

VITA

Izak Duenyas

Education

1991 Ph.D., Industrial Engineering and Management Sciences, Northwestern University

1988 M.S., Industrial Engineering and Management Sciences, Northwestern University

1987 B. S., Industrial Engineering, Bogazici University, Istanbul, Turkey

Academic Employment

September 2000—present *Professor of Technology and Operations Management with tenure, Ross School of Business at The University of Michigan (Area Chair 2008-June 2014), Faculty Director of the Ross Executive MBA Program (July 2015-June 2023), Herrick Professor of Business (July 2016-present), Donald C. Cook Professor of Business (July 2015-June 2016), Ford Motor Company Co-Director of the Joel D. Tauber Institute for Global Operations (July 2014-June 2015), John Psarouthakis Professor of Manufacturing Management (September 2000-June 2014).* Previous rank: Associate professor of Operations Management with tenure 1999-2000

September 2001-present *Professor of Industrial and Operations Engineering, University of Michigan (previous ranks: Associate professor with tenure, 1997-2001, assistant professor 1991-1997).*

September 2007-August 2008 *Visiting Professor of Operations Management, Graduate School of Business, The University of Chicago.*

July 2021-June 2023 Associate Dean for Executive Programs, Ross School of Business at The University of Michigan.

July 2002-June 2006 *Associate Dean for Faculty Development and Research, Ross School of Business at the University of Michigan.*

September 1997-June 1998 *Visiting Associate Professor Department of Industrial Engineering and Management Sciences and Kellogg School of Management, Northwestern University, Evanston, Illinois.*

Refereed Journal Publications

- J1. I. Duenyas and W.J. Hopp, "Estimating Variance of Output from Cyclic Exponential Queuing Systems," *Queueing Systems: Theory and Applications*, **7** (1990) 337-355.
- J2. J.C. Bean, W.J. Hopp, and I. Duenyas, "A Stopping Rule for Forecast Horizons in Nonhomogenous Markov Decision Processes," *Operations Research*, **40** (1992) 1188-1200.
- J3. I. Duenyas, and W.J. Hopp, "CONWIP Assembly Systems with Deterministic Processing and Random Outages," *IIE Transactions* **24** No:4 (1992) 97-111.
- J4. W.J. Hopp, M.L. Spearman, and I. Duenyas, "Economic Production Quotas for Pull Production Systems," *IIE Transactions*, **25** No:2 (1993) 71-80.
- J5. I. Duenyas, W.J. Hopp, and M.L. Spearman, "Characterizing the Output Process of a CONWIP Line with Deterministic Processing and Random Outages," *Management Science*, **39** No:8 (1993) 975-988.
- J6. I. Duenyas, and W.J. Hopp, "Estimating the Throughput of an Exponential CONWIP Assembly System," *Queueing Systems: Theory and Applications*, **14** (1993) 135-157.
- J7. I. Duenyas, "Estimating the Throughput of a Cyclic Assembly System," *International Journal of Production Research*, **32** No.6 (1994) 1403-1419.
- J8. I. Duenyas, "The Limitations of Suboptimal Policies," *Interfaces*, **24** No:5 (1994) 77-84.
- J9. I. Duenyas, J. Fowler, and L. Schruben, "Planning and Scheduling in Japanese Semiconductor Manufacturing," *Journal of Manufacturing Systems*, **13** No:5, (1994) 323-332. (a version of this paper also appeared in *Engineered in Japan*, editors: J. Liker, J. Ettlie and J. Campbell, Oxford University Press, New York, 1995, p. 263-277).
- J10. I. Duenyas, "A Simple Release Policy for Networks of Queues with Controllable Inputs," *Operations Research*, **42** No:6, j(1994): 1162-1171.
- J11. I. Duenyas, and W.J. Hopp, "Quoting Customer Lead Times," *Management Science*, **41** No:1, (1995): 43-57.
- J12. I. Duenyas, and M. Keblis, "Release Policies for Assembly Systems," *IIE Transactions*, **27**, (1995): 507-518.
- J13. I. Duenyas, "Single Facility Due Date Setting with Multiple Customer Classes," *Management Science*, **41** No:4, (1995): 608-619.
- J14. I. Duenyas, and M. Van Oyen, "Stochastic Scheduling of Parallel Queues with Set-up Costs," *Queueing Systems: Theory and Applications*, **19**, (1995): 421-444.
- J15. I. Duenyas, and M. Van Oyen, "Heuristic Scheduling of Parallel Heterogeneous Queues with Set-Ups," *Management Science*, **42**, (1996): 814—829.

- J16. I. Duenyas, and J. Neale, "Stochastic Scheduling of a Batch Processing Machine with Incompatible Job Families," *Annals of Operations Research*, **70** (1997), 191-220.
- J17. I. Duenyas, M. Keblis and S.M. Pollock, "Dynamic Type Mating," *Management Science*, **43** (1997), 751-763.
- J18. I. Duenyas, W.J. Hopp and Y. Bassok, "Production Quotas as Limits on Interplant JIT Contracts," *Management Science*, **43**, (1997), 1372-1386.
- J19. J.R. Birge., J. Drogosz, and I. Duenyas, "Setting Single-Period Optimal Capacity Levels and Prices for Substitutable Products," *International Journal of Flexible Manufacturing Systems*, **10**, (1998), 407-430.
- J20. I. Duenyas, and P. Patane-Anake, "Base-Stock Control for Single Product Tandem Make-To-Stock Systems," *IIE Transactions*, **30**, (1998), 31-39.
- J21. I. Duenyas, D. Gupta, and T.M. Lennon, "Control of a Single-Server Tandem Queueing System with Setups," *Operations Research*, **46**, (1998), 218-230.
- J22. M. Van Oyen, I. Duenyas, and C.Y. Tsai, "Stochastic Sequencing with Job Families, Set-Up Times, and Due Dates," *International Journal of Systems Science*, **30**, No:2, (1999), 175-181.
- J23. M. Keblis, and I. Duenyas "Control of an Assembly System with Processing Time and Subassembly Type Uncertainty," *International Journal of Flexible Manufacturing Systems*, **11**, (1999), 353-370.
- J24. H.S. Ahn, I. Duenyas, and R. Zhang, "Optimal Stochastic Scheduling of a 3-Stage Tandem Queue with Parallel Servers," *Advances in Applied Probability*, **31**, (1999), 1095-1117.
- J25. J. Neale, and I. Duenyas, "Control of Manufacturing Networks Which Contain a Batch Processing Machine," *IIE Transactions*, **32**, (2000), 1027-1041.
- J26. I. Duenyas., and C.Y. Tsai, "Optimal Control of a Manufacturing System with Random Product Yield and Downward Substitutability," *IIE Transactions*, **32**, No:9, (2000), 785-795.
- J27. S. Carr, and I. Duenyas, "Optimal Admission Control and Sequencing in a Make-To-Stock/Make-To-Order Production System," *Operations Research*, **48**, (2000), 709-720.
- J28. S.M.R. Iravani, I. Duenyas, and T.L. Olsen, "A Production/Inventory System Subject to Failure with Limited Repair Capacity," *Operations Research*, **48**, (2000), 951-964.
- J29. S.M.R. Iravani, and I Duenyas, "Integrated Maintenance and Production Control of a Deteriorating Production System," *IIE Transactions*, **34**, No:5, (2002), 423-435.
- J30. H.S. Ahn, I. Duenyas, and M.L. Lewis, "The Optimal Control of a Two-Stage Tandem Queueing System with Flexible Servers," *Probability in the Engineering and Informational Sciences*, **16**, No:4, (2002), 453-469.

