings of the 2013 Winter Simulation Conference***. R. Pasupathy, S.-H. Kim, A. Tolk, R. Hill and M. E. Kuhl (eds), pp. 2274-2286, Washington, D.C.

[222] S.K. Monkman, D.J. Morrice and J.F. Bard (2005). Scheduling Product Families in a High Volume, Flexible, Assemble-to-Order Factory. ***Proceedings of the 2nd Multidisciplinary International Conference on Scheduling: Theory & Applications***, G. Kendall, L. Lei and M. Pinedo (eds.), 394-395, New York.

[223] J.F. Bard and H.W. Purnomo (2004). Real-Time Scheduling for Nurses in Response to Demand Fluctuations and Personnel Shortages. M.A. Trick and E.K. Burke (editors) ***Proceedings of the 5th International Conference on the Practice and Theory of Automated Timetabling***, 67-87, Pittsburgh.

[224] J.F. Bard (2004). Midterm and Short-term Personnel Scheduling in Healthcare Facilities. ***Proceedings of the NSF Design, Service and Manufacturing Grantees and Research Conference***, http://engr.smu.edu/nsf2004/ Dallas, TX.

[225] J.F. Bard (2003). Modeling and Analysis of Staff Scheduling in a High Volume Work Center. ***Proceedings of the NSF Design, Service and Manufacturing Grantees and Research Conference***, http://bama.ua.edu/~nsf2003/ Birmingham, AL.

[226] S. Dempe and J.F. Bard (2000). A Bundle Trust Region Algorithm for Bilinear Bilevel Programming. K. Inderfurth et al. (editors), ***Proceedings of the Magdeburg Symposium on Operations Research***, 7-12, Springer Verlag, Berlin.

[227] J.F. Bard, M.F. Arguello and G. Yu (1998). Real-Time Rescheduling of Aircraft due to Equipment Failures and Delays. ***Proceedings of the Triennial Symposium on Transportation Analysis (TRISTAN III) 1***, 17 - 20, San Juan, Puerto Rico.

[228] J.F. Bard, T.A. Feo and S.D. Holland (1995). Design of A Decision Support System for Printed Wiring Board Assembly. ***Proceedings of the 13th International Conference on Production Research***, 652-654, Jerusalem, Israel.

[229] J.F. Bard, A.I.Z. Jarrah and A.H. deSilva (1992). A Hierarchical Approach to Equipment Selection and Scheduling at a General Mail Facility. ***Proceedings of the 5th USPS Advanced Technology Conference 1***, 137-151, Washington, D.C. (Invited Paper).

[230] J.F. Bard and B. Golany (1991). Optimal Kanban Policies for Production and Inventory Control. ***Proceedings of the 11th International Conference on Production Research 1***, 193-196, Hefei, China.

[231] J.F. Bard, A.H, deSilva and T.A. Feo (1990). Optimally Configuring General Mail Facilities. ***Proceedings of the 4th USPS Advanced Technology Conference 3***, 1381-1391, Washington, D.C. (Invited Paper).

[232] J.F. Bard and M. Wambsganss (1989). A Matching-Based Interactive Method for MCDM. ***Proceedings of the International Conference on Multiple Criteria Decision Making: Applications in Industry and Service***, 963-978, Asian Institute of Technology, Bangkok.

[233] J.F. Bard (1987). Optimizing Short-Term Electrical Power Distribution. ***Proceedings of the International Industrial Engineering Conference***, 511-515, Washington, D.C.

[234] J.F. Bard and J.E. Falk (1982). Necessary and Sufficient Conditions for the Linear Three Level Programming Problem. ***Proceedings of the 21th IEEE Conference on Decision and Control 2***, 642-646, Orlando (Invited Paper).

[235] J.F. Bard (1982). A Grid Search Algorithm for the Linear Bilevel Programming Problem. ***Proceedings of the 14th Annual Meeting of the American Institute for Decision Sciences 2***, 256-258, San Francisco.

[236] J.F. Bard (1982). Optimization in Multilevel Systems. ***Proceedings of the American Control Conference 1***, 403-408, Arlington (Invited Paper).

[237] J.F. Bard (1981). Analyzing the Hazardous Waste Problem from a Government Perspective. ***Proceedings of the National Council for Air and Stream Improvement Conference***, 197-203, Boston (Invited Paper).

[238] J.F. Bard (1981). An Engagement Effectiveness Model for Surface Ships. ***Proceedings of the Winter Simulation Conference 1,*** 83-88, Atlanta.

[239] J.F. Bard (1981). Hierarchical Planning in a Decentralized Organization. ***Proceedings of the 13th Annual Meeting of the American Institute for Decision Sciences 2****,* 124-126, Boston.

[240] J.F. Bard (1977). Criminal Justice Dynamics: A Planning Model. ***Proceedings of the Winter Simulation Conference 1****,* 258-268, Gaithersburg.

PAPERS IN REVIEW

[241] L.C. Riascos-Alvarez, R.Z. Rios-Mercado and J.F. Bard (2019). New Formulations and Algorithms for the Kidney Exchange Problem, Working paper, Universidad Autónoma de Nuevo Leon, Mo San Nicolas de los Garza, Mexico.

[242] Y. Ding, J.F. Bard (2023). Long-term Workforce Planning for Home Healthcare. Working paper, Graduate Program in Operations Research & Industrial Engineering, University of Texas, Austin.

[243] Y. Ding, D.J. Morrice, J.F. Bard (2023). Production Planning for Flexible Assembly Systems in the Face of Supply Chain Delays and Labor Shortages. Working paper, Graduate Program in Operations Research & Industrial Engineering, University of Texas, Austin.

