

DISSERTATIONS AND THESES DIRECTED

PH.D. DISSERTATIONS DIRECTED:

1. Sen, Suvrajeet, *Extreme Point Mathematical Programming Problem*, July, 1982. (Faculty, Ohio State University)
2. Saraf, Sampat, *Financial Considerations in Multiperiod Capacity Expansion Planning for the Electric Utility Industry*, August, 1982, Co-Chairman: A. L. Soyster. (Self-Employed, India)
3. Rajan, Roby, *Cooperative Phenomena in Oligopolistic Markets*, July, 1983. (World Bank)
4. Cavalier, Tom, *Static and Sequential Location-Allocation Problems on Networks and Areas with Probabilistic Demands*, August, 1983. (Faculty, Pennsylvania State University)
5. Myers, Danny C., *The Design of Branch and Bound, Lagrangian Relaxation and Subgradient Optimization Strategies for Mixed-Integer Programming Problems*, August, 1984. (Faculty, Bowling Green University)
6. Adams, Warren P., *Mixed-Integer Bilinear Programming Problems with Extensions to Zero One Quadratic Programs*, March, 1985. (Faculty, Clemson University)
7. Nordai, Frederick L., *Balanced, Capacitated, Location-Allocation Problems on Networks with a Continuum of Demand*, June, 1985. (**Awarded the first place prize in the inaugural national IIE Doctoral Dissertation Competition, 1986.**) (Faculty, Shippensburg University)
8. Staschus, Konstantin, *Renewable Energy in Electric Utility Capacity Planning*, May, 1985. (Director of Electric Utilities, Berlin, Germany)
9. Leleno, Joanna M., *A Mathematical Programming-Based Analysis of a Two-Stage Model of Interacting Producers*, July, 1987. (Faculty, Virginia Commonwealth University)
10. Ulular, Osman, *A Primal-Dual Conjugate Subgradient Algorithm for Large-Scale/Specially Structured Linear Programming Problems*, August, 1988. (AT&T Bell Labs)
11. Alameddine, Amine, *A New Reformulation-Linearization Technique for the Bilinear and Related Problems, with Applications to Risk Management*, October, 1990. (SAP Labs, Inc.)
12. Sivanandan, R., *A Linear Programming Approach for Synthesizing an Origin-Destination (O-D) Trip Table From Link Traffic Volumes* (Civil Engineering Department), September, 1991, Co-Chairman: A. G. Hobeika. (Faculty, Indian Institute of Technology, Madras, India)
13. Lee, Youngho, *The Polyhedral Structure of Several Combinatorial Optimization Problems with Application to a Naval Defense Problem*, July, 1992. (**Awarded the second place prize in the national IIE Doctoral Dissertation Competition, 1993.**) (Faculty, University of Korea, Seoul, Korea)
14. Choi, Gyunghyun, *Subgradient Deflection Strategies for Nondifferentiable Optimization Problems with Applications to Lagrangian Duality*, December, 1993. (Faculty, Hanyang University, Korea)
15. Jain, Nikhil, *Cell Design in a Cellular System Using Guard Channels, Call Queueing and Channel Borrowing*, December, 1993, Co-Chairman: J. Daigle. (Chief Technology Advisor for Qualcomm, India)
16. Smith, Ernest P., *An Optimal Replacement - Design Model for a Reliable Water Distribution Network System*, October, 1994. (Faculty, Air Force Institute of Technology)