- J31. J. Neale, and I. Duenyas, "Scheduling of a Batch Processing Machine with Compatible Job Families." *IIE Transactions*, **35**, No:10, (2003) 699-710.
- J32. K. Frank, R. Zhang, and I. Duenyas, "Optimal Policies for Inventory Systems with Priority Demand Classes," *Operations Research*, **51**, No:6, (2003) 993-1002.
- J33. H.S. Ahn, I. Duenyas, and R. Zhang, "Optimal Control of a Flexible Server" *Advances in Applied Probability*, **36**, No:1, (2004), 139-170.
- J34. U. Kula, I. Duenyas, and S. Iravani, "Estimating Job Waiting Times in Production Systems with Cross-Trained Set-Up Crews," *IIE Transactions*, (2005), **36**, No:10, p. 999-1010.
- J35. M. Krankel, I. Duenyas, and R. Kapuscinski, "Timing Successive Product Introductions with Demand Diffusion and Stochastic Technology Improvement" *Manufacturing and Services Operations Management*, (2006), **8**, No:2. p.119-135.
- J36. Q. Ye, and I. Duenyas, "Optimal Capacity Investment Decisions with Two-Sided Fixed Capacity Adjustment Costs," *Operations Research* (2007), **55**, No:2. p.272-284.
- J37. X. Hu, I. Duenyas, and R. Kapuscinski, "Existence of Coordinating Transshipment Prices in a Two-Location Inventory Model," *Management Science* (2007), **53**, No:8, p. 1289-1302.
- J38. X. Hu, I. Duenyas, and R. Kapuscinski, "Optimal Joint Inventory and Transshipment Control under Uncertain Capacity," *Operations Research* (2008), **56**, No: 4, p.881-897 (+online appendix)
- J39. D. Kostamis, and I. Duenyas, "Quantity Commitment, Production and Subcontracting with Bargaining," *IIE Transactions*. (2009), **41**, No:8, p.677-686.
- J40. D. Kostamis, D. Beil, and I. Duenyas, "Total Cost Procurement Auctions: Impact of Suppliers' Cost Adjustments on Auction Format Choice," *Management Science*, (2009) **55**, No: 12, p.1985-1999.
- J41. W. Shen, I. Duenyas and R. Kapuscinski, "New Product Diffusion Decisions under Supply Constraints" *Management Science*. (2011), **57**, No:10, p. 1802-1810.
- J42. D. Kostamis, and I. Duenyas., "Purchasing Under Asymmetric Demand and Cost Information : When is More Private Information Better?" *Operations Research*. (2011), **59**, No:4, p 914-928 (+15 page e-companion available on *Operations Research* website).
- J43. C. Oben, I. Duenyas., and Y. Koren "Optimal Control of an Assembly System with Demand for the End Product and Intermediate Components" *IIE Transactions* (2012), **44**, No,5, p. 386-403.
- J44. Q. Ye, I. Duenyas and R. Kapuscinski, "Should Competing Firms Reveal their Capacity?" *Naval Research Logistics* (2013) **60**, No:1, pp.64-86.

- J45. C. Oben, O. Sahin, and I. Duenyas, "Dynamic Pricing of Substitutable Products in the Presence of Capacity Flexibility," *Manufacturing and Services Operations Management (MSOM)* (2013) **15**, p. 86-101 (+ e-companion available on MSOM website)
- J46. B. Hu, I. Duenyas, and D. Beil, "Does Pooling Component Demands when Sourcing Lead to Higher Profits," *Management Science*, (2013), **59**, No.7, p.1576-1593.
- J47. B. Hu, Beil, D., and I. Duenyas, "Price-Quoting Strategies of an Upstream Supplier" *Management Science* (2013), **59**, No.9, pp.2093-2110.
- J48. I. Duenyas, B. Hu, and D. Beil, "Simple Auctions for Supply Contracts," *Management Science*. (2013), **59**, No.10, pp.2332-2342.
- J49. W. Shen, . I. Duenyas, and R. Kapuscinski, "Optimal Pricing, Production and Inventory for New Product Diffusion Under Supply Constraints," *Manufacturing and Supply Operations.Management (MSOM)*, **16**, No.1, (2014), pp. 28-45.
- J50. Y. Cui, I. Duenyas and O. Sahin, "Should Event Organizers Prevent Resale of Tickets?" *Management Science*, **60**, No:9, (2014), pp. 2160-2179.
- J51. T. Amonpetchkul, Duenyas, I., and Sahin, O., "Mechanisms to Induce Buyer Forecasting: Do Suppliers Always Benefit From Better Forecasting?" *Production and Operations Management*, **24**, No:11 (2015) pp. 1724-1749.
- J52. S. Demirel, I. Duenyas, and R. Kapuscinski, " Production and Inventory Control for a Make-To-Stock, Calibrate-To-Order System with Dedicated and Shared Resources," *Operations Research*, **63**, No:4, (2015), pp. 823-839.
- J53. G. Chen, Jasin, S., and I. Duenyas, "Real Time Dynamic Pricing with Minimal and Flexible Price Adjustment," *Management Science*, **62**, No:8, (2016), pp. 2437-2455. (online supplement available on INFORMS website)
- J54. G. King, X. Chao and I. Duenyas, "Dyanamic Customer Acquisition and Retention" *Production and Operations Management*, **25**, No:8, (2016) pp. 1332-1343.
- J55. C. Shi, Chen, W., and I. Duenyas, "Nonparametric Data-Driven Algorithms for Multi-Product Inventory Systems with Censored Demand," *Operations Research*, **64**, No:2, (2016), pp. 362-370 (online supplement available on INFORMS website).
- J56. Y. Xu, C. Shi, and I. Duenyas, "Priority Rules for Multi-Task Due-Date Scheduling under Varying Processing Costs," *Production and Operations Management*, **25**, No:12, (2016), pp. 2086-2102.
- J57. Beil, D., G. Chen, I. Duenyas, and B. See, "When to Deploy Test Auctions in Sourcing," *Manufacturing and Supply Operations Management (MSOM)*, **20**, No:2, (2018), pp. 232-248.
- J58 Cui, Y., I. Duenyas, and O. Sahin. " Pricing of Conditional Upgrades in the Presence of Strategic Customers," *Management Science*, **64**, No:7, (2018), pp. 3208-3222