[244] J. Lyu, J.F. Bard (2023). Weekly Crew Scheduling for Freight Rail Engineers: A Network Approach. Submitted to ***Transportation Research Part C***.

[245] C. Bauerhenne, J.F. Bard, R. Kolisch (2023). Robot Routing and Scheduling of Home Healthcare Workers: A Nested Branch-and-Price Approach. Working paper, Technical University of Munich, Munich, Germany.

BOOK REVIEWS

[246] ***Lean Logistics: The Nuts and Bolts of Delivering Materials and Goods*** by Michel Baudin, Productivity Press, New York (2005). Appearing in *IIE Transactions on Operations Engineering 38*(9), 2006.

[247] ***Introduction to Linear Optimization*** by D. Bertsimas and J. N. Tsitsiklis, Athena Scientific, Belmont, MA (1997). Appearing in *Interfaces 30*(4), 2000.

[248] ***Integer Programming*** by L.A. Wolsey, John Wiley & Sons, New York (1998). Appearing in *IIE Transactions on Operations Engineering 32*(3), 2000.

[249] ***The Engineer's Cost Handbook: Tools for Managing Project Costs*** by R.E. Westney (editor), Marcel Dekker, New York (1997). Appearing in *IIE Transactions on Operations Engineering 30*(3),1998.

[250] ***Mathematical Programming for Industrial Engineers*** edited by M. Avriel and B. Golany, Marcel Dekker, New York (1996). Appearing in *IIE Transactions on Operations Engineering 29*(9), 1997.

[251] ***Engineering Optimization: Theory and Practice***, Third Edition, by S. S. Rao John Wiley & Sons, New York (1996). Appearing in *IIE Transactions on Operations Engineering 29*(9), 1997.

[252] ***Introduction to the Theory of Nonlinear Programming*** by J. Jahn, Springer-Verlag, Berlin (1994). Appearing in *Interfaces 26*(3), 1996.

[253] ***Perturbation Theory in Mathematical Programming and its Applications*** by E. S. Levitin, John Wiley & Sons, New York (1994). Appearing in *IIE Transactions on IE Research 28*(1), 1996.

[254] ***Heuristic Scheduling Systems*** by T.E. Morton and D.W. Pentico, John Wiley & Sons, New York(1993). Appearing in *IEEE Transactions on Engineering Management 42*(4), 1995.

[255] ***The Analytic Hierarchy Process: Applications and Studies*** by B.L. Golden, E. Wasil and P.T. Harker (editors), Springer-Verlag, Berlin (1989). Appearing in *Interfaces 21*(2), 1991.

[256] ***Project Management: Strategic Design and Implementation*** by David I. Cleland, TAB Books, Blue Ridge Summit, PA (1990). Appearing in *IEEE Transactions on Engineering Management 38*(2), 1991.

[257] ***Managerial Decisions Under Uncertainty: An Introduction to the Analysis of Decision Making*** by Bruce F. Baird, John Wiley & Sons, New York (1989). Appearing in *IEEE Transactions on Engineering Management 38*(1), 1991.

[258] ***Integer and Combinatorial Optimization*** by G.L. Nemhauser and L.A. Wolsey, John Wiley & Sons, New York (1988). Appearing in *IIE Transactions 20*(4), 1988.

[259] ***Multiple Criteria Decision Methods and Applications*** by G. Fandel and J. Spronk (eds.), Springer-Verlag, Berlin (1985). Appearing in *Interfaces 18*(4), 1988.

[260] ***Techniques for Multiobjective Decision Making in Systems Management*** by F. Szidarovszky, M.E. Gershon, and L. Duckstein, Elsevier Science Publishers, Amsterdam (1986). Appearing in *Interfaces 18*(2), 1988.

[261] ***Linear Programming*** by K.G. Murty, John Wiley & Sons, New York (1983). Appearing in *Interfaces 15*(5), 1985.

[262] ***Quantitative Models For Management*** by K.R. Davis and P.G. McKeown, Kent Publishing Co. (1981). Appearing in *Interfaces 15*(3), 1985.

[263] ***Management Science Applications: Computing and Systems Analysis*** by H.K. Eldin with H.M. Beheshti, North-Holland, Amsterdam (1981). Appearing in *Interfaces 13*(5), 1983.

[264] ***Decision Models For Management*** by J. Byrd, Jr. and L.T. Moore, McGraw-Hill, New York (1982). Appearing in *Interfaces 13*(5), 1983.

ARTICLES

[265] C.-Y. Lee, J.F. Bard, M. Pinedo and W.E. Wilhelm (1993). Guidelines for Reporting Computational Results in *IIE Transactions*. ***IIE Transactions 25***(6), 121-123.

[266] T.A. Feo, J.F. Bard and S.D. Holland (1993). A Decision Support System for Scheduling PCB Assembly at Texas Instruments. ***IIE Operations Research Division Newsletter*** Vol. XXVIII, No. 1 (Fall).

EDITED VOLUMES

[267] J.F. Bard and C. Barnhart (2006). Planning and Scheduling Problems in Airline Operations. Special Issue of the ***Journal of Scheduling 9***(3), 199-201.

[268] D.P. Morton and J.F. Bard (2013). Special Issue on the Use of Microcomputers in the Classroom Dedicated to the Memory of Paul A. Jensen. ***INFORMS Transactions on Education 14***(1), 1-3.

TEACHING MATERIAL

[269] Instructor's Manual (2005), ***Project Management: Processes, Methodologies, and Economics***, Prentice Hall, Upper Saddle River, NJ.

