

CYNTHIA BARNHART
Professor of Civil and Environmental Engineering, and
Engineering Systems
School of Engineering, Associate Dean for Academic Affairs
Co-Director, Operations Research Center
INFORMS President

EDUCATION:

Massachusetts Institute of Technology, S.M., Dec. 1985
Massachusetts Institute of Technology, Ph.D., Sept. 1988

PRINCIPAL FIELDS OF INTEREST:

Mathematical programming models and large-scale optimization approaches for transportation and logistics systems; service network design and operations planning for scheduled transportation systems, robust optimization; dynamic scheduling.

SELECTED MIT POSITIONS:

Department of Civil and Environmental Engineering

Group Leader, Engineering Systems, (Sept. 2001 – Aug. 2002).
Head, Sustainable Transportation and Infrastructure Initiative, (2003 – 2004).

Operations Research Center

Co-Director, Operations Research Center, (2/1/99-June 2002).
Co-Director, Operations Research Center, (July 1, 2006 - present).

Center for Transportation and Logistics

Co-Director, (Sept. 2001 – July 2003).

Institute

School of Engineering, Associate Dean for Academic Affairs (9/1/07-present).

SELECTED SERVICE ACTIVITIES:

President, INFORMS (2008).

Member, NSF Directorate for Engineering Advisory Committee (2007–present).

President, INFORMS, Transportation Science and Logistics Society (2006).

Area Editor, *Operations Research*, Transportation (2002-2005).

Chair, NSF Workshop on Transportation Systems (1998-1999).

President of Inform’s Forum on Women in OR/MS (1996-1997).

Co-founder and Co-Chair, Transportation Science Section Intermodal Special Interest Group (1994-1998).

SELECTED AWARDS:

Presidential Young Investigator Award , National Science Foundation.

General Electric Foundation Junior Faculty Career Award.

Mitsui Career Development Professorship.

2003 Franz Edelman Award for Achievement in Operations Research and the Management Sciences (2nd Prize), “Planning the United Parcel Service Air Network,” with Ware, K., Wilson, A.M., and Armacost, A. P., INFORMS “Creating Value in the Extended Enterprise,” Phoenix, Arizona, May 4-6, 2003.

2003 First Prize Award for Best Paper in Transportation Science & Logistics, “Composite Variable Formulations For Express Shipment Service Network Design,” with Armacost, and K. A. Ware, The Section on Transportation Science and Logistics of INFORMS, Atlanta, Georgia, October 19-22, 2003.

2005 WORMS Award for the Advancement of Women in OR/MS,
INFORMS Annual Meeting, San Francisco, CA, November 13-16, 2005

2007 Roger-Charbonneau Prize for best book published, Handbook in
Transportation, (co-edited with Gilbert Laporte, HEC Montreal).

SELECTED PUBLICATIONS:

Books and Book Chapters

Ball, Michael, Barnhart, Cynthia, Nemhauser, George, and Odoni, Amedeo,
“Managing Air Traffic and Airline Operations for Schedule Reliability,”
Operations Research Handbook on Transportation, Gilbert Laporte and
Cynthia Barnhart (co-editors), Elsevier, Amsterdam, December 2006.

Barnhart, C. and Shen, S., “Logistics Service Network Design for Time-
Critical Delivery,” PATAT 2004, Springer Lecture Notes in Computer Science
Vol. 3616, Springer-Verlag, Berlin, pp. 86-105, 2005.

Barnhart, C., Cohn, A.M., Johnson, E.L., Klabjan, D., Nemhauser, G.L., and
Vance, P.H., “Airline Crew Scheduling,” Handbook of Transportation Science,
(2nd Edition) Randolph W. Hall (editor), Kluwer Academic Publishers,
Norwell, MA, pp. 517-560, 2003.

Barnhart, C., Krishnan, N., and Vance, P., “Multicommodity Flow
Problems,” (by invitation) for publication in Encyclopedia of Optimization,
Vol. 3, pp. 493-501, co-edited by Prof. C. A. Floudas and Prof. P. M. Pardalos,
Kluwer Academic Publishers, Norwell, Mass., 2001.

Barnhart, C., Johnson, E.L., Nemhauser, G., and Vance, P.H., “Crew
Scheduling,” Handbook of Transportation Science, Randolph W. Hall (editor),
Kluwer Academic Publishers, Norwell, MA, pp. 493-521, 1999.