- J59. Cui, Y., I. Duenyas, and O. Sahin, “Unbundling of Ancillary Service: How does Price Discrimination of Main Service Matter,” *Manufacturing and Supply Operations Management (MSOM)*, **20**, No:3, (2018), pp. 455-466.
- J60. Ceryan O., I. Duenyas, and O. Sahin, “Dynamic Pricing and Replenishment with Customer Upgrades,” *Production and Operations Management (POMS)*, **27**, No:4, (2018), p. 663-679.
- J61. Chen, G., Jasin, S., and I. Duenyas , “A Nonparametric Self-Adjusting Control for Multi-Product Pricing with Limited Resources,” *Mathematics of Operations Research*, **44**, No:2, (2019), p. 601-631.
- J62. Cui, Y., A.Y.Orhun, and I. Duenyas, “How Price Dispersion Changes when Upgrades are Introduced: Theory and Empirical Evidence from the Airline Industry,” *Management Science*, **65**, No:8, (2019), 3835-3852.
- J63. King, G, X. Chao, and I. Duenyas, “Who Benefits When Prescription Drug Manufacturers Offer Co-Pay Coupons?” *Management Science*, **65**, No:8, 3758-3775
- J64. Chen, W., C. Shi, and I. Duenyas, “Optimal Learning Algorithms for Stochastic Inventory Systems with Random Capacity,” *Production and Operations Management (POMS)*, Vol, **29**, No:7, (2020), 1624-1649.
- J65. Tian, F. P. Sun, and I. Duenyas, “Optimal Contract for Machine Repair and Maintenance” *Operations Research.*, **69**. No:3 (2021). 916-949.
- J66. Chen, G., S. Jasin, and I. Duenyas, “Joint Learning and Optimization of Multi-Product Pricing with Finite Resource Capacity and Unknown Demand Parameters,” *Operations Research*, **69**, No:2 (2021), 560-573.
- J67. Tian, F., P. Sun, and I. Duenyas, “Optimal Contract for Machine Repair and Maintenance,” *Operations Research*, **69**, No:3, (2021), 683-703.
- J68. Chen, G., I. Duenyas, and S. Jasin, “Optimal Use and Replenishment of Two Substitutable Raw Materials in a Non-Stationary Capacitated Make-To-Order System,” *Manufacturing and Service Operations Management (MSOM)*, **24**, No:4, (2022), 2274-2292.
- J69. Tian, F., P. Sun, and I. Duenyas, “Optimal Contract for Machine Repair and Maintenance,” *Operations Research*, **69**, No:3, (2021), 683-703.
- J70. Khanjari, N.E., I. Duenyas, and S.M.R Iravani, “Should Suppliers Allow Capacity Transfers?” *Production and Operations Management*, **31**, No:5, (2022), 2324-2340.
- J71. Li, J., S. Leider, D. Beil, and I. Duenyas. “Running Online Experiments Using Web-Conferencing Software,” *Journal of the Economic Science Association*, **7**, No:2, (2022), 167-183.
- J72. Chen, G., D. Beil, and I. Duenyas, “Procurement Mechanisms for Post-Auction Pre-Award Cost-Reduction Investigations,” *Operations Research*, **70**, No:6, (2022), 3054-3075.

Other Publications- Under Review/Revision

- S1. Najafi, S., and I. Duenyas, “Price Markdowns to Induce Customers to Opt Out of Free Returns,” Under Revision.
- S2. Najafi, S., I. Duenyas, S. Jasin, and J. Uichenco, “Multi-Product Dynamic Pricing with Limited Inventories under Cascade Click Model,” Under Review.
- S3. Tian, F., Mostagir, M., and I. Duenyas, “Technology Choice in Dynamic Competition,” Under Review.
- S4. Ayhan, A. J. Birge, and I. Duenyas, “A Wholesale Supply Contract with a Secondary Price Commitment,” Under Revision.
- S5. Ng, J., S. Iravani, and I. Duenyas, “Optimal Product Launch Times for a Firm with a Niche Product,” under revision.
- S7. Hu, Xinxin, I. Duenyas, and R. Kapuscinski, “Advance Demand Information and Safety Capacity as a Hedge Against Demand and Capacity Uncertainty,” under revision.
- S8. Birge, J.R, Duenyas, I., and W. Narongwanich “Optimal Dynamic Capacity Investment when Capacity is Lumpy” under revision.
- S9. Sangari, E., I. Duenyas, and S. Iravani, “Self-Matching Guarantees in an Omni-Channel Retail Supply Chain,” under revision.
- S10. Li, J., D. Beil, I. Duenyas, and S. Leider, “Human Decision-Making in Dynamic Resource Allocation,” under review.
- S11. Tian, F., Astashkina, E., and I. Duenyas, “Dynamic Contract Design in the Presence of Double Moral Hazard,” under revision.
- S12. Tian, F., F. Zhang. P. Sun, and I. Duenyas, “Dynamic Moral Hazard with Adverse Selection—A Pontryagin Approach,” under review.
- S13. Chen, S. I. Duenyas and S.Iravani, “ Revenue Management of a Two-Server Queue with Two Types of Customers,” under revision.
- S14., Ahn, H.S., E. Cetinaya, I. Duenyas,, and M. Zhang, “Benefits of Collaboration in Capacity Investment and Allocation,” under review.
- S15. Tang, J, C. Shi, and I. Duenyas, “Online Learning and Matching for Multi Product Systems with General Upgrading,” under review.

