RAKESH NAGI

Department of Industrial and Systems Engineering, 438 Bell Hall
University at Buffalo (SUNY), Buffalo, NY 14260
(716)-645-2427 (Office)
(716)-645-3302 (Office: FAX)
(716)-636-8966 (Home)
E-mail: nagi@buffalo.edu
Home-page: http://www.eng.buffalo.edu/~nagi

1. PROFESSIONAL INTERESTS

Facilities Design, Production Management, Agile Manufacturing, and Military Applications.

2. PROFESSIONAL EDUCATION

Doctor of Philosophy in Mechanical Engineering*
University of Maryland, College Park, Maryland
1991

Master of Science in Mechanical Engineering*
University of Maryland, College Park, Maryland
1989

Bachelor of Engineering in Mechanical Engineering
University of Roorkee, Roorkee, India (now IIT-Roorkee)
1987

*Graduate work performed at the Institute for Systems Research (National Science Foundation sponsored interdisciplinary Engineering Research Center), with significant Industrial and Systems Engineering emphasis.

3. ACADEMIC EXPERIENCE

Chair: June 2006 – present,
Professor: August 2005 – present,
Associate Professor: September 1998 – August 2005,
University at Buffalo Faculty Senate Committee: July 2002 – June 2004,
Director of Graduate Studies: August 1999 – August 2001,
Assistant Professor: September 1993 – August 1998,
Department of Industrial and Systems Engineering,
University at Buffalo, The State University of New York at Buffalo, Buffalo, New York.

Research Associate: December 1991 – August 1993,
Institute for Systems Research,
University of Maryland, College Park, Maryland.

Visiting Researcher: summer 1988, 1989, 1990, 1991, 2002,
INRIA-Lorraine, Institut National de Recherché en Informatique et en Automatique,
Nancy and Metz, France.

Formal Courses Taught:

Graduate:

1. IE 505, Production Planning and Control, (3 credit hours), Fall 2011 (26 students), 2010 (40), 2009 (35), 2008 (46), 2007 (34), 2006 (34), 2005 (28), 2004 (42), 2003 (33), 2002 (48), 2001 (44), 2000 (39), 1998 (21), 1997 (33), 1996 (27), 1995 (33), 1994 (27), 1993 (52).

2. IE 504, Facilities Design, (3 credit hours), Spring 2012 (40 students), 2006 (20), 1999 (8), 1997 (15), 1996 (11), 1995 (6).

3. IE 620, Agile Manufacturing, (3 credit hours), Fall 1999 (4 students), 1997 (7), 1995 (offered as IE 500, 11 students).

4. IE 500, Special Topics - Logistics and Supply-Chain Management, (3 credit hours), Fall 1996 (7 students).

5. IE 684, Networks, Routing and Logistics, (3 credit hours), Fall 2004, (5 students), 2002 (6), 2001 (offered as IE 680, 7 students).

6. IE 661, Scheduling Theory, (3 credit hours), Fall 2005 (3 students), 2003 (5).

Undergraduate:

1. IE 327, Facilities Design, (3 credit hours), Spring 2012 (23 students), 1998 (36), 1997 (35), 1996 (32), 1995 (35), 1994 (45).

2. IE 320, Engineering Economy, (3 credit hours), Spring 2011 (118 students), 2010 (120), 2009 (118), 2008 (120), 2007 (116), 2005 (117), 2004 (84), 2003 (63), 2002 (51), 2001 (43), 1994 (62); Summer 2005 (20), 2004 (23), 2003 (8), 2002 (20).

3. IE 400, Independent Study on Healthcare Management and Information System, (3 credit hours). Spring 2005 (4 students).

4. IE 496, Industrial Internship, (3 credit hours), Spring 2011 (30 students).

Independent Studies:

Spring 2001 (3 GR), 1998 (2 GR), Summer 1997 (1 UG), Fall 1996 (1 GR), Summer 1996 (2 GR), Fall 1995 (1 GR), Spring 1995 (2 UG, 1 GR), Fall 1994 (1 Undergraduate), Spring 1994 (2 Graduate).

New Courses Developed:

Graduate:

1. IE 620, Agile Manufacturing (1995). This advanced graduate level course covers topics, enabling techniques/technologies, and case projects in agile manufacturing. It provides a core set of fundamental tools, example applications and open research topics. The introduction consists of the emerging paradigm shifts in manufacturing strategy and agile manufacturing as an answer to global competitiveness. Other topics include: issues and challenges in geographically distributed partnership-based product realization; the role of Information Technology and Modeling in future integrated product and process design. Recent research projects are discussed as case studies.

   Developed new teaching material including over 500 Power-point® slides for a significant content of the course. No such formal university course or related textbooks are known to exist. Collected and integrated all materials. Integrated results from research projects in the course. Obtained software grant from STEPTools, Inc. for ST-Developer™.

2. IE 500, Special Topics - Logistics and Supply-Chain Management (1996). This graduate level course covers topics, including basics and definitions, elements, design and models in Logistics and Supply-Chain Management. It provides a core set of fundamentals, case applications, and in-depth literature studies, to

lead to open research topics. It blends quantitative and qualitative material, from multiple disciplines of industrial and management engineering, and bears relevance for academic as well as industrial pursuits. The following topics are covered: Overview of Logistics and the Supply-Chain concept; Elements of Logistics Systems; Analyzing, Designing and Implementing Logistics Systems; Analytical Models; Information Exchange and Supporting Technologies; Several Research Articles and Case Studies; and Core competencies from a Business standpoint.

3. <u>IE 684, Networks, Routing and Logistics (2001)</u>. This graduate level course is a comprehensive coverage of a trinity of topics from: (i) *graph and network theory* that provide the modeling constructs to specify and algorithms to solve a large class of practical problems, (ii) *routing* that helps determine the sequence and timing when traversing these network structures, and (iii) the *business logistics* decisions that coordinate management of storing (inventory), handling, locating (location-allocation), distributing and mode/carriers selection. In effect, it provides the basics and definitions, elements, models and algorithms in Networks, Routing and Logistics (NRL) Management. The objective is to expose participants to NRL issues, and in a participatory setting, enable them to discuss and creatively synthesize these ideas to research projects of choice. A survey paper by Sarmiento and Nagi (1999) is used to establish the importance of integrated production-logistics decisions. Recent research results from inventory routing and distribution will also be included.

4. <u>IE 661, Scheduling Theory (2003)</u>. This graduate level course covers topics from: (i) Deterministic Scheduling Theory that provide the fundamentals and algorithms from single machine, parallel machine, flow and job shop environments, (ii) Project and Network Scheduling that are more prevalent in assembly products (BOMs), workflows, and project management, and (iii) Scheduling Practice that covers dispatching rules, local search methods, stochastic search, and mathematical programming based solutions.

5. <u>IE 670, Special Topics: Big Data Operations Research (2013)</u>.

4.   PUBLICATIONS IN REFEREED SCIENTIFIC JOURNALS

A.   In Print or Accepted

1. Tauer, G., Nagi, R. and Sudit, M. "The Graph Association Problem: Mathematical Models and a Lagrangian Heuristic," accepted to *Naval Research Logistics*, February 2013.

2. Pan, F. and Nagi, R. "Multi-Echelon Supply Chain Network Design in Agile Manufacturing," accepted to *OMEGA, The International Journal of Management Science*, December 2012; December 2013, Vol. 41(6), pp. 969–983.

3. Xu, J. and Nagi, R. "Solving Assembly Scheduling Problems with Tree-structure Precedence Constraints: A Lagrangian Relaxation Approach," accepted to *IEEE Transactions on Automation Science and Engineering*, October 2012.

4. Mufalli, F., Batta, R. and Nagi, R. "Simultaneous Sensor Selection and Routing of Unmanned Aerial Vehicles for Complex Mission Plans," *Computers & Operations Research*, November 2012, Vol. 39(11), pp. 2787–2799.

5. Mujawar, S., Huang, S. and Nagi, R. "Scheduling to Minimize Stringer Utilization for Continuous Annealing Operations," *OMEGA, The International Journal of Management Science,* August 2012, Vol. 40(4), pp. 437-444.

6. Bednowitz, N., Batta, R. and Nagi, R. "Dispatching and Loitering Policies for Unmanned Aerial Vehicles under Dynamically Arriving Multiple Priority Targets," accepted to *Journal of Simulation*, August 2011 (appeared on line, January 2012).