“Airlines Operations Research” with Dr. Kalyan Talluri, Design and
Operation of Civil and Environmental Engineering Systems, pp. 435-469,
edited by Profs. Arthur McGarity and Charles ReVelle, 1997.

Barnhart, C., Lu, F., and Sheno, R., “Integrated Airline Schedule Planning,”
Operations Research in the Air Industry, International Series in Operations
Research and Management Science, Vol. 9, pp. 384-403, edited by Prof. Gang
Yu, Kluwer Academic Publishers, 1997.

Barnhart, C., Hane, C.A., and Vance, P. H., "Integer Multicommodity Flow Problems," *Lecture Notes in Economics and Mathematical Systems 450, Network Optimization*, pp. 17-31, Edited by P. M. Parrdalos, D. W. Hearn, and W.W. Hager, Springer Publisher, November 1996.

Barnhart, C., Johnson, E., Anbil, R., and Hatay, L., "A Column Generation Technique for the Long-Haul Crew Assignment Problem," *Optimization in Industry Volume 2, Mathematical Programming and Modeling Techniques in Practice*, pp. 7-24, Dr. Tito A. Ciriani and Professor Rob Leachman, Editors, John Wiley & Sons, Ltd., July 1994.

Barnhart, C., Johnson, E.L., Nemhauser, G.L., Savelsbergh, M.W.F., and Vance, P.H., "Branch-and- Price: Column Generation for Solving Huge Integer Programs," *Mathematical Programming, State of the Art 1994*, John R. Birge and Katta G. Murty, Editors, The University of Michigan, 1994.

Anbil, R., Barnhart, C., Hatay, L., Johnson, E. L., and Ramakrishnan, V. S., "Crew Pairing Optimization at American Airlines Decision Technologies," *Optimization in Industrial Environments*, pp. 31-36, Dr. Tito A. Ciriani and Professor Rob Leachman, Editors, John Wiley & Sons, Ltd., 1992.

Papers in Refereed Journals

Jiang, Hai, and Barnhart, Cynthia, "Dynamic Airline Scheduling," *Transportation Science*, to appear.

Barnhart, Cynthia, Farahat, Amr, and Lohatepanont, Manoj, "Airline Fleet Assignment with Enhanced Revenue Model," accepted for publication in *Operations Research*, to appear.

Bryant, C., Sakamoto, P., Armacost, A., Kolitz, S., Barnhart, C., and Abramson, M., "Robust Planning for Effects Based Operations," accepted at *Military Operations Research*, to appear.

Koepke, Corbin G., Armacost, Andrew P., Barnhart, Cynthia, and Kolitz, Stephan E., , "An Integer Programming Approach to Support the U.S. Air Force's Air Mobility Network," *Computers & Operations Research*, Vol. 35, Issue 6, 1771-1788, June 2008.

Kim, Daeki, and Barnhart, Cynthia, "Flight Schedule Design for a Charter Airline," Special Issue of *Computers and Operations Research* on

Transportation and Logistics, Vol. 34, Issue 6, pages 1516-1531, June 2007.

Lan, Shan, John-Paul Clarke, and Barnhart, Cynthia, "Planning for Robust Airline Operations: Optimizing Aircraft Routings and Flight Departure Times to Minimize Passenger Disruptions," Transportation Science, Vol. 40, No. 1, pp. 15-28, 2006.

Cohn, Amy and Barnhart, Cynthia, "Composite-Variable Modeling for Service Parts Logistics," Annals of Operations Research, Special Issue on Transportation and Logistics Optimization Models and Solution Algorithms, <http://dx.doi.org/10.1007/s10479-006-0011-1>, 2006.

Bratu, Stephane and Barnhart, Cynthia, "Flight Operations Recovery: New Approaches Considering Passenger Recovery," Journal of Scheduling, Vol. 9:3, pp.279-298, 2006.

Bratu, Stephane and Barnhart, Cynthia, "An Analysis of Passenger Delays Using Flight Operations and Passenger Booking Data," Air Traffic Control Quarterly, Vol. 13 (1), pp. 1-27, 2005.

Lohatepanont, Manoj and Barnhart, Cynthia, "Airline Schedule Planning: Integrated Models and Algorithms for Schedule Design and Fleet Assignment," Transportation Science, Vol. 38, No. 1, pp. 19-32, February 2004.

Armacost, A.P., Barnhart, Cynthia, Ware, K.A., and Wilson, A.M., "UPS Optimizes its Air Networks," Interfaces, Vol. 34, No. 1, pp. 15-25, January-February 2004.