[270] Video and Notebook for 15-week Online Course (2004): ***Operations Research Models***, National Technological Institute, Baltimore, MD.

[271] Instructor's Manual (2003), ***Operations Research: Models and Method*s**, John Wiley & Sons, New York.

[272] Instructor's Manual (1994), ***Project Management: Engineering, Technology, and Implementation***, Prentice Hall, Englewood Cliffs, NJ.

INVITED LECTURES

Scheduling and Routing Home Healthcare Workers, *Care Systems, Inc.*, Rockville, MD (January 2024).

Restricting Air Traffic Controller Schedules to 40 hours per Week, *Federal Aviation Administration* (December 2023).

Providing an Improved Work-Life Balance for Railway Engineers, *University of Texas,* Dallas, TX (November 2023).

Data-driven Approach to Scheduling Freight Engineers, *Union Pacific Railroad*, Omaha, NE (May 2023).

Inventory Management in a Low Volume Factory, Applied Materials, Inc., Austin, TX (June 2023).

Multi-machine Setups for Semiconductor Assembly and Test, *Global Meeting on Industrial and Manufacturing Engineering*, online (June 2023).

Developing Weekly Schedules for Railroad Engineers and Trainmen, Planmatics, Inc., Rockville, MD (July 12 2022).

Improving Warehouse Logistics and Storage Alibaba, online (January 2022)

Managing Security Personnel at Airports, Planmatics, Inc., Rockville, MD (August 2021).

Multi-machine Setups for Semiconductor Assembly and Test, Global Meeting on Industrial and Manufacturing Engineering, online (December 2020).

Discrete Convexity Results for Scheduling In-clinic and Virtual Medicine Patients in an Integrated Practice Unit, *2020 POMS Annual Conference,* Minneapolis, MN (April 2020).

The Costs of Transportation Barriers for Economically Disadvantaged Patients at a Family Health Center, *University Hospital System*, San Antonio (September 2019).

History of Operations Research and Supply Chains, *Alibaba*, Hangzhou, China (August 2019).

Application of Operations Research in Supply Chain Management, *Alibaba*, Hangzhou, China (August 2019).

Investigation of Transportation Options for Economically Disadvantaged Patients at the Family Health Center, *University Hospital System*, San Antonio (May 2019).

Monthly Assignment of Clinic Duty to Internal Medicine Residents, *The Technical University of Munich*, Munich, Germany (August 2018).

Internal Mail Transport at Mail Processing & Distribution Centers, *Annual Industrial & Systems Engineering Research Conference*, **Best Paper Award**, Orlando, FL (May 2018).

4+1 Annual Block Scheduling, *INFORMS Computing Society Conference*, Austin, TX (January 2017).

Monthly Clinic Assignments for Internal Medicine Residents. Department of Industrial & Systems Engineering, North Carolina State University, Raleigh, NC (February 2016).

Scheduling Internal Medicine Residents for Monthly Clinic Duty. Department of Industrial & Systems Engineering, Pennsylvania State University, State College, PA (April 2015).

An Investigation of Operations at an Outpatient Clinic, Wright State University, **Kettering Distinguished Lecture**, Dayton, OH (November 2014).

Planning and Scheduling for Healthcare Workers, *CLAIO XVII/CSMIO III*, **Plenary Speaker**, Monterrey, Mexico (October 2014).

Weekly Planning for Home Healthcare Delivery, Technical University of Munich, Germany (June 2014).

Monthly Clinic Assignments for Residents, The George Washington University, Washington, DC (May 2014).

Clinic Scheduling for Internal Medicine Housestaff, University of Houston, Houston, TX (February 2014).

Improving Healthcare Delivery Through University-Industry Collaboration, *IEEE Communications & Signal Processing Society Annual Meeting*, Austin, TX (December 2013).

Optimizing Healthcare Worker Schedules, *University of Texas Systems Engineering Healthcare Conference*, Houston, TX (November 2013).

Staff Scheduling, Value Stream Mapping & Process Improvement at Care Institutions, *Health Technology Forum*, Austin, TX (October 2013).

Implementing a Patient-Centered Surgical Home to Improve Out-Patient Surgical Processes of Care and Outcomes, *McCombs Healthcare Initiative Symposium*, Austin, TX (April 2013).

Designing Driver Work Areas for Pickup & Delivery Operations, HEC, University of Montreal, Montreal, Canada (December 2012).

An Integer Programming Model for Nurse Scheduling in Operating Room Suites, *UT Systems Engineering Conference*, MD Anderson, Houston, TX (October 2012).

Weekly Routing and Scheduling of Home Healthcare Workers, University of Houston, Houston, TX (February 2012).

Designing Pickup and Delivery Routes in a Local Service Area, Guangxi University of Technology, Liuzhou, China (December 2010).

Flight Schedule Reoptimzation after Groundings & Delays, Guangdong University of Technology, Guangzhou, China (December 2010).

Creating Vehicle Routing Zones for Pickup & Delivery Carriers, *Transportation & Logistics Workshop*, The Complex Engineering Systems Institute, **Plenary Speaker**, Renaca, Chile (December 2009).

Solving Large-Scale Integer Programs with Column Generation, Technical University of Munich, Germany (July 2009).

Using Branch and Price to Solve the Midterm Physician Scheduling Problem, *EURO XXIII*, Bonn, Germany (July 2009).

Mid-term Scheduling of Physicians in Hospitals. *POMS Conference*, Orlando, FL (May 2009).

Work Area Design for Local Pickup & Delivery Operations. Northwestern University, Evanston, IL (November 2008).

Perspective on Issues and Problems in Health Systems Engineering: Opportunities for Operations Research & Industrial Engineering. North Carolina State University, Raleigh (April 2008).