7. Zhang, M., Batta, R. and Nagi, R., "Designing Manufacturing Facility Layouts to Mitigate Congestion," *IIE Transactions on Design and Manufacturing*, 2011, Vol. 43(10), pp. 689-702. **[IIE Transactions Best paper award from journal issues from July 2011 through June 2012.]**

8. Sambhoos, K., Nagi, R., Sudit, M. and Stotz, A. "Enhancements to High Level Data Fusion using Graph Matching and State Space Search," *Information Fusion*, 2010, Vol. 11(4), pp. 351-364.

9. Pan, F. and Nagi, R. "Robust Supply Chain Formation under Uncertain Demand in Agile Manufacturing," *Computers and Operations Research*, 2010, Vol. 37(4), pp. 668-683.

10. Shah, P., Gosavi, A. and Nagi, R., "A Machine Learning Approach to Optimize Usage of Recycled Material in a Remanufacturing Environment," *International Journal of Production Research*, 2010, Vol. 48(4), pp. 933–955.

11. Zhang, M., Savas, S., Batta, R. and Nagi, R. "Facility Placement with Sub-Aisle Design in an Existing Layout," *European Journal of Operational Research*, Vol. 197(16), August 2009, pp. 154-165.

12. Sambhoos, K., Koc, B. and Nagi, R. "Extracting Assembly Mating Graphs from CAD Models," *ASME Journal of Computing and Information Science in Engineering*, Vol. 9(3), pp. 034501-1 – 034501-9, 2009.

13. Zhang, M., Batta, R. and Nagi, R., "Modeling of Workflow Congestion and Optimization of Flow Routing in a Manufacturing/Warehouse Facility," *Management Science*, 2009, Vol. 55(2), pp. 267-280.

14. Huang, S., Batta, R. and Nagi, R. "Simultaneous Siting and Sizing of Distribution Centers on a Plane," *Annals of Operations Research*, 2009, Vol. 167, pp. 157-170, (published online June 2008).

15. Sarkar, A., Batta, R. and Nagi, R. "Finding Rectilinear Least Cost Paths in the Presence of Convex Polygonal Congested Regions," *Computers and Operations Research*, 2009, Vol. 36(2), pp. 737 – 754.

16. Sambhoos, K., Nagi, R., Sudit, M. and Rickard, T. "Hierarchical Higher Level Data Fusion using Fuzzy Hamming and Hypercube clustering," *Journal of Advances in Information Fusion*, 2008, Vol. 3(2), pp. 90 – 106.

17. Casas, I., Garrity, R., Mandloi, D., Sunm, M., Weaver, J., Nagi, R. and Batta, R., "A Spatial Decision Support System Combining GIS and OR Tools to Optimize District Boundaries and Bus Routes for a Suburban School District," *OR Insight*, 2008, Vol. 21(2), pp. 3-16.

18. Shetty, V.K., Sudit, M. and Nagi, R. "Priority-based Assignment and Routing of a Fleet of Unmanned Combat Aerial Vehicles," *Computers and Operations Research*, 2008, Vol. 35(6), pp. 1813-1828.

19. Kelachankuttu, H., Batta, R. and Nagi, R. "Contour Line Construction for a New Rectangular Facility in an Existing Layout with Rectangular Departments," *European Journal of Operational Research*, 2007, Vol. 180, pp. 149-162.

20. Sarkar, A., Batta, R. and Nagi, R. "Placing a Finite Size Facility with a Center Objective on a Rectilinear Plane with Barriers," *European Journal of Operational Research*, 2007, Vol. 179, pp. 1160-1176.

21. Ghosh Dastidar, S. and Nagi, R. "Batch Splitting in an Assembly Scheduling Environment," *International Journal of Production Economics*, 2007, Vol. 105, pp. 372-384.

22. Romanowski, C.J., Nagi, R. and Sudit, M. "Data Mining in an Engineering Design Environment: OR Applications from Graph Matching," *Computers & Operations Research*, 2006, Vol. 33(11), pp. 3150-3160.

23. Chauhan, S., Proth, J.-M., Sarmiento, A.-M. and Nagi, R. "Opportunistic Supply Chain Formation from Qualified Partners for a New Market Demand," *Journal of Operations Research Society*, 2006, Vol. 57(9), pp. 1089-1099.

24. Raheja, D., Llinas, J., Nagi, R. and Romanowski, C. "A Data Fusion/Data Mining-Based Architecture for Condition-Based Maintenance," *International Journal of Production Research*, 2006, Vol. 44(14-15), pp. 2869-2887.

25. Guiffrida, A.L. and Nagi, R. "Cost Characterizations of Supply Chain Delivery Performance," *International Journal of Production Economics*, 2006, Vol. 102(1), pp. 22-36.

26. Guiffrida, A.L. and Nagi, R. "Economics of Managerial Neglect in Supply Chain Delivery Performance," *The Engineering Economist*, 2006, Vol. 51(1), pp. 1-17.

27. Huang, S., Batta, R. and Nagi, R. "Distribution Network Design: Selection and Sizing of Congested Connections," *Naval Research Logistics*, 2005, Vol. 52, pp. 701-712.

28. Ghosh Dastidar, S. and Nagi, R., "Scheduling Injection Molding Operations with Multiple Resource Constraints and Sequence Dependent Setup Times and Costs," *Computers & Operations Research*, 2005, Vol. 32(11), pp. 2987-3005.

29. Romanowski, C.J. and Nagi, R., "On Comparing Bills of Materials: A Similarity/Distance Measure for Unordered Trees," *IEEE Transactions on Systems, Man, and Cybernetics, Part A: Systems and Humans*, 2005, Vol. 35(2), pp. 249-260.

30. Patel, D.J., Batta, R. and Nagi, R. "Clustering Sensors in Wireless *ad hoc* Networks Operating in a Threat Environment," *Operations Research*, 2005, Vol. 53(3), pp. 432-442.

31. Romanowski, C.J. and Nagi, R. "A Data Mining Approach to forming Generic Bills of Materials in support of Variant Design Activities," *ASME Journal of Computing and Information Science in Engineering*, 2004, Vol. 4(4), pp. 316-328.

32. Sarkar, A., Batta, R. and Nagi, R. "Planar Area Location/Layout Problem in the Presence of Generalized Congested Regions with the Rectilinear Distance Metric," *IIE Transactions on Design and Manufacturing*, 2005, Vol. 37(1), pp. 35-50.

33. Wang, A., Koc, B. and Nagi, R. "Complex Assembly Variant Design in Agile Manufacturing. Part I: System Architecture and Assembly Modeling Methodology," *IIE Transactions on Design and Manufacturing*, 2005, Vol. 37(1), pp. 1-16.

34. Wang, A., Koc, B. and Nagi, R. "Complex Assembly Variant Design in Agile Manufacturing. Part II: Assembly Variant Design Methodology," *IIE Transactions on Design and Manufacturing*, 2005, Vol. 37(1), pp. 17-34.

35. Kelkar, A., Koc, B. and Nagi, R., "Geometric Algorithms for Rapidly Reconfigurable Mold Manufacturing of Free-form Objects," *Computer Aided Design*, 2005, Vol. 37(1), pp. 1-16.

36. Huang, S., Batta, R., Klamroth, K. and Nagi, R. "K-Connection Location Problem in a Plane," *Annals of Operations Research*, 2005, Vol. 136(1), pp. 193-209.

37. Sarkar, A., Batta, R. and Nagi, R. "Commentary on 'Facility Location in the Presence of Congested Regions with the Rectilinear Distance Metric'," *Socio-Economic Planning Sciences*, 2004, Vol. 38(4), pp. 291-306.

38. Chauhan, S., Nagi, R. and Proth, J.-M. "Strategic Capacity Planning in Supply Chain Design for a New Market Opportunity," *International Journal of Production Research*, 2004, Vol. 42(11), pp. 2197 - 2206.

39. Nandikonda, P., Batta, R. and Nagi, R. "Locating a 1-Center on a Manhattan Plane with "Arbitrarily" Shaped Barriers," *Annals of Operations Research*, 2003, Vol. 123, pp. 157-172.

40. Huang, S., Batta, R. and Nagi, R. "Capacity Sizing and Selections of Connections in a Facility Layout," *IIE Transactions on Design and Manufacturing*, 2003, Vol. 35(1), pp. 49-59.

41. Savas, S., Batta, R. and Nagi, R. "Finite-Size Facility Placement in the Presence of Barriers to Rectilinear Travel," *Operations Research,* 2002, Vol. 50(6), pp. 1018-1031.

42. Zhou, L. and Nagi, R. "Design of Distributed Information Systems for Agile Manufacturing Virtual Enterprises using CORBA and STEP Standards," *Journal of Manufacturing Systems*, 2002, Vol. 21(1), pp. 14-31.