Barnhart, Cynthia and Cohn, Amy, "Airline Schedule Planning: Accomplishments and Opportunities," Manufacturing and Service Operations Management, Vol. 6, No. 1, pp. 3-22, Winter 2004.

Clark, S. J. (1st Lt.), Barnhart, C., and Kolitz, S. E., "Large-Scale Optimization Planning Methods for the Distribution of United States Army Munitions," Special issue on Defense Transportation, Mathematical and Computer Modeling, Vol. 39, Issues 608, pp. 697-714, 2004.

Nielsen, C. A. (1st Lt.), Armacost, A. P. (Major), Barnhart, C., and Kolitz, S. E., "Network Design Formulations for Scheduling US Air Force Channel Route Missions," Mathematical and Computer Modelling, Vol. 39, Issues 6-8, pp. 925-943, 2004.

Cohn, Amy and Barnhart, C., "Improving Crew Scheduling by Incorporating Key Maintenance Routing Decisions," Operations Research, Vol. 51, No. 3, pp. 387-396, May/June 2003.

Barnhart, Cynthia, Belobaba, Peter, and Odoni, Amedeo R., "Applications of Operations Research in the Air Transport Industry," Transportation Science, Vol. 37, No. 4, November 2003.

Armacost, A., Barnhart, C., and Ware, K., "Composite Variable Formulations for Express Shipment Service Network Design," Transportation Science, Focused issue on freight transportation, Vol. 36, No. 1, pp. 1-20, February 2002

Krishnan, N., Barnhart, C., Kim, D., and Ware, K., "Network Design for Express Shipment Delivery in," Computational Optimization and Applications, Vol. 21, No. 3, pp. 239-262, March 2002.

Kniker, T., Barnhart, C., and Lohatepanont, M., "Itinerary-Based Airline Fleet Assignment," Transportation Science, Vol. 36, No. 2, pp. 199-217, May 2002.

Rexing, B., Barnhart, C., *Kniker, T., Jarrah, A., and Krishnamurthy, N., "Airline Fleet Assignment with Time Windows," Transportation Science, Vol. 34, No. 1, pp. 1-20, February 2000.

Barnhart, C., Hane, C.A., and Vance, P.H., "Using Branch-and-Price-and-Cut to Solve Origin-Destination Integer Multicommodity Flow Problems," Operations Research, Vol. 48, No., 2, pp.318-326, March-April 2000.

Barnhart, C., Jin, H., and Vance, P., "Railroad Blocking: A Network Design Application," Operations Research , Vol. 48, No. 4, pp.603-614, July-August 2000.

Kim, D., Barnhart, C., Ware, K., and Reinhardt, G., "Multimodal Express Package Delivery: A Service Network Design Application," Transportation Science, Vol. 33, No. 4, pp. 391-407, November 1999.

Eberlein, X.J., Wilson, N.H.M., Bernstein, D. and Barnhart, C., "The Real-Time Deadheading Problem in Transit Operations Control," Transportation Research-B, Vol. 32, No. 2, pp. 77-100, 1998.

Barnhart, C. and Johnson, E.L., Nemhauser, G.L., Savelsbergh, M.W.F., and Vance, P.H., "Branch-and- Price: Column Generation for Solving Huge Integer Programs," Operations Research, Vol. 46, No. 3, pp. 316-329, May-June 1998.

Barnhart, C., and Shenoi, R., "An Approximate Model and Solution Approach for the Long-Haul Crew Pairing Problem," Transportation Science, Vol. 32, No. 3, pp. 221-231, August 1998.

Barnhart, C., Boland, N.L., Clarke, L.W., Johnson, E.L., Nemhauser, G.L., and Shenoi, R.G., "Flight String Models for Aircraft, Fleeting and Routing," Transportation Science, Focused Issue on Airline Optimization, Vol. 32, No. 3, pp. 208-220, August 1998.

Newton, H.N., Barnhart, C., and Vance, P.H., "Constructing Railroad Blocking Plans to Minimize Handling Costs," Transportation Science, Focused Issue on Rail Optimization, Vol. 32, No. 4, pp. 330-345, November 1998.

Vance, P., Barnhart, C., Johnson, E.L., and Nemhauser, G.L., "Airline Crew Scheduling: A New Formulation and Decomposition Algorithm," Operations Research 188-200, March-April 1997 (Vol. 45, No. 2).