Using Branch and Cut to Solve the Vehicle Routing Problems with Time Windows. Royal Institute of Technology, Stockholm (June 2007).

Cyclic Nurse Scheduling Using a Bundle Method. Linköping University, Linköping, Sweden (June 2007).

Solving Large-Scale Staff Scheduling Problems with Column Generation. *International Workshop on Optimization (IWOS2005)*, Shanghai (May 2005).

Heuristics and Exact Methods for Vehicle Routing Problems with Time Windows. Nankai University, Tianjin, China (May 2005).

Daily Adjustments to Staff Schedules Using Branch and Price: A Nurse Management Application. Department of Industrial Engineering and Engineering Management, Hong Kong University of Science and Technology, Hong Kong (May 2005).

Personnel Planning and Scheduling in the Service Industry. *Annual IIE Conference*, Atlanta (May 2005).

Optimizing Aircraft Routings in Response to Groundings and Delays. *Annual IIE Conference*, **Best Paper**, Portland (May 2003).

Solving Vehicle Routing Problems with Time Windows Using Branch and Cut. Universidad Autónoma de Nuevo León, Monterrey, Mexico (March 2003).

From Model Development to Implementation: Increasing the Chances for Success. *12th Annual Industrial Engineering and Management Conference*, **Keynote Speaker**, Tel Aviv, Israel (March 2002).

Using OPL Studio to Implement a Staffing Algorithm for the Service Industry. Office of Technology, US Department of Transportation (July 2000).

Algorithms for Rescheduling Aircraft Due to Flight Disruptions. University of Arizona, Tucson (November 1998).

Solution Procedures for a Class of Routing Problem. Texas A&M University, College Station (February 1998).

Implementing a Branch and Cut Algorithm for the Vehicle Routing Problem with Time Windows. Center for Operations Research and Econometrics, Louvain-la-Neuve, Belgium (March 1996).

Designing Long Distance Telecommunications Networks. Royal Institute of Technology, Stockholm, Sweden (June 1995).

The Use of Simulation Methodologies to Design Mail Processing Facilities. Ministry for Posts and Telecommunications. Tokyo, Japan (June 1994).

Production Planning and Decision Support for Printed Wiring Board Assembly. Center for Economic Research, Tilberg University, The Netherlands (May 1994).

Heuristics and Exact Methods for the Vehicle Routing Problem. Department of Economics, Free University of Berlin, Germany (April 1994).

Sequencing Mixed-Model Assembly Lines to Maximize System Performance. College of Engineering, École Centrale de Lille, France (March 1994).

Reengineering and Production Planning for Electronic Assembly. Workshop on Mathematical Models of Organizational Design, European Institute of Advanced Studies in Management, Brussels, Belgium (March 1994).

Personnel Scheduling in Service Organizations. School of Management, Erasmus University, Rotterdam, The Netherlands (March 1993).

Using Decomposition to Solve the Tour Scheduling Problem. *3rd Stockholm Optimizations Days*, **Keynote Speaker** (July 1992).

Machine Scheduling in General Mail Facilities. Decision Sciences Department, College of Business Administration, University of Arizona, Tucson (February 1992).

Some Theoretical and Algorithmic Results for Sequencing Mixed Model Assembly Lines. *Optimization Days*, University of Montréal, Quebec, Canada (May 1992).

Modeling and Analysis of Mail Processing Facilities. U.S. Postal Service, Headquarters, Washington, D.C. (December 1991).

Network Design for Resellers of Long Distance Services. San Marcos Telephone Company, San Marcos, TX (April 1991).

Optimally Configuring General Mail Facilities. *Fourth USPS Advanced Technology Conference*, Washington, D.C. (November 1990).

Algorithms for Mixed Integer Linear Programming. Technion, Israel Institute of Technology, Faculty of Industrial Engineering and Management, Haifa (April 1990).

Equipment Selection and Machine Scheduling for Mail Processing. Department of Industrial Engineering, Tel Aviv University, Ramat Aviv, Israel (November 1989).

Use of Multicriteria Methods for Evaluating Advanced Technologies. Johnson Space Center, NASA, Houston (June 1989).

Convex and Linear Bilevel Programming. *Optimization Days*, University of Montréal, Quebec, Canada (May 1989).

Decomposition Techniques for Short-Term Scheduling of Electric Power Generators. Department of Industrial Engineering, Texas A&M University, College Station (October 1988).

Recent Developments in Mixed Integer Linear Programming. Department of Operations Research, University or North Carolina, Chapel Hill (March 1987).