Case Studies:

- C1. “Capacity Management at the Surgical Intensive Care Unit at St. Mary’s Hospital,” Ross School of Business Case No: 1-428-724 (November 2008), (with Roman Kapuscinski).
- C2. “Lean Process Improvements at Cleveland Clinic”, Globalens Ross School of Business Case No: 1-428-795, (2009).
- C3. “CreativeCalligraphyInvitations.com: A Production Process Analysis”, Globalens Ross School of Business Case No: 1-428-837, (2009).
- C4. “Petro Refinery LLC”, Globalens, Ross School of Business case, No: 1-428-999, (2010).
- C5. “Kellogg’s Cereal Production Process,” Globalens, Ross School of Business, No: 1-429-164, (2011).
- C6. “Oz TV”, Globalens, Ross School of Business, No: 1-429-240, (2012)
- C7. Supplier Selection at Casturn Systems (A) and (B). No:1-429-248, 1-429-249 (2012), with Damian Beil.

Unpublished Technical Reports

- T1. Carr, S., I. Duenyas, and W. Lovejoy, “The Harmful Effects of Capacity Improvement.”
- T2. Duenyas, I., and C.Y. Tsai, “Centralized and Decentralized Control of a Two-Stage Tandem Manufacturing System with demand for Intermediate and End Products.”
- T3. Narongwanich, W., I. Duenyas, and J.R. Birge, “Optimal Portfolio of Reconfigurable and Dedicated Capacity under Uncertainty.”
- T4. Ahn, H.S., I. Duenyas, and R. Zhang, “Price Competition Between Retailers and Manufacturer Owned Stores.”

Refereed Proceedings

- 1. KEBLIS, M., and I. Duenyas, “A Simple Approximation for the Throughput of Tandem Kanban Lines,” *Proceedings of the Third IIE Research Conference*, 1994, 100-105.

Other Reports and Recent Presentations

- “Revenue Management of a Two-Server Queue with Two Types of Customers,” with S. Chen. And S. Iravani, INFORMS, October 2022, Indianapolis, IN.
- “Procurement with Change Order Renegotiations,” with J. Li, D. Beil, and S. Leider, 32nd POMS Conference.
- “Multi-Product Dynamic Pricing (and Ranking) with Limited Inventories under Cascade Click Model, with S. Najafi, I. Duenyas, S. Jasin, and J. Uichanco, INFORMS November 2021, Anaheim, CA.
- “Dynamic Moral Hazard with Adverse Selection,” with F. Zhang, F. Tian, and P. Sun., POMS Conference, May 2021.
- “Dynamic Contract Design in the Presence of Double Moral Hazard,” with F. Tian, and E. Astashkina, INFORMS 11/2020
- “Dynamic Decision Making in Product Development,” with J. Li, D. Beil and S. Leider, INFORMS, 11/2020
- “Procurement Mechanisms with Post Auction Pre-Award Cost-Reduction Investigations,” with Chen, G., and D. Beil, INFORMS 11/2020.
- “How Price Dispersion Changes when Upgrades are Introduced: Theory and Empirical Evidence from the Airline Industry,” with Cui, Y., and Y. Orhun, INFORMS, Seattle, 10/2019.
- “Multi-Product Dynamic Pricing with Limited Inventories under a Cascade Click Model,” INFORMS, Seattle, 10/2019.
- “Joint-Dynamic Pricing and Discounting in the Presence of “Pay-Now,” and “Pay-Later” Options”, with S. Najafi, and O. Sahin, POMS, Washington DC, May 2019.
- “Optimal Contract for Machine Repair and Maintenance,” with F. Tian, and P. Sun, POMS, Washington DC, May 2019.
- “Price Markdowns to Induce Customers to Opt Out of Free Returns,” with S. Najafi, INFORMS, Phoenix, November 2018, INFORMS Seattle, 10/2019.
- “Procurement Mechanisms with Post-Auction Pre-Selection Cost Reduction Investigations,” with S. Najafi and D. Beil, INFORMS, Phoenix, November 2018
- “Optimal Contract for Machine Repair and Maintenance,” MSOM, Dallas, June, 2018 and POMS, May 2018.
- “Return Policy Optimization” with S. Najafi, MSOM, Dallas, June 2018.
- “Technology Choice in Dynamic Competition,” with M. Mostagir and F. Tian, INFORMS, Houston, October 2017, MSOM, Dallas, June 2018.
- “Procurement Mechanisms with Post-Auction Cost Reduction Investigations,” with G. Chen and D. Beil, INFORMS, Houston, October 2017.
- “A Non-Parametric Self-Adjusting Control for Multi-Product Pricing with Unknown Demand Function and Finite Resource Capacity,” with G. Chen, and S. Jasin, INFORMS, Houston, October 2017, POMS, Houston, May 2018.
- “Test Auctions in Sourcing,” Seminar at New York University and Ford Motor Company, September 2017.