Barnhart, C. and Schneur, R. R., "Air Network Design for Express Shipment Service" Operations Research, 852-863, Nov.-Dec. 1996 (Vol. 44, No. 6).

Barnhart, C., Hatay, L., and Johnson, E. L., "Deadhead Selection for the Long-Haul Crew Pairing Problem," Operations Research, Vol. 43, 3, pp. 491-499, 1995.

Hane, C., Barnhart, C., Johnson, E. L., Marsten, R. E., Nemhauser, G. L., and Sigismondi, G., "The Fleet Assignment Problem, Solving A Large Integer Program," Mathematical Programming, Vol. 70, 2, pp. 211-232, 1995.

Barnhart, C. and Kim, D., "Routing Models and Solution Procedures for Regional Less-Than-Truckload Operations," Annals of Operations Research Vol. 61, pp. 67-90, 1995.

Barnhart, C., Hane, C., Johnson, E., and Sigismondi, G., "A Column Generation and Partitioning approach for Multi-Commodity Flow

Problems," Telecommunication Systems 3, 239-258, J.C. Baltzer AG, Science Publishers, 1995.

Vance, P. H., Barnhart, C., Johnson, E. L., and Nemhauser, G. L., "Solving Binary Cutting Stock problems by Column Generation and Branch-and-Bound," Computational Optimization and Applications, 3, 111-130, Kluwer Academic Publishers, 1994.

Barnhart, C., "Dual-Ascent Methods for Large-Scale Multi-Commodity Flow Problems," Naval Research Logistics, Vol. 40, pp. 305-324, 1993.

Barnhart, C., Ratliff, H., "Modeling Intermodal Routing," Journal of Business Logistics, Volume 14, No.1, pp. 205-223, 1993.

Barnhart, C., Johnson, E., Nemhauser, G., Sigismondi, G. and Vance, P., "Formulating a Mixed Integer Programming Problem to Improve Solvability," Operations Research, Volume 41, No. 6, pp. 1013-1019, November-December 1993.

Barnhart, C. and Sheffi, Y., "A Network-Based Primal-Dual Heuristic for the Solution of Multi-commodity Network Flow Problems," Transportation Science, Vol. 27, No. 2, pp. 102-117, May 1993.

Sheffi, Y. and Barnhart, C., "XNET: Extended Traffic Assignment Model," Journal of Transportation Engineering, Volume 113, Number 4, pp. 450-462, July 1987.

PRESENTATIONS (2007 – Present):

Barnhart, Cynthia, "Service Network Design: Applications in Transportation and Logistics," Lunch Seminar, MIT Center for digital Business, March 21, 2007, Cambridge, MA

Barnhart, Cynthia, "OR Educators Report Card," INFORMS 2007 Conference on Operations Research Practice, Vancouver, BC, April 29-May 1, 2007.

Barnhart, Cynthia, "Robust Airline Scheduling," R3 Robust planning and Rescheduling in Railways, Seminar on Railway Practice, Utrecht, Amsterdam, April 18-19, 2007.

Barnhart, Cynthia, “What Does Operations Research have to Do with Mathematics,” Association of Undergraduates in Mathematics and The Association of Women in Mathematics, Dartmouth, NH, May 30, 2007.

Barnhart, Cynthia, “Robust and Dynamic Airline Scheduling,” TRISTAN VI, Phuket Island, Thailand, June 10-15, 2007.

Barnhart, Cynthia, “Robust Network Schedule and Route Design,” INFORMS International Meeting, Puerto Rico, July 8-11, 2007.

Barnhart, Cynthia, “Airline Optimization: If we are so good at it, why are things so bad?” Plenary Speaker, Optimizaton Research Symposium: Recognizaing Professor George Nemhauser’s Contributions to the Field of Operations Research, George Tech Hotel and Conference Center, Atlanta, Georgia, July 26 – 27, 2007.

Barnhart, Cynthia, “Airline Optimization: If we are so good at it, why are things so bad?” INFORMS Boston Chapter, Emptoris, Inc., Burlington, MA, September 18, 2007.

Barnhart, Cynthia, “Approaches to Airline Industry Challenges: Airline Schedule Planning and Recovery,” presented lecture at MIT-Amadeus Annual Event of 2007 as part of Global Airline Industry Consortium at MIT, Nice, Sophia Antipolis, France, October 11, 2007.

Barnhart, Cynthia, “Airline Optimization,” Fine Arts Graduate Program, Boston University, MA, October 16, 2007.