FUNDED RESEARCH

1. Portfolio Optimization with Fixed Production Profiles, *ExxonMobil*, $450,000 (2022-25)
2. Warehouse Logistics and the Partial Transition from Manual to Robotic Operations. *Applied Materials*, $45,000 (2022-23).
3. Data Analysis and Simulation of Patient Scheduling in Specialized Clinics. *MD Anderson Cancer Center*, $5000 (2022).
4. Simulation Modeling of Polisher and Cleaner Assembly in the face of Supply Chain Delays and Labor Shortages. *Applied Materials*, $45,000 (2021-22).
5. Accounting for Uncertainty in Irregular Airline Operations. *General Electric Aviation*, $25,000 (2020-21).
6. Using Statistical Analysis to Evaluate the Effectiveness of Online Advertising, ShopLC, $4,400 (2019-20).
7. An Exploration of Transportation Options for Family Health Center Patients, *UT Health Science Center-San Antonio*, $18,155 (2019)
8. Energy Market Dynamic Modeling, *ExxonMobil*, $619,508 (2018-22).
9. An Investigate of Block Scheduling for Operating Rooms, *Ascension Health*, $10,000 (2018).
10. Collaboration on Weekly and Daily Scheduling of Home Healthcare Workers, *AccentCare*, $81,386 (2017-18).
11. Designing Integrated Practice Units for Outpatient Care, *Texas Health Catalyst,* $40,000 (2016-17).
12. Smoothing Inventory and Lost Sales in Long-term Planning, *Texas Instruments,* $80,000 (2016-17)
13. Geographically Localizing Patients Medical Ward Patients, *The University of Texas Health Science Center, San Antonio*, $17,000 (2016).
14. Planning Supply Chain Target Levels at Assembly & Test Facilities, *Texas Instruments,* $80,000 (2015-16).
15. High Performance Computer Systems Acquisition Planning, Boeing, $10,000 (2015)
16. Forecasting Sales In and Sales Out, AMD, $10,000 (2014).
17. Improvement in Delivery Time at Rasharon Inspection Facility Using Group Technology, *Schlumberjer*, $8,000 (2014).
18. Implementing a Patient-Centered Surgical Home to Improve Surgical Processes of Care and Outcomes, *University of Texas System*, $280,000 (2012-15).
19. Optimizing Housestaff Schedules and Patient Access in Primary Care Teaching Clinics, *University of Texas System*, $280,000 (2012-15).
20. Improving Patient Flow and Resource Utilization in the Emergency Department, *University of Texas System*, $310,000 (2012-15).
21. A Tool for Determining Daily Wafer Movement to Meet Production Targets, *Texas Instruments*, $320,000 (2007-15).
22. Model Development for Annual Physician Scheduling, *Care Systems*, $70,510 (2006-08).
23. Product Pricing and Revenue Management, *Zilliant*, $48,240 (2006-08).
24. Flowshop Productivity Improvement, *Heraeus*, $9,780 (2006).
25. The Design and Development of a Patient Acuity Measurement System, *Care Systems*, $55,000 (2004-07).
26. Nurse Scheduling and Management, *Care Systems*, $80,000 (2002-05).
27. Rescheduling Healthcare Workers in Response to Daily Changes in Demand, *Planmatics*, $185,500 (2002-05).
28. Integrated Personnel Scheduling in the Service Industry, *National Science Foundation*, $109,568 (2002-04).
29. A Decision Support System for Staffing Processing and Distribution Centers, *Planmatics*, $340,200 (2000-03).
30. Scheduling Crew for Training in the Airline Industry, *Caleb Technologies*, $80,000 (2000-01).
31. Airline Response to Hub Closures, *Caleb Technologies*, $110,000 (1997-98).

32. Real-Time Scheduling of Airlines Operations, *American Airlines*, $20,000 (1997-98).
33. Interior Point Methods: Theory and Algorithms, *Texas Advanced Research Program*, $74,200 (1996-98).
34. Evaluation of Simulation Software Packages for Modeling Mail Processing Centers, *Planmatics Inc*, $80,000 (1994-96).
35. Algorithmic Development for a Bilevel Programming Model to Compare Biomass Chains, *Institut National de la Recherche Agronomique*, French Ministry of Agriculture, $14,500 (1994-95).
36. Computational Methods for Designing Semiconductor Manufacturing Facilities, *AT&T Foundation*, $26,000 (1993-94).
37. Design and Operations of Semiconductor Manufacturing Facilities, *AT&T Foundation*, $24,500 (1992-93).
38. An Integrated Decision Support System for Flexible Manufacturing, *Texas Advanced Technology Program*, $122,520 (1992-94).
39. Arc Elimination in Probabilistic Networks Using Stochastic Dominance, *Texas Advanced Research Program*, $47,280 (1992-94).
40. Kanban Control of JIT Manufacturing Systems, *Bureau of Engineering Research*, $55,000 (1991-92).
41. Optimally Scheduling Transport and Delivery Vehicles with Time Window Constraints, *Cray Research*, $29,500 (1991-92).
42. Solving Large Scale Scheduling Problems on an IBM ES/9000, *IBM*, $10,000 (1991).
43. Time Axis Decomposition of Large Scale Optimal Control Problems, *Texas Advanced Research Program*, $44,630 (1989-91).
44. Heuristics for Job Shop Scheduling in a Real Time Environment, *Texas Instruments*, $150,000 (1990-91).
45. Scheduling Printed Circuit Board Assembly Operations, *Texas Instruments*, $129,800 (1988-89).
46. Analysis of Jet Engine Remanufacturing Facilities, *Kelly Air Force Base*, $68,000 (1988-89).
47. Designing and Evaluating Automation and Robotics Technologies for Space Systems, *The National Aeronautics and Space Administration*, $48,913 (1988-89).
48. Analysis of Flexible Manufacturing Systems, *Bureau of Engineering Research*, $21,000 (1987).
49. Generalized Scheduling of Power Systems, *University Research Institute*, $11,700 (1986).
50. Tool Assignment Algorithms for Flexible Machines, *Sun Oil Grant*, $19,000 (1986).
51. Large Stochastic Network Codes for the PC, *Project QUEST*, $11,000 (1985-86).
52. Modeling of R&D Task Selection on a Stochastic Network, *Bureau of Engineering Research*, $35,000 (1984-86).
53. Multilevel Programming, *National Science Foundation*, $83,000 (1980-83).
54. Regulating Nonnuclear Industrial Wastes using Hazard Classification Schemes, *The Office of Technology Assessment*, $96,000 (1983).
55. An Extended Risk-Benefit Analysis of the Hazardous Waste Control Problem, *Northeastern University, College of Business Administration*, $4500 (1983).
56. The Development of an Analytic Framework for Comparing Alternative Hazardous Classification Schemes, *Northeastern University, College of Business Administration*, $4000 (1982).
57. Inexact Linear Programming with Generalized Technological Matrix Sets, *The University of Massachusetts, College of Management and Professional Studies*, $4200 (1981).
58. The Hierarchical Equilibrium Problem, *The University of Massachusetts, Faculty Development Office*, $4000 (1980).
59. The Application of Optimization Techniques to Energy and Environmental Problems, *The Aerospace Corporation*, $48,000; principal investigator (1977-79).
60. An Evaluation of a Local Criminal Justice System, *The Law Enforcement Assistance Administration*, $90,000; program manager and principal investigator at The Aerospace Corporation (1975-76).