43. Wang, S.-J., Bhadury, J. and Nagi, R., "Locating a Supply Facility and Input/Output Points in a Layout Problem," *Computers and Operations Research: Special Issue on Location Science*, 2002, Vol. 29(6), pp. 685-699.

44. Sanchez, L.M. and Nagi, R. "A Review of Agile Manufacturing Systems," *International Journal of Production Research*, 2001, Vol. 39, pp. 3561-3600.

45. Agrawal, A., Minis, I. and Nagi, R., "Cycle Time Reduction by Improved MRP-based Production Planning," *International Journal of Production Research*, 2000, Vol. 38(18), pp. 4823-4841.

46. Kazan, O., Nagi, R. and Rump, C., "New Lot-Sizing Formulations for Less Nervous Production Schedules," *Computers & Operations Research*, 2000, Vol. 27, pp. 1325-1345.

47. Bhandarkar, M.P., Downie, B., Hardwick, M. and Nagi, R., "Migration from IGES to STEP: One-to-one Translation of IGES Drawing to STEP Drafting Data," *Computers in Industry*, 2000, Vol. 41, pp. 261-277.

48. Bhandarkar, M.P. and Nagi, R., "STEP-based Feature Extraction from STEP geometry for Agile Manufacturing," *Computers in Industry*, 2000, Vol. 41, pp. 3-24.

49. Tung, L.-F., Lin, L. and Nagi, R., "Multiple-objective Scheduling for the Hierarchical Control of Flexible Manufacturing Cells," *International Journal of Flexible Manufacturing Systems,* 1999, Vol. 11(4), pp. 379-409.

50. Sarmiento, A.-M. and Nagi, R., "Recent Directions in Integrated Analysis of Manufacturing-Distribution Systems," *IIE Transactions on Scheduling and Logistics, special issue on Manufacturing Logistics*, 1999, Vol. 31(11), pp. 1061-1074.

51. Ramabhatta, V. and Nagi, R., "An Integrated Formulation of Manufacturing Cell Formation with Capacity Planning and Multiple Routings," *Annals of Operations Research,* 1998, Vol. 77, pp. 79-95.

52. Guiffrida, A.L. and Nagi, R., "Fuzzy Set Theory Applications in Production Management Research: A Literature Survey," *Journal of Intelligent Manufacturing,* 1998, Vol. 9(1), pp. 39-56.

53. Anwar, M.F. and Nagi, R., "Integrated Scheduling of Material Handling and Manufacturing Activities for Just-In-Time Production of Complex Assemblies," *International Journal of Production Research*, 1998, Vol. 36(3), pp. 653-681.

54. Song, L. and Nagi, R., "Design and Implementation of a Virtual Information System for Agile Manufacturing," *IIE Transactions on Design and Manufacturing, special issue on Agile Manufacturing,* 1997, Vol. 29(10), pp. 839-857.

55. Iyer, S. and Nagi, R., "Automated Retrieval and Ranking of Similar Parts in Agile Manufacturing," *IIE Transactions on Design and Manufacturing, special issue on Agile Manufacturing*, 1997, Vol. 29(10), pp. 859-876.

56. Bhandarkar, M.P. and Nagi, R., "STEP Product Information Models in Agile Manufacturing," *International Journal of Agile Manufacturing*, 1997, Vol. 1(1), pp. 65-75.

57. Ramabhatta, V., Lin, L. and Nagi, R., "Object Hierarchies to aid Representation and Variant Design of Complex Assemblies in an Agile Environment," *International Journal of Agile Manufacturing*, 1997, Vol. 1(1), pp. 77-90.

58. Shah, M., Lin, L. and Nagi, R., "A Production Order-driven AGV Control Model with Object-oriented Implementation," *Computer Integrated Manufacturing Systems,* 1997, Vol. 10(1), pp. 35-48.

59. Anwar, M.F. and Nagi, R., "Integrated Lot-sizing and Scheduling for Just-In-Time Production of Complex Assemblies with Finite Set-ups," *International Journal of Production Research,* 1997, Vol. 35(5), pp. 1447-1470.

60. Roach, A. and Nagi, R., "A Hybrid GA-SA Algorithm for Just-In-Time Scheduling of Multi-level Assemblies," *Computers & Industrial Engineering, special issue on Genetic Algorithms in Industrial Engineering,* 1996, Vol. 30(4), pp. 1047-1060.

61. Ghosh, S., Mahanti, A., Nagi, R. and D. Nau, "Manufacturing Cell Formation by State-Space Search," *Annals of Operations Research special issue on Artificial Intelligence and Operations Research in Business and Management,* 1996, Vol. 65, pp. 35-54.

62. Agrawal, A., Harhalakis, G., Minis, I. and Nagi, R., "Just-In-Time Production of Large Assemblies," *IIE Transactions on Scheduling and Logistics,* 1996, Vol. 28, pp. 653-667.

63. Harhalakis, G., Lu, T., Minis, I. and Nagi, R., "A Practical Method for Design of Hybrid-type Production Facilities," *International Journal of Production Research,* 1996, Vol. 34(4), pp. 897-918.

64. Herrmann, J.W., Ioannou, G., Minis, I., Nagi, R. and Proth, J.M., "Design of Material Flow Networks in Manufacturing Facilities," *Journal of Manufacturing Systems,* 1995, Vol. 14(4), pp. 277-289.

65. Fu, M.C., Hu, J.-Q. and Nagi, R., "Comparison of Gradient Estimation Techniques for Queues with Non-Identical Servers," *Computers & Operations Research*, 1995, Vol. 22(7), pp. 715-729.

66. Harhalakis, G., Ioannou, G., Minis, I. and Nagi, R., "Manufacturing Cell Formation under Random Product Demand," *International Journal of Production Research*, 1994, Vol. 32(1), pp. 47-64.

67. Fu, M.C., Hu, J.-Q. and Nagi, R., "Bias Properties of Infinitesimal Perturbation Analysis for Systems with Parallel Servers," *Computers & Operations Research*, 1991, Vol. 19(5), pp. 409-423.

68. Nagi, R., Harhalakis, G. and Proth, J.M., "Multiple Routeings and Capacity Considerations in Group Technology Applications," *International Journal of Production Research*, 1990, Vol. 28 (12), pp. 2243-2257.

69. Harhalakis, G., Nagi, R. and Proth, J.M., "An Efficient Heuristic in Manufacturing Cell Formation for Group Technology Applications," *International Journal of Production Research*, 1990, Vol. 28(1), pp. 185-198.

B. Submitted

1. Khopkar, S., Nagi, R. and Bhembre, V. "Incremental Algorithms for All Pair Shortest Paths," to be submitted to *Networks,* February 2013.

2. Garcia Llinas, G.A. and Nagi, R. "QoS-based Composition of Services with Complementary Candidates," submitted to *IEEE Transactions on Services Computing*, January 2013.

3. McConky, K., Nagi, R. and Sudit, M. "Sentence Similarity Measures For Event Coreference," submitted to *Data Mining and Knowledge Discovery (DAMI)*, January 2013.

4. Tauer, G., Nagi, R. and Sudit, M. "An Incremental Graph-Partitioning Algorithm for Entity Resolution," submitted to *ACM Transactions on Knowledge Discovery from Data*, November 2012.

5. Date, K., Makked, S. and Nagi, R. "Dominance Rules for the Optimal Placement of a Finite-size Facility in an Existing Layout," submitted to *Computers & Operations Research*, October 2012.

6. Xu, J. and Nagi, R. "Identical Parallel Machine Scheduling to Minimize Weighted Makespan and Total Weighted Completion Time: A Column Generation Approach," submitted to *International Journal of Production Research*, July 2012 (revised February 2013).

7. Garcia Llinas, G.A., Nagi, R. and Sudit, M. "Branch-and-Bound and LP-based techniques for solving the Discrete Network Design Problem in Transportation," submitted to *European Journal of Operational Research*, June 2012.

8. Date, K. and Nagi, R. "Placement of Two Finite-size Facilities in an Existing Layout with the Rectilinear Distance Metric," submitted to *Operations Research*, June 2012.

9. Tauer, G. and Nagi, R. "A Map-Reduce Lagrangian Heuristic for Multidimensional Assignment Problems with Decomposable Costs," submitted to *Parallel Computing*, February 2012.

10. McConky, K., Nagi, R. and Sudit, M. "A Spatial-Hierarchical Similarity Measure for Geospatial Resolution," submitted to *ACM Transactions on Information Systems*, February 2012 (revised September 2012).