Barnhart, Cynthia, “Airline Optimization: If we are so good at it, why are things so bad?” Transportation Seminar Series, University of California, Berkeley, CA, November 2, 2007.

Barnhart, Cynthia, “INFORMS 2008: Doing Good with Good OR,” INFORMS Combined Colloquia, Seattle, WA, November 2-3, 2007.

Barnhart, Cynthia and Marla, Lavanya, “Robust Optimization for Large-scale, Network-based Resource Allocation Problems,” INFORMS Annual Meeting, Seattle, WA, November 4-5, 2007.

Barnhart, Cynthia, Harsha, Pavithra, and Parkes, David, “Activity Rules for Ascending Price Combinatorial Auctions,” INFORMS Annual Meeting, Seattle, WA, November 4-5, 2007.

Barnhart, C., Powell, W., Birge, J, Daskin, M. Magnanti, T., “An Interactive Panel/Audience Discussion: Operations Research in Engineering – Expectations,” INFORMS Annual Meeting, Seattle, WA, November 4-5, 2007.

Barnhart, Cynthia, “MIT’s Global Airline Industry Program: Research on the National Air Transportation System, 2008 IAP Seminar Series, MIT Technology and Policy Program, January 22, 2008.

Barnhart, Cynthia, “Airline Scheduling: Accomplishments, Opportunities, and Challenges,” The 5th Int’l. Conference on Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems (CPAIOR), MAY 20-23, 2008, Paris, France.

Barnhart, Cynthia, “Congestion and Delays: Passenger-Centric Analyses,” MIT Airline Industry Consortium Executive Education Course, *The Airline Industry: Recent Developments and New Challenges*, June 11-12, 2008, Massachusetts Institute of Technology, Cambridge, MA.

Barnhart, Cynthia, “What I learned from Ellis about Airline Scheduling,” Ellis Johnson Symposium, Grand Cayman, Cayman Islands, July 24, 2008.

STUDENTS:

Doctoral Students

Harsha, Pavithra, “Combinatorial Auctions for Aviation,” co-supervised with Prof. David Parkes (Harvard), August 2008.

Jiang, Hai, “Dynamic Airline Scheduling and Robust Airline Schedule De-Peaking,” August 2006.

Farahat, Amr, “Network Design Models and Algorithms,” June 2004.

Shen, Su, "Logistics Service Network Design: Models, Algorithms, and Applications," June 2004.

Lan, Shan, "Planning for Robust Airline Operations: Optimizing Aircraft Routings and Flight Departure Times to Achieve Minimum Passenger Disruptions," June 2003.

Bratu, Stephane, "Airline Customer Service Network Design and Operations," November 2003.

Lohatepanont, Manoj, "Airline Fleet Assignment and Schedule Design: Integrated Models and Algorithms," February 2002.

Cohn, Amy Mainville, "Composite-Variable Modeling for Large-Scale Problems in Transportation and Logistics," June 2002.

Armacost, Andrew P., "Composite Variable Formulations for Express Shipment Service Network Design," June 2000.

Jauffred, Francisco, "Robust Planning in Transportation: Models & Algorithms," January 1998.

Kniker, Timothy, "Itinerary-Based Airline Fleet Assignment," May 1998.

Jin, Hong "Designing Robust Railroad Blocking Plans," June 1998.

Kim, Daeki, "Large-Scale Transportation Service Network Design: Models, Methods and Applications," May 1997.

Shenoi, Rajesh, "Integrated Airline Schedule Optimization: Models and Solution Methods," June 1996.

Borsi, John, "Cyclic Scheduling with Spacing Constraints", joint supervision with J. VandeVate, completed January 1994, School of Industrial and Systems Engineering, (Georgia Institute of Technology).

Snowden, Jane L. "Workflow Control for Surges from a Batch Work Station", joint supervision with Leon McGinnis, August 1994, School of Industrial and Systems Engineering, (Georgia Institute of Technology).

Vance, Pamela, "Airline Crew Scheduling, Large-Scale Distribution, and the Cutting Stock Problem," August 1993, School of Industrial and

Systems Engineering, (Georgia Institute of Technology) (co-supervised with Prof. G.L. Nemhauser of Georgia Institute of Technology).

Master's Students

DeGregory, Keith W., "Optimization-Based Allocation of Force Protection Resources in an Asymmetric Environment," SM June 2007.

Martin, Kiel, "Dynamic Planning Under Uncertainty for Theater Airlift Operations," SM June 2007.