61. Economic and Decision Models for the Regulation of Hazardous Wastes, *The U.S. Environmental Protection Agency*, $280,000; principal investigator at Booz, Allen & Hamilton (1975).
62. Cost/Benefit Analysis of the Earth Resources Technology Satellite, *The U.S. Department of Interior*, $675,000; program manager at Booz, Allen & Hamilton (1974-75).
63. Design and Analysis of Surface-Effect-Ships, *Office of Naval Research*, $275,000; principal investigator at Booz, Allen & Hamilton (1973-74).

TEACHING RECORD

Course	Text and Author
Production and Inventory Control	*Production and Operations Analysis*, Nahmias
Project Management	*Project Management: Engineering, Technology, and Implementation*, Shtub, Bard, and Globerson
Linear Programming	*Linear Optimization,* Bertsimas and Tsitsiklis
Integer Programming	*Integer Programming*, Wolsey
Nonlinear Programming	*Introduction to Linear and Nonlinear Programming*, Luenberger
Dynamic Programming	*The Art and Theory of Dynamic Programming*, Dreyfus and Law
Algorithms for Mixed Integer Programming	*Integer and Combinatorial Optimization*, Nemhauser and Wolsey
Healthcare Delivery Models	*Notes and journal articles*
Reliability Theory	*Reliability in Engineering Design*, Kapur and Lamberson
Multicriteria Decision Making	*Multiobjective Decision Analysis withEngineering and Business Applications*, Goicoechea, Hansen, and Duckstein
Operations Research I & II	*Operations Research: Models and Methods*, Jensen and Bard
Operations Management I & II	*Operations Management*, Chase and Aquilano
Engineering Economics	*Engineering Economic Analysis*, Newnan
Basic Industrial Engineering	*Design and Engineering of the Production System*, Azadivar
Production Engineering Management	*Production and Operations Analysis*, Nahmias
Management Information Systems	*Introduction to Management Information Systems*, Murdock
Simulation	*Systems Simulation*, Gordon
Systems Analysis	*Principles of Systems*, Forrester

RECENT UNIVERSITY AND PROFESSIONAL SERVICE

University Service

Member, Organizing Committee for Austin Health Futures Conference, 2019-2020.

Member, UT System-wide Steering Committee on Healthcare Improvement, University of Texas, 2011 - present.

Co-op Advisor, Mechanical Engineering, 2019 – present.

Member, UT Organizing Committee for Symposium on Innovation in Healthcare Delivery Systems, 2012 - 2017

Associate Director, Center for the Management of Operations and Logistics, 2001– 2014

Area Coordinator, Operations Research & Industrial Engineering (ORIE) Group, 1997 – 2009

Assistant Graduate Advisor, ORIE Program, 1995 – present

Assistant Graduate Advisor, Manufacturing Systems Engineering (MFG) Program, 1993 – 2008

Co-chair, Faculty Rules Committee, The University of Texas, 2008 – 2011.

Member, Supervisory Committee for the MS Program in Science & Technology Commercialization, 1994 – 1997

Member, Parking & Transportation Committee, 1995 – 1997

Member, Graduate Curriculum Committee, MFG Program, 1987 – 2002

Member, Graduate Student Recruitment Committee, 1994 – 1997

Member, Space Usage Committee, 1994 – 2016

Minority Liaison Officer, MFG Program, 1994 – present

Graduate Advisor, MFG Program, 1986 – 1994

Boards, Review Committees, and Panels

Steering Committee, Robert B. Green Healthcare Facility, University Hospital, San Antonio, 2018 – present

Board of Directors, Institute for Operations Research and the Management Sciences, 2014 – 2018

Review Committee, Urban Search Venture, Lawrence Livermore National Laboratory, June 2015

Panel on Future Research Needs in Workforce Engineering, INFORMS fall meeting, Seattle, November 2007

Engineering Research Centers for Design, Optimization, Manufacturing and Fabrication Systems Proposal Panel, National Science Foundation, January 2005

Board of Directors, Care Systems Inc, Rockville, MD, 2002 – present

Trustee, Institute of Industrial Engineers, Atlanta, GA, 2003 – 2015

Review Committee, Graduate Program in Industrial Engineering, The University of Minnesota, April 2002

Organizing Committee, M.S. Program in Engineering Management, The University of Texas, 2000 – 2001

Design, Manufacture, and Industrial Innovation (DMII) Proposal Panel, National Science Foundation, June 1999

Organizing Committee, M.S. Program in the Commercialization of Science and Technology, IC2, College of Business Administration, The University of Texas, 1998 – 2000

Professional Activities

Co-chair, Editor-in-Chief Search Committee for IISE Transactions on Healthcare Systems Engineering, 2019-2020.

Vice President for Publications, Institute for Operations Research and the Management Sciences, 2015 – 2018.