17. Tuncbilek, Cihan H., *Polynomial and Indefinite Quadratic Programming Problems: Algorithms and Applications*, November, 1994. (Citigroup, Istanbul, Turkey)
18. Tang, Stanley C., *Numerical Methods for Multiserver Discrete Time Queues with Batch Markovian Arrivals*, January, 1995, Co-Chairman: J. Daigle. (Faculty, University of Hong Kong)
19. Driscoll, Patrick L., *Exploiting Special Structures in Constructing a Hierarchy of Relaxations for Mixed-Integer Zero-One Problems*, May, 1995. (Faculty, U.S. Military Academy at West Point)
20. Krishnamurthy, Ravi S., *Enhanced Intersection Cutting Plane and Reformulation-Linearization Enumeration Based Approaches for Linear Complementarity Problems*, Mathematics Department, May, 1995. (Ernst & Young Consulting, Texas)
21. Ozbay, Kaan, *A Framework for Dynamic Traffic Diversion During Non-Recurrent Congestion: Models and Algorithms*, Civil Engineering Department, Co-Chairman: A. G. Hobeika, April, 1996. (Faculty, Rutgers University)
22. Mohammed, Salem N., *Mixed-Integer Mathematical Programming Optimization Models and Algorithms for an Oil Tanker Routing and Scheduling Problem*, Mathematics Department, March, 1997. (Faculty, Kuwait University)
23. Al-Loughani, Intesar, *Algorithmic Approaches for Solving the Euclidean Distance Location and Location-Allocation Problems*, August, 1997. (Faculty, Kuwait University)
24. Suharko, Arief B., *Tactical Network Flow and Discrete Optimization Models and Algorithms for the Empty Railcar Transportation Problem*, December, 1997. (**Awarded the second place prize in the national IIE Pritsker Doctoral Dissertation Competition, 1998.**) (Head of Enterprise Risk Management Policy & Process Department, PT Bakrie & Brothers, Indonesia)
25. Park, Taehyung, *Network Design and Analysis Problems in Telecommunications, Location-Allocation, and Intelligent Transportation Systems*, June, 1998. (Faculty, Soongsil University, Seoul, Korea)
26. Subramanian, Shivaram, *Optimization Models and Analysis of Routing, Location, Distribution, and Design Problems*, April, 1999. (**Awarded the first place prize in the national IIE Pritsker Doctoral Dissertation Competition, 1999.**) (IBM T. J. Watson Research Center)
27. Smith, Jonathan Cole, *Tight Discrete Formulations to Enhance Solvability with Applications to Production, Telecommunications, and Air Transportation Problems*, April, 2000. (**Awarded the first place prize in the national IIE Pritsker Doctoral Dissertation Competition, 2000, and the first place prize in the Paul E. Torgersen Graduate Research Excellence Award competition, 2000.**) (Faculty, University of Florida)
28. Baik, Hojong, *Development of Optimization and Simulation Models for the Analysis of Airfield Operations*, CEE Department: Co-Chairman A. A. Trani, May 22, 2000. (Faculty, University of Missouri-Rolla)
29. Fraticelli, Barbara M. P., *Semidefinite Cuts and Partial Convexification Techniques with Applications to Continuous Nonconvex Optimization, Stochastic Integer Programming, and Facility Layout Problems*, April, 6, 2001. (**Awarded the first place prize in the national IIE Pritsker Doctoral Dissertation Competition, 2001, and the third place prize in the College of Engineering Paul E. Torgersen Graduate Research Excellence Award competition.**) (Instructor, Virginia Tech)
30. Staats, Raymond W., *An Airspace Planning and Collaborative Decision Making Model under Safety, Workload, and Equity Considerations*, April 4, 2003. (**Awarded the second place prize in the national IIE Pritsker Doctoral Dissertation Competition, 2004, and the 2003 FAA Air Transportation Center of Excellence Student of the Year Award.**) (President, Gadsden State Community College, Alabama)

31. Jeenanunta, Chawalit, *The Approach-dependent, Time-dependent, Label-constrained Shortest Path Problem and Enhancements for the CART Algorithm with Application to Transportation Systems*, April 30, 2004. (Faculty, Management Technology, SIIT, Thailand)
32. Lim, Churlzu, *Nondifferentiable Optimization of Lagrangian Dual Formulations for Linear Programs with Recovery of Primal Solutions*, June, 2004. (**Awarded the second place prize in the national IIE Pritsker Doctoral Dissertation Competition, 2005.**) (Faculty, University of North Carolina at Chapel Hill)
33. Desai, Jitamitra, *Solving Factorable Programs with Applications to Cluster Analysis, Risk Management, and Control Systems Design*, June, 2005. (Faculty, Nanyang Technological University, Singapore)
34. Jeihani, Mansoureh, *Dynamic Traffic Assignment and User Equilibrium in TRANSIMS*, CEE Department, Co-Chairman: A. G. Hobeika, August, 2005. (Faculty, Morgan State University, Baltimore)
35. McCrea, Michael, *Slot-exchange Mechanisms and Weather-Based Rerouting within an Airspace Planning and Collaborative Decision-Making Model*, April, 2006. (Faculty, U.S. Military Academy at West Point)
36. Zhu, Xiaomei, *Discrete Two-Stage Stochastic Mixed-Integer Programs with Applications to Airline Fleet Assignment and Workforce Planning Problems*, April, 2006. (**Awarded the second place prize in the national IIE Pritsker Doctoral Dissertation Competition, 2007.**) (Risk Analysis Manager, eBay, San Francisco, CA)
37. Bish, Douglas R., *Demand Management in Evacuation Planning: Models, Algorithms, and Applications*, CEE Department, Co-Chairman: A. G. Hobeika, July, 2006. (Faculty, Virginia Tech)
38. Ghoniem, Ahmed, *Enhanced Formulations for Minimax and Discrete Optimization Problems with Applications to Scheduling and Routing*, June, 2007. (Faculty, University of Massachusetts, Amherst)
39. Hill, Justin M., *Shaping the Next Generation Air Transportation System with an Airspace Planning and Collaborative Decision Making Model*, September, 2009. (Analyst, Air Force Staff, The Pentagon)
40. Lunday, Brian J., *Resource Allocation on Networks: Nested Event Tree Optimization, Network Interdiction, and Game Theoretic Methods*, March, 2010. (Faculty, U.S. Military Academy at West Point)
41. Bae, Ki-Hwan, *Integrated Airline Operations: Schedule Design, Fleet Assignment, Aircraft Routing, and Crew Scheduling*, November, 2010. (Analyst, Level-3 Communications, Broomfield, CO)
42. Dalkiran, Evrim, *Discrete and Continuous Nonconvex Optimization: Decision Trees, Valid Inequalities, and Reduced Basis Techniques*, March, 2011. . (**Awarded the second place prize in the national IIE Pritsker Doctoral Dissertation Competition, 2012.**) (Faculty, Wayne State University, Detroit, MI)