11. Khopkar, S., Nagi, R. and Nikolaev, A. "Incremental Algorithms for Centrality Metric Calculations in Social Network Analysis," submitted to *Social Networks*, January 2012 (revised July 2012).

12. Jenkins, M., Gross, G., Bisantz, A. and Nagi, R. "Towards Context Aware Data Fusion: Modeling and Integration of Situationally Qualified Human Observations into a Fusion Process for Intelligence Analysis," submitted to *Information Fusion*, January 2012 (rev Oct. 2012, Dec. 2012).

13. Song, Y. and Nagi, R. "New Integer Problem Formulations and Branching Algorithms for the Open Vehicle Routing Problem," submitted to *Optimization Letters*, November 2011.

14. Gross, G.A., Nagi, R. and Sambhoos, K. "A Fuzzy Graph Matching Approach in Intelligence Analysis and Maintenance of Continuous Situational Awareness," submitted to *Information Fusion*, October 2011 (revised September 2012).

15. Behar, J., Koc, B. and Nagi, R. "Impact of Product Design Decisions in Joint Production-Pricing Models," submitted *OMEGA, The International Journal of Management Science,* December 2010.

16. Zhang, Y., Nagi, R. and Sudit, M. "An ANP-based Approach to Model Elicitation in Nation-Building Simulations," submitted *International Transactions in Operational Research*, March 2010 (Revised October 2010).

17. Ghosh Dastidar, S. and Nagi, R. "Revenue Management for the U.S. Domestic Automobile Dealership," submitted to *Journal of Revenue and Pricing Management*, November 2009.

18. Romanowski, C.J., Jayaraman, B. and Nagi, R. "Product Representation and Expression using Constrained XML," submitted *ASME Journal of Computing and Information Science in Engineering*, August 2009.

19. Temel, M., Batta, R. and Nagi, R. "Sorting Policies that Mitigate Deadlock and Improve Efficiency in Automated Sorting Systems," submitted to *Manufacturing and Service Operations Management*, April 2009 (to be resubmitted).

20. Huang, S., Batta, R. and Nagi, R. "An Integrated Model for Space Determination and Site Selection of Distribution Centers," submitted *European Journal of Operational Research*, January 2009.

C. Working

21. Holender, M., Nagi, R. and Sudit, M. "Emotion Recognition Fusion System Based on Conceptual Spaces," to be submitted to *Information Fusion*.

22. Joshi, A., Batta, R. and Nagi, R. "Two Tactical Models for Clustering Sensors in Wireless Ad Hoc Sensor Networks Operating in a Threat Environment," to be submitted to *Computers & Operations Research*.

23. Joshi, A., Batta, R. and Nagi, R. "Enemy Track Based Threat Assessment in Distributed Sensing Networks," to be submitted to *Military Operations Research*.

24. Joshi, A. and Nagi, R., "Reactive Scheduling in Workflow Management Systems: A Branch-and-Price Approach," to be submitted to *IEEE Transactions on Automation Science and Engineering*.

25. Coşar, E., Batta, R. and Nagi, R. "Performance Evaluation of a Mathematical Programming-based Clustering Algorithm for Mobile Sensor Networks," to be submitted to *IEEE Transactions on Mobile Computing*.

26. Sanchez, L.M. and Nagi, R., "Location, Sizing and Production Allocation of Fixed and Mobile Manufacturing Facilities," to be submitted *INFORMS Journal on Computing*.

27. Bang, C. and Nagi, R., "Hybrid Integration Approach for Process Planning and Shop Floor Scheduling in Agile Manufacturing (Part I) – High Level Process Planning," to be submitted to *Journal of Manufacturing Systems*.

28. Bang, C. and Nagi, R., "Hybrid Integration Approach for Process Planning and Shop Floor Scheduling in Agile Manufacturing (Part II) – Low Level Process Planning and Scheduling," to be submitted to *Journal of Manufacturing Systems*.

29. Venkatesan, B., Anwar, M.F. and Nagi, R. "An IT-OR Approach to Project Management for Agile Manufacturing Ventures."

30. Singh, H. and Nagi, R. "An Economic Driven Approach to Time Phased Cellular Manufacturing System (Re)Design."

31. Kane, M.C. and Nagi, R. "Integrated Material Flowpath and Layout in Facilities Design."

5. PUBLICATIONS IN CONFERENCE PROCEEDINGS

A. Refereed (Full Paper)

1. Date, K. and Nagi, R. "Optimal Placement of a Finite-size Facility: A Computational Study of Sequential and Parallel Implementations," *The IFAC MIM '2013 Conference*, St. Petersburg, Russia, 19-21 June 2013 (submitted).

2. Khopkar, S., Nagi, R. and Nikolaev, A. "An Efficient Map-Reduce Algorithm for the Incremental Computation of All-Pairs Shortest Paths in Social Networks," *2012 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining, ASONAM 2012*, Istanbul, Turkey, 26-29 August 2012.

3. Gross, G., Nagi, R., Sambhoos, K., Schlegel, D., Shapiro, S. and Tauer, G. "Towards Hard+Soft Data Fusion: Processing Architecture and Implementation for the Joint Fusion and Analysis of Hard and Soft Intelligence Data," *15th International Conference on Information Fusion*, Singapore, 9-12 July 2012.

4. Blasch, E., Costa, P.C.G., Laskey, K.B., Stampouli, D., Ng, G.W., Schubert, J., Nagi, R., and Valin, P. "Issues of Uncertainty Analysis in High-Level Information Fusion," *15th International Conference on Information Fusion*, Singapore, 9-12 July 2012.

5. Khopkar, S., Nagi, R. and Sambhoos, K. "Data Independent Heuristic Algorithm to Generate Name Variations," submitted to *ACM SIGIR Conference (Special Interest Group on Information Retreival)*, Portland, OR, 12-16 August 2012.

6. McConky, K., Nagi, R., Sudit, M. and Hughes, W. "Improving Event Co-reference By Context Extraction and Dynamic Feature Weighting," *IEEE International Multi-Disciplinary Conference on Cognitive Methods in Situation Awareness and Decision Support (CogSIMA)*, New Orleans, LA, 6-8 March 2012.

7. Gross, G., Nagi, R. and Sambhoos, K. "Continuous Preservation of Situational Awareness through Incremental/Stochastic Graphical Methods," *14th International Conference on Information Fusion*, Chicago, IL, 26-29 July 2011.

8. McMaster, D., Nagi, R. and Sambhoos, K. "Temporal Alignment in Soft Information Processing," *14th International Conference on Information Fusion*, Chicago, IL, 26-29 July 2011.

9. McConky, K., Nagi, R., Sudit, M., Rose, W. and Katz, G. "Significant Information Encapsulation and Valence Exploitation (SIEVE) for Discovery," *14th International Conference on Information Fusion*, Chicago, IL, 26-29 July 2011.

10. Tauer, G., Nagi, R. and Sudit, M. "A Dynamic Programming Approach for Nation Building Problems," *17th Industrial Engineering Research Conference*, Reno, NV, May 2011.

11. Jenkins, M.P., Gross, G., Bisantz, A. and Nagi, R. "Towards context-aware hard/soft information fusion: Incorporating situationally qualified human observations into a fusion process for intelligence analysis," *IEEE International Multi-Disciplinary Conference on Cognitive Methods in Situation Awareness and Decision Support (CogSIMA)*, Miami Beach, FL, 22-24 February, 2011.

12. Gross, G., Nagi, R. and Sambhoos, K. "Soft Information, Dirty Graphs and Uncertainty Representation/Processing for Situation Understanding," *13th International Conference on Information Fusion*, Edinburgh, Scotland, 26-29 July 2010.

13. Llinas, J., Nagi, R., Hall, D. and Lavery, J. "A Multi-disciplinary University Research Initiative in Hard and Soft Information Fusion: Overview, Research Strategies and Initial Results," *13th International Conference on Information Fusion*, Edinburgh, Scotland, 26-29 July 2010.

14. Gross, G., Nagi, R. and Sambhoos, K. "Situation Assessment: Uncertainty Representation in Inexact Graph Matching," *16th Industrial Engineering Research Conference*, Cancun MX, June 2010.

15. Zhang, M., Batta, R. and Nagi, R. "Material Handling Delivery in the Presence of Varying Speed and Interruptions," *16th Industrial Engineering Research Conference*, Cancun MX, June 2010.

16. Zhang, Y., Nagi, R. and Sudit, M. "Analytic Network Process for Model Elicitation in Nation-building Simulations," *12th International Conference on Information Fusion*, Seattle, WA, July 2009.