- “Price Dispersion and Consumer Upgrades: Theory and Empirical Evidence from Airline Industry,” with Y. Cui, and Y. Orhun, POMS, Seattle, May 2017.
- “Dynamic Pricing with Customer Upgrades,” with O. Ceryan, and O. Sahin, POMS, Seattle, May 2017.
- “A Nonparametric Self-Adjusting Control for Multi-Product Pricing with Limited Resources,” with G. Chen, and S. Jasin, INFORMS Nashville, November 2016.
- “An Optimal Procurement Mechanism with Post-Bid Cost-Reduction Activities,” with G. Chen, and D. Beil, INFORMS Nashville, November 2016, POMS Orlando May 2016.
- “Dynamic Pricing and Replenishment of Vertically Differentiated Products with Customer Upgrades,” with O. Ceryan, and Ozge Sahin, INFORMS Nashville, November 2016.
- “Nonparametric Data-Driven Algorithms for Capacitated Inventory Systems,” with W. Chen, and C. Shi, INFORMS Nashville 2016.
- “Price Dispersion and Consumer Upgrades: Theory and Empirical Evidence from Airline Industry,” INFORMS Nashville 2016, POMS Orlando 2016.
- “When To Use Test Auctions in Sourcing,” Talk Given at University of Southern California, Marshall School of Business, April 2016.
- “Unbundling of Ancillary Service: How Does Price Discrimination of Main Service Matter?” with Y. Cui, and O. Sahin, INFORMS, Philadelphia, November 2015.
- “Optimal Product Launch Times for a Small Firm in a Competitive Environment,” with J. Ng, and S. Iravani, INFORMS, Philadelphia, November 2015.
- “Nonparametric Self-Adjusting Price Control,” with S. Jasin, and G. Chen, INFORMS, Philadelphia, November 2015.
- “Dynamic Pricing with Customer Upgrades,” with O. Ceryan, and O. Sahin, INFORMS, Philadelphia, November 2015.
- “Analysis of Self-Adjusting Controls for Dynamic Pricing with Unknown Demand Parameters,” Chen, G, Jasin, S., and I. Duenyas., INFORMS, Philadelphia, November 2015.
- “Data-Driven Algorithms for Nonparametric Multiproduct Inventory Systems,” with C. Shi, and W. Chen, POMS Conference, Washington DC, May 2015, Inform Conference, Philadelphia, November 2015
- “Dynamic Pricing and Replenishment with Customer Upgrades,” with O. Ceryan and O. Sahin, INFORMS Conference, San Francisco, November 2014, POMS Conference, Washington DC, May 2015
- “Entrant Cost Uncertainty in Procurement Auctions: Theory and Experiments,” with D. Beil, S. Leider, and B. See, INFORMS, San Francisco, November 2014
- “Strategic Pricing of Ancillary Services: To Bundle or Unbundle,” with Y. Cui, and O. Sahin, INFORMS, San Francisco, 2014
- “An Optimal Procurement Mechanism with Post-Bid Cost Reduction,” with P. Nestor, and D. Beil, INFORMS Conference, San Francisco, November 2014.
- “Application of Self-Adjusting Controls for Dynamic Pricing with Unknown Demand,” with G. Chen and S. Jasin, INFORMS, San Francisco, November 2014.
- “Pricing of Conditional Upgrades in the Presence of Strategic Customers”, with Y. Cui, and O. Sahin, IFORS, 2014, Barcelona, Spain, July 2014, INFORMS Revenue Management Conference, Istanbul, June 2014, MSOM Conference, Seattle June, 2014., Inform Conference, San Francisco, November 2014.
- “Analysis of Self-Adjusting Controls for Dynamic Pricing with Unknown Demand Parameters,” with Qi Chen and Stefanus Jasin, POMS 2014, Atlanta, May 2014.

- “Pricing of Conditional Upgrades in the Presence of Strategic Consumers,” with Yao Cui and Ozge Sahin, POMS 2014, Atlanta, May 2014.
- “Real Time Dynamic Pricing with Minimal and Flexible Price Adjustment,” with Qi Chen and Stefanus Jasin, INFORMS 2013, Minneapolis..
- “The Effect of Entrant Cost Uncertainty in Procurement Auctions,” with Brendan See and Damian Beil, INFORMS 2013, Minneapolis, POMS 2014, Atlanta.
- “The Effect of Entrant Cost Uncertainty in Auctions,” with Brendan See and Damian Beil, June 2013, MSOM Meeting, Insead, France, INFORMS 2013, Minneapolis.
- “Dynamic Pricing and Replenishment with Customer Upgrades,” with Oben Ceryan and Ozge Sahin, June 2013, MSOM Meeting, Insead, France, INFORMS 2013, Minneapolis.
- “Dynamic Pricing with Linear Price Correction” with Qi Chen and Stefanus Jasin, Euro Conference, July 2013, Rome.
- “When To Deploy Test Auctions in Sourcing,” with Brendan See and Damian Beil, July 2013, Euro Conference Rome.
- “Test Auctions to Assist with Supplier Qualification”,with Brendan See and Damian Beil, January 2013, POMS Hong Kong., November 2012, INFORMS Phoenix.
- “Bidding Decisions Under Costly Information Acquisition”, with Brendan See and Damian Beil, November 2012, INFORMS Phoenix.
- “Dynamic Customer Acquisition and Retention Management,” with Gregory King and Xiuli Chao, November 2012, INFORMS Phoenix.
- “Should Event Organizers Prevent Resale of Tickets?” with Yao Cui and Ozge Sahin, MSOM Conference, Service SIG, May 2012, New York, EURO Conference, Rome, July 2013.
- “Who Benefits when Prescription Drug Manufacturers Offer Coupons?” MSOM Conference May 2012, New York and INFORMS Conference, October 2012, Phoenix.
- “Price Quoting Strategies of an Upstream Supplier” Seminars at MIT September 2011, Kellogg School of Business, Northwestern September 2011, University of Toronto, March 2012, and University of Washington, April 2012.
- “Does Pooling Component Demands when Sourcing Lead to Higher Profits,” with Bin Hu and Damian Beil, POMS Chicago, April 2012.
- “Group Incentives in Coordinating Assembly Supply Chains with Non-Testable Components,” POMS Chicago, April 2012.
- “Event Revenue Management with Resale” with Yao Cui and Ozge Sahin, INFORMS Charlotte, NC November 2011, POMS Chicago, April 2012, MIT Sports Analytics Conference, Boston, February 2012.
- How To Grow and Maintain a Profitable Customer Base, with Gregory King and Xiuli Chao.
- “Deploying Test Auctions to Assist with Supplier Qualification Decision Making,” with Brendan See and Damian Beil, MSOM Conference Ann Arbor, June 2011, INFORMS, Charlotte, NC November 2011, POMS Chicago April 2012.
- Production and Inventory Control for a Two-Stage Production System with Uncertain Capacities, with Suleyman Demirel and Roman Kapuscinski, MSOM Conference, Ann Arbor, June 2011.
- Simple Auctions for Supply Contracts, with Bin Hu and Damian Beil, MSOM Conference, Ann Arbor, June 2011
- “Capacity Transfer Rights: When Do They Benefit Suppliers?” with Linlin Li and Seyed Iravani. Presented at INFORMS, November 2010, Austin Texas, MSOM Conference Ann Arbor 2011, INFORMS, Charlotte, NC, November 2011, POMS Chicago, April 2012.