Cluster Chair for Integer Programming, INFORMS Computer Society Annual Conference, Austin, January 2017

Vice-chair, IFAC Technical Committee on Manufacturing Modelling for Management and Control, 2015 – present.

Member, INFORMS Meetings Committee, 2010 – 2016

Co-chair, First Annual UT Systems Engineering Healthcare Conference, October 2012

General Chair, INFORMS Annual Conference, Austin, November 2010.

Senior Vice President for Publications, Institute of Industrial Engineering, 2004 – 2006

Cluster Chair for Service Operations, IIE Research Conference, Houston, 2004

Chair, IIE Search Committee for Editor-in-Chief of IIE Transactions, 2004

Co-organizer for the 5th International Conference on the Practice and Theory of Automated Timetabling, Pittsburgh, 2004

Chair, IIE Committee to Update American Standard Terminology for Operations Research, 2003 – 2004

Cluster Chair for Bilevel Optimization, INFORMS Annual Conference, San Jose, October 2002

Cluster Chair for Bilevel Optimization, INFORMS Annual Conference, Miami, October 2001

Cluster Chair for TRISTAN IV, Azores Archipelago, Portugal, 2001

Cluster Chair for Integer Programming, INFORMS Annual Conference, San Antonio, November 2000

Session Chair for International Workshop on Discrete Optimization Methods in Scheduling and Computer-Aided Design, Minsk, Belarus, 2000

Cluster Chair for Bilevel Optimization, INFORMS Salt Lake City Meeting, October 2000

Member, Organizing Committee for Multicriteria Decision Making Conference, Istanbul, 2000

Member, Organizing Committee for the IFORS Beijing 1999 Conference

Program Chair, INFORMS Organizing Committee for the Dallas 97 International Meeting, October 1997

Chair, IIE Committee to Improve Refereeing Process, 1995 – 1997

Member, INFORMS Chapters Committee, 1992 – 1997

Cluster Chair for Routing Applications, INFORMS Annual Conference, San Diego, May 1997.

Chair, Production Planning Section, International Conference on Production Research, Jerusalem, Israel, August 6-10, 1995

Chair, Scheduling and Routing Section, INFORMS Annual Conference, Los Angeles, April 1995

North American Chairman, Organizing Committee for the 1995 International Conference on Production Research, 1995

Workshops and Continuing Education Courses

The Intersection of Operations Research and Supply Chains, Alibaba, Hangzhou, China, August 12-15, 2019.

Mid-term and Long-term Planning and Scheduling for Hospital Staff, Care Systems, Inc., Washington, DC, July 15-17, 2019.

Using Integer Programming Techniques to Solve Real World Planning and Scheduling Problems, Technical University of Munich, Germany, August 1-3, 2018.

Monthly and Annual Block Scheduling for Residents, Care Systems, Inc., Washington, DC, June 20-22, 2018.

Computational Techniques for Solving Integer Programs, Universidad Nacional del Sur, Bahia Blanca, Argentina, May 23 – June 14, 2015.

Project Management for Software Development, Planmatics, Inc., Washington, DC, May 20-21, 2015.

Methods for Solving Industrial Based Scheduling and Routing Problems, Universität Augsburg, Augsburg, Germany, June 3-24, 2014.

Applications of Lagrangian Relaxation, Benders Decomposition, and GRASP for Large Scale Integer Programming, Technische Universität München, Munich, Germany, June 6-30, 2014.

The Essence of Project Management, IC2 Institute, Austin, TX, August 20-21, 2009.

Exact and Heuristic Methods for Solving Large-Scale Integer Programs, Technische Universität München, Munich, Germany, July 23-24, 2009.

Use of Optimization for Equipment Scheduling and Staff Scheduling: An Application at the US Postal Service Mail Processing and Distribution Centers, Universidad Autónoma de Nuevo León, Monterrey, Mexico, March 12-14, 2003.

Use of Optimization to Schedule Service Industry Employees, German Post, Washington, DC, November 6-7, 2000.

Use of Data Envelopment Analysis for Measuring Retail Outlet Efficiency, Dutch Post, Washington, DC, May 15-16, 2000.

Project Management for Engineers, U.S. Postal Service, Washington, DC, May 26-27, 1999.

Evaluating Retail Outlets Using Data Envelopment Analysis, German Postal Service, Bethesda, MD, July 12-13, 1999.

Project Management for Engineers, U.S. Postal Service, Washington, DC, May 21-22, 1998.

Data Envelopment Analysis for Postal Service Evaluation, German Postal Service, Bethesda, MD, July 14-15, 1998.

Project Management for Engineers, U.S. Postal Service, Washington, DC, May 21-22, 1998.

Use of Data Envelopment Analysis for Assessing the Relative Efficiency of Retail Outlets, U.S. Postal Service, Washington, DC, July 28-29, 1997.

Project Management for Engineers, U.S. Postal Service, Washington, DC, June 5-6, 1997.

Project Management for Engineers, Catholic University of Louvain, Louvain-La-Neuve, Belgium, May 10-13, 1996.

Choosing the Right Simulation Software: Practical Solutions for Practitioners, *1997 Computer Simulation Conference*, Arlington, VA, July 13-15.

Mathematical Models and Solutions for Designing and Operating Postal Facilities, *The 5th USPS Advanced Technology Conference*, Washington, DC, Nov. 30 - Dec. 2, 1992.

Planning for the Cleanup of Uranium Mill Tailings, Colloquium on Superfund Implementation, US Department of Energy, Gaithersburg, MD, May 22, 1978.

RECENT PRESENTATIONS

Weekly Scheduling for Freight Rail Engineers & Trainmen, *51st International Conference on Computers and Industrial Engineering*, Sydney, Australia (December 2024).