Marla, Lavanya, "Robust Optimization for Network-based Resource Allocation Problems under Uncertainty" May 2007.

Bryant, Corban H., "Robust Planning for Effects-Based Operations," June 2006.

Sakamoto, Philemon, "UAV Mission Planning Under Uncertainty," June 2006.

Smith, Tyler B., "Decision Algorithms for Unmanned Underwater Vehicles during Offensive Operations," May, 2006.

Nilaus, Christian, "Real-Time Resource Allocation for Courier Operations," Center for Traffic and Transport, Technical University of Denmark, October 7, 2005 (co-supervisor with Prof. Oli B. Madsen).

Leroyer, Pierre, "Robust Crew Pairing: Delays Analysis and Implementation of Optimization Approaches," August 2005.

Hickie, Mark M., "Behavioral Representation of Military Tactics for Single-Vehicle Autonomous Rotorcraft via Statecharts," June 2005.

Cheung, Jennifer C., "Express Shipment Pick-Up and Delivery: Evaluating Airline Recovery Options, June 2005.

Tardy, Raphael, "Optimization Models and Algorithms for Large-Scale, Capacity Constrained Pick-up and Delivery Problems with Time Windows," June 2005.

Malasky, Jeremy, "Human Machine Collaborative Decision Making in a Complex Optimization System," June 2005.

- Lesnaia, Ekaterina, "Optimizing Safety Stock Placement in General Network Supply Chains," September 2004.
- Samardi, Sepehr, "Minimizing Airline Passenger Delay through Integrated Flight Scheduling and Aircraft Routing," June 2004.
- Koepke, Corbin, "Multi-Mission Optimized Re-Planning in Air Mobility Command's Channel Route Execution," June 2004.
- Agbokou, Biova, "Robust Airline Schedule Planning: Review and Development of Optimization Approaches," June 2004.
- Marron, Joshua, "A Static Stochastic Model for Air Traffic Management," M.Eng. Thesis, 2004.
- Zarybnisky, Eric J., "Allocation of Air Resources Against an Intelligent Adversary," June 2003.
- Bowers, Brian N., "Enhancing the Lean Enterprise Through Supply Chain Design: Establishing Remarketing and Reverse Logistics at a High Tech Firm," June 2003.
- Dobrusky, Fernando, "Optimal Location of Cross-Docking Centers for a Distribution Network in Argentina," MLOG, June 2003.
- Silver, Jeffrey, "Optimization Tools for the Freight Brokerage Industry," MLOG, June 2003.
- Nielsen, Christopher, "Channel Design for Aircraft Missions," June 2002.
- Tandiano, Wilson, "Service Parts Logistics," January 2002.
- Clark, Steven, "Supply Chain Design for Logistics Networks," June 2001.
- Barth, Christopher, "Composite Mission Variable Formulation for Real-Time Mission Planning," June 2001.
- Paskowitz, Michael, "An Approach to Planning and Control of Stochastic Network Flows," M-Eng. in EECS, June 2000.
- Lohatepanot, Manoj, "Flight Schedule Construction," September 1998.

- Coop, Andrew E, "Contingency Munitions Logistics Planning and Control: A Framework for Analysis," June 1998.
- Krishnan, Niranjana, "Decomposition Approaches for Express Shipment Service Design," January 1998.
- Rexing, Brian, "Fleeting with Time Windows," May 1997.
- Lu, Fang, "Integrated Airline Scheduling Models and Algorithms," May 1997.
- Crocker, Daniel T., "Analysis of Global Manufacturing Strategies for High Volume High Technology Products," co-supervised with Prof. Steve Graves, 1997.
- Yu, Jung, "Air Traffic Flow Management: Weather Models," May 1996.
- Gutierrez, Cristian, "Development and Applications of a Linear Programming Model to Optimize Production and Distribution of a Manufacturing Company," February 1996.
- Lochan, Rajiv C., "Long Haul Fleet Assignment: Models, Methods and Applications," May 1995.
- Armacost, Andrew P., "Modeling Railroad Terminal Operations: Supporting Real-Time Network Planning and Control," May 1995.
- Juan, C. J., "Multi-Level Rail Service," May 1994.
- Voigtlaender, Christian, "Intermodal Trends and Models," May 1994.
- Kim, Daeki, "Models and Solution Procedures for Intermodal Routing," September 1993.
- Shenoi, Rajesh, "Alternate Formulations and Solution Procedures for the Long-Haul Crew Scheduling Problem," December 1993.