M.S. THESES DIRECTED:

Note: The M.S. advisees listed below are self-employed, or completed their Ph. D. and are listed above, or are employed in different companies, mainly in airline, railroad, consulting, manufacturing, and various service, transportation, and finance industries.

1. Baines, Stafford Charles George, *Non-Adjacent Extreme Point Methods for Solving Linear Programming Problems*, July, 1981.
2. Adams, Warren Philips, *A Discrete Location-Allocation Problem*, August, 1981. (**Awarded the second place prize in the national IIE M.S. Student Research Competition, 1982.**)
3. Rios, Minerva, *Air Force Crew Allocation and Scheduling Problem*, July, 1982.
4. Staschus, Konstantin, *Electric Utility Capacity Expansion Planning with the Option of Investing in Solar Energy*, May, 1982. (**Awarded the first place prize in the national IIE M.S. Student Research Competition, 1983.**)
5. Dickey, S. Elizabeth, *Alternative Optimal Solutions with Applications in Nonconvex Programming*, November, 1984.
6. Rajgopal, Parthasarathy, *A Flexible Construction and Improvement Heuristic for the Quadratic Assignment Problem*, May, 1985.
7. Parrish, Edna L., *Generalized Total and Partial Set Covering Problems*, May, 1986.
8. Rizzo, Thomas P., *Capacitated, Unbalanced p -Median Problems on a Chain Graph with a Continuum of Link Demands*, December, 1986.
9. Desai, Rajendra, *Models and Algorithms for a Flexible Manufacturing System*, June, 1987.
10. Kodialam, Muralidharan S., *A Mathematical Programming Based Model and Algorithm for a Two-Stage Production Planning Problem*, June, 1987.
11. Liu, Chiun-Ming, *Special versus Standard Algorithms for Large-Scale Harvest Scheduling Problems*, December, 1988.
12. Carter, Todd B., *A Location-Allocation Model and Algorithm for Optimally Locating Shelters to Minimize Evacuation Times*, September, 1989.
13. Choi, Gyunghyun, *An Exterior Point, Polytope Sliding and Deformation Algorithm for Linear Programming*, October, 1989.
14. Tuncbilek, Cihan H., *A Squared-Euclidean Distance Location-Allocation Problem*, June, 1990.
15. Ramachandran, Sridhar, *A Reformulation-Linearization Based Implicit Enumeration Algorithm for the Rectilinear Distance Location-Allocation Problem*, May, 1991.
16. Puri, Ritu, *Model Development, Testing, and Computer Implementation for a Coal Blending and Distribution Problem*, July, 1991.
17. Marathe, Vikram, *A Discrete Equal Capacity p -Median Problem*, June, 1992.
18. Saifee, Quaid Joher, *Strategic and Tactical Models and Algorithms for the Coal Industry Under the 1990 Clean Air Act*, August, 1992.
19. Wade, Richard B., Jr., *Modeling and Analysis for Scheduling Restaurant Personnel*, August, 1993.
20. Arora, Namita, *Dynamic Estimation of Origin-Destination Trip Tables from Real-Time Traffic Volumes Using Parameter Optimization Methods*, October, 1993.
21. Pendyala, Chandra M., *On the Optimal Location of Transmitters for Micro-Cellular Radio Communication System Design*, July, 1994. (**Awarded the first place prize in the college-wide 1993 Torgersen Award M.S. Thesis competition, College of Engineering, Virginia Polytechnic Institute and State University.**)
22. Brizendine, Laora Whalen, *Low Probability - High Consequence Considerations in a Multiobjective Approach to Risk Management*, July, 1994.