A Stochastic Model for the Location and Sizing of Collection Points in Urban Solid Waste Management, *52 Jornadas Argentinas de Informática (JAIIO)*, Bahia Blanca, Argentina (August 2024).

Next Steps in Total Costs and Care Patterns of Musculoskeletal Care Through Tech-Enabled Modeling, *34th POMS Annual Conference*, Minneapolis, MN (April 2024).

Data-driven Warehouse Planning and Control under Stochastic Demand and Labor Supply in Semi-conductor Capital Equipment Manufacturing, *Winter Simulation Conference*, San Antonio, TX (December 2023).

Optimal Investment Planning for Oil and Gas Production Networks with Fixed Production Profiles, *INFORMS Annual Meeting*, Phoenix, AZ (October 2023).

Consideration of Uncertainty in the Rate of Waste Generation for the Problem of locating Collection Points, *XXXVI ENDIUM – XXXIV EPIO 2023*, University of La Pampa, Santa Rosa, Argentina (September 2023).

Analyzing the Operational Performance of a Musculoskeletal Integrated Practice Unit Using Real-Time Location System Data, *33rd POMS Annual Conference*, Orlando, FL (May 2023).

A Discrete-time Model for Batch Scheduling with Downtime and Skilled Labor Constraints in Multipurpose Environments, *INFORMS Annual Meeting*, Indianapolis, IA (October 2022).

Empirical Analysis of Length of Stay, Readmissions, and Discharge in Collaborative Care in Internal Medicine, *32nd Online POMS Annual Conference* (April 2022).

Empirical Analysis of the Impact of Collaborative Care in Internal Medicine: Applications to Length of Stay, Readmissions, and Discharge, *Neeley Data & Analytics in Health Care Conference*, Texas Christian University, Fort Worth, TX (March 2022).

Incorporating Learning-by-Doing into Mixed Complementarity Equilibrium Models, *INFORMS Annual Meeting*, Anaheim, CA (October 2021).

Multi-period Pricing under Price History Dependent Investments in Consumption Infrastructure: An Application in Natural Gas Sector, *INFORMS Annual Meeting*, Anaheim, CA (October 2021).

Discrete Convexity Results for Scheduling In-clinic and Virtual Medicine Patients in an Integrated Practice Unit, *31st POMS Annual Conference*, online (May 2021).

Incorporating Learning-by-Doing into Mixed Complementarity Equilibrium Models, *IISE Annual Conference*, online (May 2021).

Exploring the Convexity of Learning-by-Doing Formulations for Incorporation into Mixed Complementarity Problems, *IISE Annual Conference,* Virtual (May 2021).

A Complementarity-based Equilibrium Model with Endogenous Technological Change and an Application to Natural Gas Markets, *INFORMS Annual Meeting*, online (November 2020).

Strategic Interactions Between Liquefied Natural Gas and Domestic Gas Markets: A Bilevel Model, *INFORMS Annual Meeting*, online (November 2020).

Discrete Convexity Results for Scheduling In-clinic and Virtual Medicine Patients in an Integrated Practice Unit, *2020 POMS Annual Conference,* Minneapolis, MN (April 2020).

Not on My Coast? North American Natural Gas Markets Under LNG Demand Growth and Infrastructure Restrictions, *USAEE Conference*, Denver, CO (November 2020).

Transportation Improvement for Patients at a Safety Net Family Health Center, *INFORMS Annual Meeting*, Seattle, WA (October 2019).

North American Gas Market and Infrastructure Under Different LNG Export Scenarios, 42nd *IAEE Conference* Montréal, Canada (May 2019).

Investigation of Transportation Options for Economically Disadvantaged Patients at the Family Health Center, *University Hospital System*, San Antonio (May 2019).

Using Simulation to Design a WorkLife Integrated Practice Unit, *Winter Simulation Conference*, Gothenburg, Sweden (December 2018).

Midterm Nurse Scheduling with Specialized Constraints and Preference Considerations, *INFORMS Annual Meeting*, Phoenix, AZ (November 2018).

Long-term Capacity Planning of a Workforce with Hierarchical Skills and Random Resignations, *INFORMS Annual Meeting*, Phoenix, AZ (November 2018).

Design and Analysis of Appointment Scheduling for Integrated Practice Units, POMS 29th Annual Conference, Houston (May 2018).

Resource-Constrained Dynamic Programming with Hot-Starting for the Elementary Shortest Path Problem, *INFORMS Annual Meeting*, Houston, TX (October 2017).

Hierarchy Machine Setup for Lot Scheduling at Assembly and Test Facilities, *INFORMS Annual Meeting*. Houston, TX (October 2017).

Clinic Appointment Scheduling for Integrated Practice Units, *INFORMS Annual Meeting*. Houston, TX (October 2017).

Formulation and Algorithms for the Solution of the Kidney Exchange Problem, *Conference of the Mexican Society of Operations Research*, (CSMIO), Zapopan, Mexico (October 2017).

An exact optimization framework based on an improved problem reformulation for designing optimal districts in the recycling of electronic goods, *INFORMS Computing Society Conference*, Austin, TX (January 2017).

A Swapping Heuristic for Daily Nurse Scheduling in Operating Suites, *INFORMS Computing Society Conference*, Austin, TX (January 2017).

Coordinated Appointment Scheduling for a Integrated Practice Unit, *INFORMS Computing Society Conference*, Austin, TX (January 2017).

A New Exact Optimization Approach to the Kidney Exchange Problem by Using a Novel Network Transformation, *INFORMS Computing Society Conference*, Austin, TX (January 2017).