17. Stotz, A., Nagi, R. and Sudit, M. "Incremental Graph Matching for Situation Awareness," *12th International Conference on Information Fusion*, Seattle, WA, July 2009.

18. Zhang, Y., Nagi, R. and Sudit, M. "Analytic Hierarchy Process for Model Elicitation in Nation-building Simulations," *15th Industrial Engineering Research Conference*, Orlando FL, May-June 2009.

19. Hirsch, M., Nagi, R. and Sudit, D. "A Stochastic Optimization Framework for Resource Management and Course of Action Analysis," *11th International Conference on Information Fusion*, Cologne, Germany, June-July 2008.

20. Holender, M., Nagi, R., Sudit, M. and Rickard, J.T. "Information Fusion Using Conceptual Spaces: Mathematical Programming Models and Methods," *10th International Conference on Information Fusion*, Quebec City, Canada, July 2007.

21. Nagi, R., Sudit, M. and Llinas, J. "An Approach for Level 2/3 Fusion Technology Development in Urban/Asymmetric Scenarios," *9th International Conference on Information Fusion*, Florence, Italy, July 2006.

22. Sudit, M., Nagi, R., Stotz, A. and Sambhoos, K. "A Graph-Based Framework for Fusion: From Hypothesis Generation to Forensics," *9th International Conference on Information Fusion*, Florence, Italy, July 2006.

23. Zhang, M., Batta, R. and Nagi, R., "Workflow Congestion in a Facility Layout," *15th Industrial Engineering Research Conference*, Orlando FL, May 2006. *Best Paper Award in the Facilities Planning and Design Track*.

24. Joshi, B., Nagi, R. and Chen, S., "Portable Dynamic Message Signs (PDMS) Implementation to Improve Work Zone Safety," *85th Annual Meeting of the Transportation Research Board*, Washington DC, January 2005.

25. Sarkar, A., Batta, R. and Nagi, R., "The Planar Area Location/Layout Problem," *13th Industrial Engineering Research Conference*, Houston TX, May 2004.

26. Joshi, A., Mishra, N., Batta, R. and Nagi, R., "*Ad hoc* Sensor Network Topology Design for Distributed Fusion: A Mathematical Programming Approach," *7th International Conference on Information Fusion*, Stockholm, Sweden, June 2004.

27. Wang, A. and Nagi, R., "Assembly Variant Design Methodology," *2003 ASME International Mechanical Engineering Congress and R&D Expo*, Washington DC, November 2003.

28. Kelkar, A., Koc, B. and Nagi, R., "Rapidly Re-configurable Mold Manufacturing of Free-Form Objects," *8th ASME Design for Manufacturing Conference*, Chicago, IL, September 2003.

29. Romanowski, C.J. and Nagi, R., "The Search for Similar Parts in Variant Design," *12th Industrial Engineering Research Conference*, Portland OR, May 2003.

30. Sarkar, A., Batta, R. and Nagi, R., "Placement of a Finite-sized Center Facility in the Presence of Barriers to Rectilinear Travel," *12th Industrial Engineering Research Conference*, Portland OR, May 2003.

31. Sanchez, L.M. and Nagi, R., "Capacity Planning with Fixed and Mobile Facilities," *12th Industrial Engineering Research Conference*, Portland OR, May 2003.

32. Romanowski, C.J. and Nagi, R., "A data mining and graph theoretic approach to building generic bills of materials," *11th Industrial Engineering Research Conference*, Orlando FL, May 2002.

33. Sarkar, A., Batta, R. and Nagi, R., "Facility Location/Placement in the Presence of Congested Regions," *11th Industrial Engineering Research Conference*, Orlando FL, May 2002.

34. Sanchez, L.M. and Nagi, R., "Location and Production Allocation of Fixed and Mobile Manufacturing Facilities," *11th Industrial Engineering Research Conference*, Orlando FL, May 2002.

35. Guiffrida, A. and Nagi, R., "A Cost-Based Model for Evaluating Supply Chain Performance," *29th International Conference on Computers and Industrial Engineering*, Montreal Canada, November 2001, pp. 233-239.

36. Romanowski, C.J. and Nagi, R., "A Data Mining Approach to Integrating Product Life Cycle Information in Engineering Design," *10th Industrial Engineering Research Conference*, Dallas TX, May 2001.

37. Wang, A. and Nagi, R., "Assembly Modeling for Complex Assembly Variant Design," *10th Industrial Engineering Research Conference*, Dallas TX, May 2001.

38. Wang, A. and Nagi, R., "Framework for Complex Assembly Variant Design in Agile Manufacturing," *10th Industrial Engineering Research Conference*, Dallas TX, May 2001.

39. Kane, M.C. and Nagi, R., "Integrated Material Flow and Layout in Facilities Design," *6th Industrial Engineering Research Conference*, Miami, FL, May 1997, pp. 919-924.

40. Ramabhatta, V., Lin, L. and Nagi, R., "An Object Hierarchy Scheme for Complex Assemblies to aid Information Retrieval and Work Process Database Integration," *6th Industrial Engineering Research Conference*, Miami, FL, May 1997, pp. 650-655.

41. Bhandarkar, M.P., Downie, B., Hardwick, M. and Nagi, R., "IGES to STEP Translation and Visualization," *6th Industrial Engineering Research Conference*, Miami, FL, May 1997, pp. 656-661.

42. Anwar, M.F. and Nagi, R., "Integrated Conflict Free Routing of AGVs and Workcenter Scheduling in a Just-In-Time Production Environment," *6th Industrial Engineering Research Conference*, Miami, FL, May 1997, pp. 216-221.

43. Savas, S., Batta, R. and Nagi, R., "Single Facility Layout with Existing Machines as Barriers," *6th Industrial Engineering Research Conference*, Miami, FL, May 1997, pp. 925-929.

44. Bhandarkar, M.P. and Nagi, R., "STEP Product Information Models in Agile Manufacturing," *International Conference on Agile Manufacturing ICAM'97*, Lafayette, LA, February 1997.

45. Ramabhatta, V., Lin, L. and Nagi, R., "Object Hierarchies to aid Representation and Variant Design of Complex Assemblies in an Agile Environment," *International Conference on Agile Manufacturing ICAM'97*, Lafayette, LA, February 1997.

46. Nagi, R., "A Graduate Course in Agile Manufacturing," *1996 ASEE Annual Conference*, Washington DC, June 1996, on CD-Rom.

47. Song, L. and Nagi, R., "An Integrated Information Framework for Agile Manufacturing," *5th Industrial Engineering Research Conference*, Minneapolis, MN, May 1996, pp. 568-573.

48. Anwar, M.F. and Nagi, R., "Integration of Just-In-Time production and Material Handling in an Assembly Environment," *5th Industrial Engineering Research Conference*, Minneapolis, MN, May 1996, pp. 281-286.

49. Shankar, V. and Nagi, R., "A Flexible Optimization Approach for Multi-resource, Multi-project Planning and Scheduling," *5th Industrial Engineering Research Conference*, Minneapolis, MN, May 1996, pp. 263-267.

50. Iyer, S. and Nagi, R., "Identification and Ranking of Similar Parts in Agile Manufacturing," *4th Industrial Engineering Research Conference*, Nashville, TN, May 1995, pp. 709-718.

51. Gupta, P. and Nagi, R., "Flexible Optimization Framework for Partner Selection in Agile Manufacturing," *4th Industrial Engineering Research Conference*, Nashville, TN, May 1995, pp. 691-700.

52. Iyer, S. and Nagi, R., "Identification of Similar Parts in Agile Manufacturing," *ASME Winter Annual Conference: Concurrent Product Design DE-Vol. 74*, Chicago, November 1994, pp. 87-96.

53. Harhalakis, G., Lin, C.P., Nagi, R. and Proth, J.M., "Hierarchical Decision Making in Computer Integrated Manufacturing Systems," *Rensselear's Third International Conference on CIM*, Troy, NY, May 20-22 1992.

54. Harhalakis, G., Nagi, R., Proth, J.M. and Vernadat, F., "Design of Manufacturing Systems: A Bottom-up Approach Based on Petri Nets," *Third International Conference on Data and Knowledge Systems for Manufacturing and Engineering*, Lyon-France, March 1992.

55. Harhalakis, G., Nagi, R. and Proth, J.M., "Hierarchical Modeling Approach for Production Planning," INCOM '92: *7th IFAC Symposium on Information Control Problems in Manufacturing Technology*, Toronto, May 25-28 1992.

56. Harhalakis, G., Minis, I., Nagi, R. and Proth, J.M., "A Comprehensive Group Technology System for Cellular Manufacture," published in *Chapter 70, Production Research: Approaching the 21st Century, Taylor and Francis Ltd., 1991* and presented in Tenth ICPR, Nottingham, August 1989.