23. Brown, Eric, *A Quadratic Partial Assignment and Packing Model and Algorithm for the Airline Gate Assignment Problem*, March, 1995.
24. Hingorani, Naresh K., *Emulating the Southwest Airline Experience to Forecast Demand for High Speed Rail*, May, 1995.
25. Dias, Neil P., *A Linear Programming Approach for Designing a Herbaceous Biomass Delivery System*, August, 1995. (Co-Chair: Dr. J. Cundiff, BSE Department.)
26. Narayanan, Arvind, *A Linear Programming Approach for Synthesizing Origin-Destination (O-D) Trip Tables Based on a Partial Set of Link Traffic Volumes*, June, 1995. (Civil Engineering Department; Co-Chair: Dr. R. Sivanandan.)
27. Totlani, Rajiv, *Enhanced Lower Bounding Computations and an Algorithm for a Water Distribution Network Design Model*, June, 1996.
28. Tunuguntla, Sai S., *On Finding the Location of an Underwater Mobile Robot Using Optimization Techniques*, August, 1996.
29. Madabushi, Anantha R., *Lagrangian Relaxation/Dual Approaches for Solving Large-Scale Linear Programming Problems*, March, 1997.
30. Subramanian, Shivaram, *Routing Algorithms for Dynamic Intelligent Transportation Networks*, September, 1997. (Co-Chair: Dr. A. A. Trani, CE Department.)
31. Wang, Hongjie, *Global Optimization of Nonconvex Factorable Programs with Applications to Engineering Design Problems*, May, 1998. (**Awarded the first place prize in the national IIE Graduate Research Award competition, 1999.**)
32. Sale, Shrinivas M., *Development of a Computer Model to Study the Occupancy of ARTCC Sectors*, June, 1998. (Civil Engineering Department, Co-Chair: Dr. A. A. Trani.)
33. Ansari, Zafar, *Limited Memory Space Dilation and Reduction Algorithms*, July, 1998.
34. Lei, Peng, *A Linear Programming Method for Synthesizing Origin-Destination (O-D) Trip Tables from Traffic Counts for Inconsistent Systems*, July, 1998.
35. Ramahi, Muhannad H., *Resident Scheduling Problem*, September, 1998.
36. Ozdaryal, Burak, *Exterior Penalty Approaches for Solving Linear Programming Problems*, June, 1999.
37. Kangwalklai, Sasikul, *Time Dynamic Label-Constrained Shortest Path Problems with Applications to TRANSIMS: A Transportation Planning System*, December, 2000.
38. Li, Qing, *Game Theoretic and Analytical Approaches to International Cooperation and Investment Problems*, May 4, 2001.
39. Ganesan, Vikram, *Global Optimization of the Nonconvex Containership Design Problem Using the Reformulation-Linearization Technique*, July 30, 2001. (**Awarded the first place prize in the national IIE Graduate Research Award competition, 2001.**)
40. Zhu, Xiaomei, *A Demand Driven Re-fleeting Approach for Aircraft Assignment Under Uncertainty*, July 18, 2001. (Co-Chairperson: E. K. Bish.) (**Awarded the first place prize in the national IIE Graduate Research Award competition, 2002.**)
41. Desai, Jitamitra, *A Discrete Optimization Approach to Solve the Reader Location Problem for Estimating Travel Times*, April 29, 2002.

42. Ramond, Francois, *Optimal Rostering of Workforce Subject to Cyclic Requirements*, under joint program with *Ecole des Mines de Nantes (EMN)*, October 14, 2003 (Co-Chairman: S. Dauzere-Peres, EMN.)
43. Al-Jazzaf, Mona, *A Mixed-Integer Mathematical Modeling Approach to Exam Timetabling at Kuwait University*, Department of Mathematics, Kuwait University, April, 2006. (Co-Chair: Dr. Salem Al-Yakoob, Mathematics Department, Kuwait University.)