- “Production and Inventory Control for a Two-Stage Assemble-to-Order System with Uncertain Capacities” with Suleyman Demirel and Roman Kapuscinski, INFORMS, November 2010, Austin, Texas.
- “Managing Demand and Supply for Multiple Products through Dynamic Pricing and Capacity Flexibility,” MSOM Conference 2010, Tel Aviv and INFORMS 2010, Austin, Texas(with Oben Ceryan and Ozge Sahin).
- “Price Quoting Strategies of a Tier Two Supplier”, MSOM Conference, 2010, Tel Aviv and INFORMS 2010, Austin Texas(With Bin Hu and Damian Beil).
- “Purchasing under Information Asymmetry” Invited talk—University of Texas at Dallas, April 2010.
- “Contracting with Forecast Updates and Asymmetric Information,” INFORMS Conference, 2009, San Diego (with Ozge Sahin).
- “Dynamic Pricing and Capacity Flexibility”, INFORMS Conference, 2009, San Diego (with Oben Ceryan and Ozge Sahin).
- “Strategic Price Quotation by a Tier-Two Supplier” INFORMS Conference, 2009, San Diego, (with Bin Hu and Damian Beil).
- “Transfer Strategies in the Capacity Reservation Problem,” INFORMS Conference, 2009, San Diego, (with Linlin Li and Seyed Iravani).
- “Procurement Strategies in a Three-Tier Supply Chain with Private Demand Information,” MSOM Conference, University of Maryland, June 2008 (with Dimitris Kostamis).
- “When Is it Cheaper to Outsource Integration,” MSOM Conference, University of Maryland, June 2008 (with Dimitris Kostamis).
- “Optimal Control of an Assembly System with Demand for the End Product and Intermediate Components,” Informs 2008, Washington D.C. (with O. Ceryan and Y. Koren).
- “When Should Firms Pool Purchases from a Sole Source Supplier,” Informs 2008, Washington D.C., (with Bin Hu and Damian Beil).
- “New Product Diffusion Decisions Under Supply Constraint” MSOM Conference, Tsinghua University, Beijing, June 2007 and INFORMS Conference. Seattle, November 2007. (with Shen, Wenjing, and Roman Kapuscinski).
- “Production and Admission Control in Assemble-to-Order Systems” (with Ceryan O., and Koren, Y.) Informs Seattle, November 2007.
- “Effects of Information Asymmetry in Sourcing” invited talks given at the University of Chicago, Ohio State, USC and Purdue, October 2007-February 2008.
- “Purchasing under Asymmetric Information” Invited Talks at Columbia University and University of Maryland, November 2006, Duke University, April 2007.
- “Rank Revelation versus Sealed Bid Procurement Auctions: Should the Buyer Announce its Information on Supplier Quality,” with D. Kostamis and D. Beil, presented at the 2006 MSOM Conference, Atlanta, GA, June 2006, and INFORMS Conference, Pittsburgh, November 2006.
- “The Effects of Capacity Information Assymetry on Production” with Qing Ye, presented at the INFORMS Conference, San Francisco, November 2005.
- “Managing Delays and Material Expenses in Production with Yield Losses”, with Wenjing Shen and Roman Kapuscinski, San Francisco, November 2005.
- “Purchasing under Assymetric Cost and Demand Information”, with Dmitris Kostamis, presented in the INFORMS Conference, San Francisco, November 2005.
- “Optimal Capacity Investment Decisions with Two-sided Fixed Capacity Adjustment”, with Qing Ye, presented in the INFORMS Conference, San Francisco, November 2005.

- “Quantity Reservation and Capacity Investment with Bargaining” with Dimitris Kostamis, presented in the INFORMS Conference, Denver, November 2004.
- “Optimal Joint Inventory and Transshipment Control under Uncertain Capacity”, with X. Hu, and R. Kapuscinski, presented in the MSOM conference, June 2004, also at New York University, October 2004, Carnegie Mellon University, March 2005
- “Cooperation Between Suppliers with Production Variability and Transshipment,” with X. Hu and R. Kapuscinski, presented in INFORMS, Atlanta, November 2003.
- “Timing Successive Product Introductions with Demand Diffusion and Stochastic Technology Improvement.” presented in INFORMS, Atlanta, November 2003.
- “The Optimal Control of a Two-Stage Tandem Queue with Dynamic Arrivals” with H.S. Ahn and M.L. Lewis, presented in INFORMS, Miami, November 2002.
- “Optimal Portfolio of Reconfigurable and Dedicated Capacity under Uncertainty,” invited talk in University of California, Berkeley, September 2002.
- “Optimal Production Control with Uncertain Capacity, Demand Information and Outsourcing,” with X. Hu, and R. Kapuscinski, presented in INFORMS, Miami 11/01
- “The Optimal Scheduling of a Multi-Class Queueing System with Parallel Servers,” with H.S. Ahn, and R. Zhang, presented in INFORMS, Miami 11/01.
- “The Optimal Control of a Two-Stage Tandem Queue with Dynamic Arrivals” with H.S. Ahn, and M. Lewis, presented in INFORMS, Miami 11/01.

Doctoral Students

- Matthew Keblis (Graduated- October 1995).
- John Neale (Graduated- July 1997). Rackham Pre-Doctoral Fellow.
- John Dragosz (Graduated- July 1998). Joint advisor with John Birge.
- Scott Car (Graduated- September 1999). Joint advisor with William Lovejoy. Honorable mention in 1997 MSOM student paper competition.
- Prayoon Patane-Anake (Graduated- December 1999).
- Hyun-Soo Ahn (Graduated- December 2000). Joint advisor with Rachel Zhang. Rackham Pre-Doctoral Fellow.
- Chi-Yang Tsai (Graduated- May 2001).
- Wichai Narongwanich (Graduated--August 2002). Joint advisor with John Birge.
- Ufuk Kula (Graduated December 2003)
- Xinxin Hu (Graduated, December 2005). Joint advisor with Roman Kapuscinski. First place in 2002 MSOM student paper competition. Honorable mention in 2004 MSOM student paper competition. Rackham Pre-Doctoral Fellow.
- Qing Ye (Graduated December 2006). Joint Advisor with Roman Kapuscinski
- Dimitris Kostamis (Graduated-May 2007).

- Wenjing Shen (Graduated September 2008). Joint advisor with Roman Kapuscinski
- Oben Ceryan (Graduated April 2010). Joint advisor with Yoram Koren
- Bin Hu (Graduated, April 2011). Joint advisor with Damian Beil
- Gregory King (Graduated, June 2014). Joint advisor with Damian Beil.
- Brendan See (Graduated, September 2014). Joint advisor with Damian Beil.
- Yao, Cui (Graduated, May 2015) Joint advisor with Ozge Sahin.
- Qi Chen (Graduated, May 2017) Joint advisor with Stefanus Jasin
- Weidong Chen (Graduated, May 2019) Joint advisor with Cong Shi.
- Feng Tian (Graduated, May 2021) Joint advisor with Ekaterina Astashkina
- Jingwen Tang, Joint Advisor with Cong Shi
- Yuwen Hu, Joint Advisor with Ekaterina Astashkina.

Post-Doctoral Fellows

- Zhuodong Tang, July 2022-present
- Seyed Iravani- April 1997-September 1998.
- Kenan Arifoglu—January-July 2012.
- Sajjad Najafi—November 2017-December 2019.