57. Harhalakis, G., Minis, I. and Nagi, R., "Development and Application of a Knowledge Based System for Cellular Manufacturing," *Third International Conference on Expert Systems in Production and Operations Management*, South Carolina, May 1989.

B. Abstract Reviewed (Full Paper)

1. Llinas, J., Nagi, R., Duff, D., Patel, M. and Walsh, D. "Framing and Defining New Fusion Strategies and Advanced Analytics for Relation-driven Problem Environments," *2012 Military Sensing Symposia, National Symposium on Sensor and Data Fusion (NSSDF),* Washington, DC, October 2012.

2. Ortiz-Pena, H., Hirsch, M., Karwan, M., Nagi, R. and Sudit, M. "Measuring the Price of Anarchy via Perspective Optimization of Unmanned Vehicles in ISR Operations," *2012 Military Sensing Symposia, National Symposium on Sensor and Data Fusion (NSSDF),* Washington, DC, October 2012.

3. Stotz, A., Sudit, M., Nagi, R., Hirsch, M., and Sambhoos, K. "Graph Dissemination for Distributed Enterprises (GraDDE)," *2007 Military Sensing Symposia, National Symposium on Sensor and Data Fusion (NSSDF),* McLean, VA, June 2007.

4. Nagi, R., "Material Handling Congestion and the Facility Layout Problem," *9th International Material Handling Research Colloquium,* Salt Lake City, UH, June 2006.

5. Zhang, M., Batta, R. and Nagi, R., "Probabilistic Modeling and Alleviation of Congestion in a Facility Layout," *9th International Material Handling Research Colloquium,* Salt Lake City, UH, June 2006.

6. Nagi, R. and Batta, R., "Congestion in Facilities Location and Layout: Deterministic and Stochastic Models," *NSF Design and Manufacturing Grantees Conference,* St. Louis, MO, June 2006.

7. Batta, R. and Nagi, R., "A Strategic Model for Distribution Center Space Sizing and Location," *8th International Material Handling Research Colloquium,* Graz, Austria, June 2004.

8. Heragu, S., Nagi, R. and Norman, B., "Challenges and Research Issues faced by the Manufacturer in a Mass Customization Environment," *7th International Material Handling Research Colloquium,* Portland, Maine, June 2002.

9. Batta, R. and Nagi, R., "Location and sizing of material handling connections in a facility layout," *7th International Material Handling Research Colloquium,* Portland, Maine, June 2002.

10. Raheja, D., Llinas, J., and Nagi, R., "A Data Fusion-Based Architecture for Condition-Based Maintenance," *14th International Congress and Exhibition on Condition Monitoring and Diagnostic Engineering Management,* University of Manchester UK, September 2001 (could not be presented).

11. Huang, S., Batta, R. and Nagi, R., "Optimal location and capacity sizing of connections in a facilities layout," *4th International POMS conference,* Garuja, Brazil, August 2001.

12. Nagi, R., "CAREER: Agile Manufacturing and Information Systems," *NSF Design and Manufacturing Grantees Conference,* Tampa FL, January 2001.

13. Batta, R. and Nagi, R., "Facility Layout (Re)Design Using Planar & Network Location Approaches," *NSF Design and Manufacturing Grantees Conference,* Tampa FL, January 2001.

14. Singh, H. and Nagi, R., "Time-Phased Manufacturing Cell Formation: A Cost Based Approach," *8th Industrial Engineering Research Conference,* Phoenix AZ, May 1999.

15. Romanowski, C.J. and Nagi, R., "Improving Preventive Maintenance Scheduling using Data Mining Techniques," *8th Industrial Engineering Research Conference,* Phoenix AZ, May 1999.

16. Panikacherry, B.N. and Nagi, R., "An Integrated Framework For Distributed Scheduling And Logistics Management In Agile Manufacturing," *8th Industrial Engineering Research Conference,* Phoenix AZ, May 1999.

17. Venkatesan, B. and Nagi, R., "An IT-OR Approach to Project Management in an Agile Manufacturing Environment," *8th Industrial Engineering Research Conference,* Phoenix AZ, May 1999.

18. Bang, C. and Nagi, R., "An Integrated Framework for Process Planning and Shop Floor Scheduling in Agile Cellular Manufacturing," *8th Industrial Engineering Research Conference,* Phoenix AZ, May 1999.

19. Kazan, O., Nagi, R. and Rump, C., "New Lot-Sizing Formulations for Less Nervous Production Schedules," *8th Industrial Engineering Research Conference,* Phoenix AZ, May 1999.

20. Nagi, R., "Agile Manufacturing Information Systems for Enterprise Integration," *NSF Design and Manufacturing Grantees Conference,* Los Angeles, CA, January 1999.

21. Batta, R. and Nagi, R., "Facility Layout (Re)Design Using Planar & Network Location Approaches," *NSF Design and Manufacturing Grantees Conference,* Los Angeles, CA, January 1999.

22. Venkatesan, B. and Nagi, R., "Decision Support System for Logistical and Assembly Analysis of Rapidly Reconfigurable Complex Assemblies in an Agile Manufacturing Environment," *Rensselaer's International Conference on Agile, Intelligent, and Computer-Integrated Manufacturing,* Troy, NY, October 1998.

23. Romanowski, C.R. and Nagi, R., "Data Mining Techniques for Preventive Maintenance in Agile Manufacturing," *Rensselaer's International Conference on Agile, Intelligent, and Computer-Integrated Manufacturing,* Troy, NY, October 1998.

24. Anwar, M.F. and Nagi, R., "Integrated Scheduling and Logistics in an Assembly Environment," *Rensselaer's International Conference on Agile, Intelligent, and Computer-Integrated Manufacturing,* Troy, NY, October 1998.

25. Sriram, S.R. and Nagi, R., "A Hierarchical and Dynamic Distribution System for Agile Manufacturing based on Distributed Object Technology," *Rensselaer's International Conference on Agile, Intelligent, and Computer-Integrated Manufacturing,* Troy, NY, October 1998.

26. Batta, R. and Nagi, R., "Facility Layout (Re)Design Using Planar and Mixed Planar/Network Location Approaches," *1998 International Colloquium on Material Handling Research*, Phoenix, AZ, June 1998.

27. Subramanian, L. and Nagi, R., "Workflow Management in Agile Manufacturing Information Systems," *7th Industrial Engineering Research Conference*, Alberta Canada, May 1998.

28. Sriram, S.R. and Nagi, R., "An Information Technology-Based Dynamic Distribution System for Agile Manufacturing," *7th Industrial Engineering Research Conference*, Alberta Canada, May 1998.

29. Sarmiento, A.-M. and Nagi, R., "Partnership Selection for Virtual Enterprises from Organizational Webs," *7th Industrial Engineering Research Conference*, Alberta Canada, May 1998.

30. Savas, S., Batta, R. and Nagi, R., "A Mixed Planar/Network Approach to Facility Layout," *7th Industrial Engineering Research Conference*, Alberta Canada, May 1998.

31. Fico, R. and Nagi, R., "An Economic Driven Time-Phased Hybrid Cellular Manufacturing Design Approach," *7th Industrial Engineering Research Conference*, Alberta Canada, May 1998.

32. Nagi, R., "Agile Manufacturing Information Systems for Enterprise Integration," *NSF Design and Manufacturing Grantees Conference,* Monterrey, Mexico, January 1998.

33. Sarmiento, A.-M. and Nagi, R., "Analysis of a Two-Level Integrated Production-Distribution System," *1996 Conference on Agile and Intelligent Manufacturing Systems*, Troy, NY, Oct. 1996.

34. Song, L. and Nagi, R., "A Virtual Information System for Agile Manufacturing Enterprises," *1996 Conference on Agile and Intelligent Manufacturing Systems*, Troy, NY, October 1996.

35. Taylor, D.G. and Nagi, R., "Agile Manufacturing in Material Handling and Logistics: Implications and a Research Agenda," *1996 International Colloquium on Material Handling Research*, Vught, The Netherlands, June 1996, pp. 9-13.

36. Batta, R. and Nagi, R., "Classification and Elimination of Material Handling Estimation Errors," *1996 International Colloquium on Material Handling Research*, Vught, The Netherlands, June 1996, pp. 435-455.

37. Candadai, A., Herrmann, J.W., Minis, I. and Nagi, R., "Variant Design Critiquing for Agile Manufacturing," *NSF Design and Manufacturing Grantees Conference,* San Diego, January 1995.

38. Ioannou, G., Minis, I., Nagi, R. and Proth, J.-M., "Design of Material Handling Flow Paths," *NSF Design and Manufacturing Grantees Conference,* Boston, January 1994.

6. BOOK CHAPTERS & EDITED PROCEEDINGS

A. Book Chapters

1. M.J. Hirsch, H. Ortiz-Pena, R. Nagi, A. Stotz, and M. Sudit, "On the optimization of information workflow," <u>Dynamics of Information Systems: Mathematical Foundations</u>, A. Sorokin, R. Murphey, M. Thai, and P.M. Pardalos (eds.), Springer, vol. 20, pp. 43 – 65, 2012.

2. Pfeiffer, B., Batta, R., Klamroth, K. and Nagi, R. "Probabilistic Modeling for UAV Path Planning in the Presence of Threat Zones," <u>Handbook of Military Industrial Engineering</u>, Editors: Adedeji Badiru and Marlin Thomas, CRC Press, Taylor and Francis Group, 2009.

3. Romanowski, C.J. and Nagi, R., "A Data Mining-based Engineering Design Support System: A Research Agenda," <u>Data Mining for Design and Manufacturing: Methods and Applications</u>, Editor: D. Braha, Kluwer Academic Publishers, 2001, pp. 161-178.

4. Romanowski, C.J. and Nagi, R., "Analyzing Maintenance Data Using Data Mining Methods," <u>Data Mining for Design and Manufacturing: Methods and Applications</u>, Editor: D. Braha, Kluwer Academic Publishers, 2001, pp. 235-254.

5. Nagi, R. and Proth, J.M., "Production Management Architecture," <u>The Industrial Electronics Handbook</u>, Editor in Chief: D. Irwin, pp. 653-662, CRC Press LLC, Florida, 1997. ISBN 0-8493-8343-9.

6. Nagi, R. and Proth, J.M., "Hierarchical Production Management," <u>Modern Manufacturing: Information Control and Technology</u>, Editors: M. Zaremba and B.P. Prasad, pp. 132- 172, Springer-Verlag London, 1994. ISBN 0-387-19890-3.

B   Edited Proceedings

1. Lin, L. and Nagi, R., <u>Proceedings of the 2006 IIE Research Conference</u>, 400 peer-reviewed papers.

7.   OTHER ARTICLES PUBLISHED

1. Nagi, R., "The hybrid cell layout helps speed cycle-time reduction," *Business First of Buffalo*, November 14, 1994, p. 18.

2. Nagi, R., "Don't rest on your technical laurels; think cycle-time planning," *Business First of Buffalo*, November 7, 1994, p. 31.

8.   PRESENTATIONS AT PROFESSIONAL MEETINGS AND CONFERENCES

1. Llinas, J. and Nagi, R. "Tutorial: Challenges and Approaches to Hard-Soft Information Fusion," *2012 Military Sensing Symposia, National Symposium on Sensor and Data Fusion (NSSDF),* Washington, DC, October 2012.

2. Date, K. and Nagi, R., "Placement of two finite size facilities in a layout with existing facilities with rectilinear travel," presented in the *ISERC 2012 Conference,* Orlando FL, May 2012.

3. Hirsch, M., Nagi, R., Ortiz-Pena, H., Stotz, A. and Sudit, M., "Information Workflow Optimization: Theory and Heuristics," presented in the *ISERC 2012 Conference,* Orlando FL, May 2012.

4. Garcia Llinas, G.A., Nagi, R. and Sudit, M., "Design of Robust Interdependent Infrastructures with a Limited Budget," presented in the *ISERC 2012 Conference,* Orlando FL, May 2012.

5. Xu, J. and Nagi, R., "Solving Assembly Scheduling Problems Using Lagrangian Relaxation," presentation in the *INFORMS Fall 2011 Conference,* Charlotte NC, November 2011.

6. Hirsch, M., Nagi, R., Ortiz-Pena, H, Stotz, A. and Sudit, M., "On the Optimization of Information Workflows," presentation in the *INFORMS Fall 2011 Conference,* Charlotte NC, November 2011.

7. McMaster, D., Nagi, R. and Sambhoos, K. "Temporal Issues in Soft Data Processing and Graph Matching," *17th Industrial Engineering Research Conference*, Reno, NV, May 2011.

8. Song, Y. and Nagi, R. "New Formulations and Branching Algorithms for the Open Vehicle Routing Problem," *17th Industrial Engineering Research Conference*, Reno, NV, May 2011.

9. Nagi, R., Llinas Garcia, G.A. and Sudit, M. "New Solution Approach to the Discrete Network Design Problem (DNDP)," *17th Industrial Engineering Research Conference*, Reno, NV, May 2011.

10. Xu, J. and Nagi, R., "Parallel Machine Scheduling to Minimize Weighted Completion Time and Total Completion Time," presentation in the *INFORMS Fall 2010 Conference*, Austin TX, November 2010.

11. Mufalli, F., Batta, R. and Nagi, R., "Simultaneous Sensor Selection and Routing of Unmanned Aerial Vehicles for Complex Mission Plans," presentation in the *INFORMS Fall 2010 Conference*, Austin TX, November 2010.

12. Xu, J. and Nagi, R. "A Crew Balancing Model for Freight Railroad," *16th Industrial Engineering Research Conference*, Cancun MX, June 2010.

13. Temel, M., Batta, R. and Nagi, R., "Integrated Analysis of Order Picking and Sorting Operations in a Rectangular Warehouse," presentation in the *INFORMS Fall 2009 Conference*, San Diego CA, October 2009.

14. Behar, J., Koc, B. and Nagi, R., "A Cross Functional Framework For Marketing, Production, And Design Coordination," presentation in the *INFORMS Fall 2009 Conference*, San Diego CA, October 2009.

15. Bednowitz, N., Batta, R. and Nagi, R., "Determining Optimal Loiter Paths for UAVs," presentation in the *INFORMS Fall 2009 Conference*, San Diego CA, October 2009.

16. Mufalli, F., Batta, R. and Nagi, R., "Simultaneous Sensor Selection and Routing of Unmanned Aerial Vehicles," presentation in the *CORS-INFORMS International Conference*, Toronto Canada, June 2009.

17. Bednowitz, N., Batta, R. and Nagi, R., "Priority Spatial Queues: Study of Target and Unmanned Aerial Vehicle Initiated Dispatch Rules," presentation in the *CORS-INFORMS International Conference*, Toronto Canada, June 2009.

18. Pan, F. and Nagi, R., "Multi-echelon Supply Chain Network Design Problem," presentation in the *INFORMS Fall 2008 Conference*, Washington DC, October 2008.

19. McConky, K., Kuhl, M., Nagi, R., Sudit M. and Zhang, Y., "Sensor Management in Cyber Security," invited (Practice cluster: OR, Simulation, and Information Fusion Applied to Cyber Security) presentation in the *INFORMS Fall 2008 Conference*, Washington DC, October 2008.

20. Sudit, M., Nagi, R. and Stotz, A., "Tradeoff between Speed and Quality in the Information Fusion Process for Cyber Security," invited (OR, Simulation, and Information Fusion Applied to Cyber Security) presentation in the *INFORMS Fall 2008 Conference*, Washington DC, October 2008.

21. Hirsch, M., Nagi, R. and Sudit, D., "An Optimization Framework for Resource Management and Course of Action Analysis," invited (sponsored by Military Application Society) presentation in the *INFORMS Fall 2008 Conference*, Washington DC, October 2008.

22. Zhang, M., Batta, R. and Nagi, R., " Designing a Manufacturing Facility to Mitigate Congestion," invited (sponsored by Facilities Design) presentation in the *Industrial Engineering Research Conference*, Vancouver BC, May 2008.

23. Nagi, R., Mishra, S., Lawless, W., Llinas, J. and Mufalli, F., "Complexity Measures and Congestion Issues in Wireless Sensor Networks," invited (sponsored by Telecommunications cluster) presentation in the *INFORMS Fall 2007 Conference*, Seattle WA, November 2007.

24. Nagi, R., Shetty, V. and Sudit, M., "Priority-based Assignment and Routing of a Fleet of Unmanned Combat Aerial Vehicles," invited (sponsored by Transportation Science & Logistics cluster) presentation in the *INFORMS Fall 2007 Conference*, Seattle WA, November 2007.

25. Nagi, R., Batta, R. and Zhang, M., "A New Facility Layout Model with Congestion and Rerouting," invited (sponsored by Transportation Science & Logistics cluster) presentation in the *INFORMS Fall 2007 Conference*, Seattle WA, November 2007.