Executive Education

- Faculty Director of Business Leadership Program, GE, 2020-2022
- Faculty director for custom program on Consultant Development, Saudi Telecommunication Company, April 2018-November 2019.
- Faculty director of action learning projects at Saudi Telecommunications Company, and Metalsa, 2018.
- Faculty director for custom program on Operations Leadership, Novelis, May 2014-present.
- Faculty director for custom program on Operations Leaders Program, Bank of America, April 2013-present.
- Faculty director of executive education program on Supply Chain Management. Program taught in Ann Arbor, Bangkok, Hong Kong, Sao Paolo, Beijing, and Santiago.

- Faculty director of executive education program on High Efficiency Operations. Program taught in Kuala Lumpur, 2011-2014
- Faculty co-director of executive education program on Lean Manufacturing and Supply Chain Management. Program taught in many locations in U.S., in public offerings as well as on-site locations at numerous companies including Apple, Clariant, GE Money, GE Energy, United Technologies, Ford, Daimler Chrysler, Steelcase, Gerber, Cummins, Merck, Siemens, Steelcase, Algoma Steel, Schlumberger, Rusal, Siemens, Seattle Children's Hospital, Detroit Diesel, Talisman.
- Taught in the "Manufacturing Executive", and "Rapid Plant Assessment" programs.
- Taught operations and supply chain management in custom programs for AT Kearney.

Professional Service

- President of the MSOM Society of INFORMS, July 2004-July 2005, Vice President July 2003-July 2004.
- Conference Organization
 1. Co-chair of the MSOM Meeting held in Ann Arbor, June 2011.
 2. Co-chair of the MSOM Meeting held in Ann Arbor, June 2000.
 3. Organizer of ORSA doctoral colloquium held in Ann Arbor, October 1994.
 4. Program Committee Member (responsible for sponsored sessions) TIMS/ORSA National Meeting, held in Detroit, October 1994.
- Editorial Activities
 1. Area Editor for the area Manufacturing, Service and Supply Chain Operations, *Operations Research*, January 1, 2006-December 31, 2011
 2. Senior Editor, *Production and Operations Management*, July 2021-present.
 3. Associate Editor: *Operations Research*, November 1995-December 2005, January 2012-December 2017.
 4. Associate Editor: *Management Science*, September 1997-December 2008..
 5. Associate Editor, *Naval Research Logistics*, January 2004-December 2005.
 6. Editorial Board Member: *Manufacturing and Service Operations Management (MSOM)*, August 1996-December 2002.
 7. Department Editor: *IIE Transactions Supply Chain/ Production-Inventory Systems*, January 2001-December 2004.
 8. Book Review Editor: *IIE Transactions on Scheduling and Logistics*, September 1997-present.
 9. Associate Editor: *International Journal of Flexible Manufacturing Systems*, February 1996-December 2000.
 10. Associate Editor: *IIE Transactions on Scheduling and Logistics*, April 1995-December 1997.
 11. Co-editor of Special issue of *Journal of Flexible Manufacturing Systems*, on Electronics Manufacturing, 1997.

12. Referee: *Journal of Applied Probability, Operations Research, IIE Transactions, International Journal of Flexible Manufacturing Systems, Management Science, Naval Research Logistics, IEEE Transactions on Systems, Man and Cybernetics, IEEE Transactions on Semiconductor Manufacturing, IEEE Transactions on Automatic Control, European Journal of Operations Research, Production and Operations Management, Production Planning and Control.*
- Other Activities
 1. Member of the INFORMS Nicholson Competition Award Committee, 1999, 2002, 2003, 2004.
 2. Chair of Award Committee, Dantzig Dissertation Award, 1998.
 3. Vice President, ORSA Southeastern Michigan Chapter, 1991-1994.
 4. Cluster Chair- Techman Sponsored Sessions, INFORMS Meeting, New Orleans, October 1995.
 5. Chair of the 1998 Dantzig Dissertation Award Committee.
 6. Session Chair at numerous INFORMS meetings.

University of Michigan Service

- Associate Dean for Executive Programs, July 2021-June 2023.
- Faculty Director of the Ross School of Business Executive MBA Program, July 2015-June 2023.
- Ross School of Business Executive Committee Member, July 2014-June 2016, July 2019-June 2021
- Ford Motor Company Co-Director of the Joel D. Tauber Institute for Global Operations, July 2014-June 2015
- Area chair for Operations and Management Science (renamed Technology and Operations since 2012), Ross School of Business, July 2008-June 2014.
- Member of the University of Michigan Dispute Review Board, June 2006-May 2007.
- Associate Dean for Faculty Development and Research, Ross School of Business, July 2002-June 2006
- Acting Chair of Operations Management Area, University of Michigan Business School 2001-2002.
- Member of the Provost's Taskforce on Faculty and Staff Immigration, 2004-2005.
- Member of the Provost's Subcommittee on Mentorship, 2003-2004.
- Co-director, University of Michigan Lean Manufacturing Certificate Program, June 1999-present.
- Member of the Research Committee, University of Michigan Business School, September 99-00. Chair of the Research Committee, 00-01. Member of the MBA

Review Committee 01-02. Member of the BBA Review Committee, 03-04, Chair and Member of Executive Council, 2019-2021

- Chair of IOE Admissions and Financial Aid Committee, January 1999-June 1999.
- Freshman Counseling Advisor, 1993-1997, Fall 1998, advised engineering freshman three hours a week.
- Member of the following committees: The Advisory Board for the Center for Learning and Teaching (CRLT), 1998-1999, IOE Department Review Committee, 1996., IOE Admissions and Financial Aid Committee, 1993-1997, Rackham School Pre-Doctoral Fellowship Committee, 1996., IOE Chairman Search Committee, 1993, IOE Executive Committee, 1993-1994, 1998-1999, IOE Curriculum Committee, 1991-1992.
- Faculty Advisor to Alpha Pi Mu, 1992-1993.

Industrial Experience

- Worked with Lockheed, Pratt and Whitney. Siemens, Continental Amoco, Merck, Cabot, Xerox, Alcoa, Boeing, Allied Signal, General Signal, Whirlpool, McKinsey, Steelcase, Pfizer, Cummins, Teva, Daimler Chrysler, Simmons, Hutchinson Technologies, Schlumberger, Talisman Energy. Ricardo, Pridgeon and Clay, and AT Kearney in consulting and training roles/. Also worked on research grants from Ford, GM and Industrial Design Corporation.

Awards/Honors

- **2019** Ross Senior Faculty Research Award
- **2016** Executive MBA Student Award for Teaching Excellence (awarded by the EMBA 21 class, also selected as the commencement speaker by the class).
- **2015** Executive Education Teaching Impact Award—Custom Programs, Ross School of Business.
- **2013** Executive MBA Student Award for Teaching Excellence (awarded by the EMBA 18 class).
- **2011** INFORMS Fellow Award.
- **2011** MSOM Society Distinguished Service Award.
- **2010** Executive MBA Student Award for Teaching Excellence (awarded by the EMBA 13 class)
- **2009** Executive MBA Student Award for Teaching Excellence (awarded by the EMBA 10 class).
- **2003** Executive MBA Student Award for Teaching Excellence
- **2002** Researcher of the Year Award—Given annually to one tenured faculty member at the University of Michigan Business School.
- **1997** Operations Research, Meritorious Service Award
- **1996** NSF Career Award.
- **1996** Tauber Manufacturing Institute Faculty Fellow, 1996-1999.

- **1996** IOE Research Excellence Award – Given annually to one faculty member at the University of Michigan’s Industrial and Operations Engineering Department.
- **1993** Research Initiation Award from the National Science Foundation.
- **1992** Production and Operations Management Society Best Dissertation Award.
- **1992** Nicholson Paper Competition, Honorable Mention for paper “Due Date Setting in a Time Competitive Environment.”
- **1990** Royal E. Cabell Terminal Year Fellowship awarded by the McCormick School of Engineering of Northwestern University.
- **1989** Chosen to attend 1989 ORSA Doctoral Colloquium.
- **1988** Best Teaching Assistant in Industrial Engineering Award by the Northwestern Chapter of Tau Beta Pi.
- **1987** Walter P. Murphy Fellowship from Northwestern University.
- **1987** Turkish Education Foundation Fellowship to attend Northwestern University.

Grants

- “Optimal Learning in Dynamic Matching,” M-Cubed Program, University of Michigan, Position: Co-PI, May 2020-April 2022.
- Incentive mechanism Design for Enhanced Supplier Selection and Operational Performance, Ford Motor Company, \$152,267. Position: PI, May 2018-April 2021.
- “Distribution Free Inventory Control for Supply Chains with General Topologies,” M-cubed Program, University of Michigan, \$60000. Position: Co-Pi. 2014-2015.
- “ITR: Multiattribute Negotiation for Dynamic Supply Chains,” National Science Foundation, 2002-2007, \$837,000. Position: Co-PI, Project Director: Michael Wellman
- “Repair/Maintenance and Setup Capacity-Optimal Size and Operation,” National Science Foundation, 2000-2004, \$200,522. Position: Project Director.
- “Life Cycle Economics for Reconfigurable Manufacturing Systems,” NSF Center for Reconfigurable Machining Systems- \$120,000/yr in direct costs (position: project co-director). July 1999-June 2003. I also served as director of cluster of projects and directed approximately \$400,000/yr worth of projects in this center.
- “Stochastic Inventory Control and Vehicle Routing,” Ford Motor Company- \$150,000, (Position: Project Director, Co-PI: John Birge). April 2000-April 2003.
- “Dynamic Stochastic Scheduling,” National Science Foundation CAREER Grant, 1996-2001, \$200,000 plus up to \$100,000 in matching grants, Position: Project Director.
- “Simultaneous Due Date Setting, Release Control and Sequencing,” National Science Foundation, 1995-1998, \$131,493, Position: Project Director, Co-PI: John Birge.
- “Analysis and Control of Assembly Systems,” National Science Foundation, 1993-1997, \$88,961, (plus \$10,000 for Undergraduate Research Experience grants). Position: Project Director.
- “Manufacturing Processes and Planning,” National Science Foundation and Greenfield Coalition, 1995-1998, \$100,000. Position: Project Director, Co-Pis: Elijah Kannatey-Asibu, Susan Montgomery.

- “Managing Demand, Capacity and Product Mix Complexity,” Tauber Manufacturing Institute Faculty Fellowship, \$120,000 in direct costs (Project Co-Director with Shannon Anderson) July 1996-July 1999.
- “Life Cycle Economics for Reconfigurable Machining Systems,” NSF Center for Reconfigurable Machining Systems- \$77,000 in direct costs, August 1997-August 1998 (Position: Co-PI, PD: John Birge).
- “Life Cycle Economics for Reconfigurable Machining Systems,” NSF Center for Reconfigurable Machining Systems- \$140,000 in direct costs, August 1996-August 1997 (Position: Co-PI, PD: John Birge).
- “Factory Design Tool Development,” Industrial Design Corporation and U.S. Display Consortium, March 1996-1997, \$82,116- Position: Principal Investigator (Yavuz Bozer-Project Director and Principal Investigator).
- “Factory Optimization and Control,” Center for Display Manufacturing, \$60,000 in direct costs, June 1997-May 1998, Position: Project Director.
- “Production Scheduling and Control,” Center for Display Manufacturing, \$65,000 in direct costs, June 1996-May 1997, Position: Project Director.
- “Assessment of Machining Systems Integration,” General Motors, 1995, \$16,039, Position: Project Director, Co-PI: Kathy Stecke.
- “Capacity Planning Under Uncertainty,” Ford Motor Company, 1995-1997, \$100,000, Position: Project Director, Co-PI: John Birge.
- “Throughput and Production Control,” Center for Display Manufacturing, 1995, \$56,000 in direct costs, Position: Project Director.
- “Throughput Analysis and Production Control in Flat Panel Display Manufacturing,” Center for Display Manufacturing, 1994, \$49,000 in direct costs, Position: Project Director.
- “Stochastic Modelling and Algorithms for Dynamic Route Guidance,” IVHS Center of Excellence, 1993-1994, \$30,000 in direct costs, Position: Co-Project Director with Michael Wellman and Demosthenis Teneketzis.
- “Planning and Scheduling in Japanese Semiconductor Manufacturing,” Air Force Office of Scientific Research, Program in U.S.-Japan Technology Management, 1993-1995, Position: Faculty Associate, (Project Director: Jeff Liker) subproject amount nearly \$50,000 in direct costs.
- “Scheduling of Hot Deformation Processes,” Whirlpool Corporation, 1992-1993, \$25,000, Position: Co-Project Director with M. Haghi.
- “Analysis of Assembly Systems,” Rackham School, University of Michigan, 1992-1993, \$8,073, Position: Project Director.