26. Temel, M., Batta, R. and Nagi, R., "Analysis of Order Picking and Sorting Wave Structure," presentation in the *INFORMS Fall 2007 Conference*, Seattle WA, November 2007.

27. Casas, I., Nagi, R., Mandloi, D., Batta, R. and Garrity, R., "Optimizing School District Lines and Bus Routes Using GIS: The Case of Sweet Home School," invited (sponsored by Location Analysis cluster) presentation in the *INFORMS Fall 2007 Conference*, Seattle WA, November 2007.

28. Romanowski, C.J. and Nagi, R., "A Data Mining Methodology for Product Design Support," invited (sponsored by Computing Society/Data Mining cluster) presentation in the *INFORMS Fall 2006 Conference*, Pittsburgh PA, November 2006.

29. Zhang, M., Batta, R. and Nagi, R., "Facility Relayout to Alleviate Congestion," invited (sponsored by Transportation Science & Logistics cluster) presentation in the *INFORMS Fall 2006 Conference*, Pittsburgh PA, November 2006.

30. Temel, M., Batta, R. and Nagi, R., "Order Batching and Throughput Models Considering Picker Congestion," invited (sponsored by Transportation Science & Logistics cluster) presentation in the *INFORMS Fall 2006 Conference*, Pittsburgh PA, November 2006.

31. Holender, M., Nagi, R. and Sudit, M., "Conceptual Spaces as a Framework for Situational Assessment," invited (sponsored by Military Applications cluster) presentation in the *INFORMS Fall 2006 Conference*, Pittsburgh PA, November 2006.

32. Samboos, K., Nagi, R. and Sudit, M., "High Level Data Fusion Using Graph Matching and State Space Search," invited (sponsored by Military Applications cluster) presentation in the *INFORMS Fall 2006 Conference*, Pittsburgh PA, November 2006.

33. Sudit, M., Nagi, R. and Stotz, A., "Optimizing the Amount and Type of Information at Each Level of Decision-Making," invited (sponsored by Military Applications cluster) presentation in the *INFORMS Fall 2006 Conference*, Pittsburgh PA, November 2006.

34. Nagi, R. and Batta, R., "Tutorial: Unifying Facility Restricted Location and Layout Theory," invited (sponsored by Location Analysis cluster) tutorial presentation in the *INFORMS Fall 2006 Conference*, Pittsburgh PA, November 2006.

35. Sudit, M., Nagi, R., Delvecchio, J. and Stotz, A., "Graph Structures in Situational Awareness and Information Fusion," invited presentation in the *Third Annual Integrated Sensing & Decision Support Workshop*, Lexington MA, April 2006.

36. Singh, T. and Nagi, R., "Innovative Fusion Capabilities," invited presentation by National Technology Alliance in the *GeoInt 2005 Symposium*, San Antonio, TX, November 2005.

37. Zhang, M., Batta, R. and Nagi, R., "Alleviate Congestion in a Facility Layout: Reroute Flows, Relocate Departments or a Combination of Both?," invited (sponsored by Location Analysis cluster) presentation in the *INFORMS Fall 2005 Conference*, San Francisco CA, November 2005.

38. Yates, J. and Nagi, R., "Modeling Urban Operations for Data Fusion and OR Applications," presentation in (Sensor and Search Problems for Military Applications Session of) the *INFORMS Fall 2005 Conference*, San Francisco CA, November 2005.

39. Joshi, A., Batta, R. and Nagi, R., "Enemy Track Based Threat Evaluation for Military Sensor/Fusion Networks," presentation in the *INFORMS Fall 2005 Conference*, San Francisco CA, November 2005.

40. Holender, M., Nagi, R., Stotz, A. and Sudit, M., "Information Fusion Engine for Real-time Decision Making (INFERD) – Level 2 Measures and Issues," presentation in the *INFORMS Fall 2005 Conference*, San Francisco CA, November 2005.

41. Llinas, J., Hall, D. and Nagi, R. "Challenges and Approaches to Designing Data Fusion Processes in Services-Based Architectures," Four-hour tutorial presented in the *8th International Conference on Information Fusion*, Philadelphia, PA, July 2005.

42. Sarkar, A., Batta, R. and Nagi, R., "Finding Rectilinear Least Cost Paths with Convex Polygonal Congested Regions," invited (sponsored by Location Analysis cluster) presentation in the *INFORMS Fall 2004 Conference*, Denver CO, October 2004.

43. Huang, S., Batta, R. and Nagi, R., "Integrated Location and Sizing of Distribution Centers on a Plane," invited (sponsored by Transportation Science & Logistics cluster) presentation in the *INFORMS Fall 2004 Conference*, Denver CO, October 2004.

44. Romanowski, C., Nagi, R. and Sudit, M., "Data Mining in an Engineering Design Environment: OR Applications from Graph Matching," presentation in (Data Mining session of) the *INFORMS Fall 2004 Conference,* Denver CO, October 2004.

45. Batta, R. and Nagi, R., "Dynamic Sensor Network Topology Management in Network Centric Warfare," presentation in (Military Applications session of) the *INFORMS Fall 2004 Conference,* Denver CO, October 2004.

46. Mujawar, S., Huang, S., Patel, D. and Nagi, R., "Scheduling to Minimize Stringer Utilization in Metal Industries," presentation in the *13th Industrial Engineering Research Conference*, Houston TX, May 2004.

47. Romanowski, C.J. and Nagi, R., "Adaptive data mining in a variant design support system," invited (Computer Information Systems) presentation in the *13th Industrial Engineering Research Conference*, Houston TX, May 2004.

48. Kelachankuttu, H., Batta, R. and Nagi, R., "Contour line construction for a new rectangular facility in an existing layout with rectangular departments," invited (Facility Planning and Design) presentation in the *13th Industrial Engineering Research Conference*, Houston TX, May 2004.

49. Huang, S., Batta, R. and Nagi, R., "Selection and Space Requirement for Congested Connections," invited (sponsored by Location Analysis cluster) presentation in the *INFORMS Fall 2003 Conference,* Atlanta GA, October 2003.

50. Joshi, A. and Nagi, R., "Reactive Scheduling in Workflow Management Systems: A Branch-and-Price Approach," invited (sponsored by Manufacturing, Services and Operations Management cluster) presentation in the *INFORMS Fall 2003 Conference,* Atlanta GA, October 2003.

51. Sarkar, A., Batta, R. and Nagi, R., "Planar Facility Location and Placement in the Presence of Generalized Congested Regions," invited (sponsored by Location Analysis cluster) presentation in the *INFORMS Fall 2003 Conference,* Atlanta GA, October 2003.

52. Huang, S., Batta, R. and Nagi, R., "Selection and Sizing of Congested Connections for a Transportation Network," invited presentation in the *EURO/INFORMS Joint International Meeting,* Istanbul Turkey, July 2003.

53. Patel, D., Batta, R. and Nagi, R., "Cluster Head (Re)Assignment in Ad Hoc Sensor Networks to Maximize Coverage," presentation in the *INFORMS Fall 2002 Conference,* San Jose CA, November 2002.

54. Huang, S., Batta, R. and Nagi, R., "Planar Location of K Capacitated Connections," invited (sponsored by Location Analysis cluster) presentation in the *INFORMS Fall 2002 Conference*, San Jose CA, November 2002.

55. Sarkar, A., Batta, R. and Nagi, R., "Facility Location in the Presence of Congested Regions," invited (sponsored by Facilities Planning and Design/Manufacturing Systems cluster) presentation in the *INFORMS Fall 2002 Conference*, San Jose CA, November 2002.

56. Huang, S., Batta, R. and Nagi, R., "K-Connection Location Problem," *ISOLDE – International Symposium on Location Decisions*, Fredrickton/St. Andrews, NB Canada, June 2002.

57. Huang, S., Batta, R. and Nagi, R., "The Connection Location and Sizing Problem in a Facility Layout," *11th Industrial Engineering Research Conference*, Orlando FL, May 2002.

58. Huang, S., Batta, R. and Nagi, R., "The Connection Location Problem," invited (sponsored by SOLA) presentation in the *INFORMS Fall 2001 Conference*, Miami Beach, November 2001.

59. Bang, C. and Nagi, R., "An Object Oriented Information Modeling for Selecting Machines and Tools In an Agile Manufacturing Environment," *10th Industrial Engineering Research Conference*, Dallas TX, May 2001.

60. Savas, S., Batta, R. and Nagi, R., "A Spatially-Unified Modeling Perspective to Problems in Facilities Design," *10th Industrial Engineering Research Conference*, Dallas TX, May 2001.

61. Anwar, M.F. and Nagi, R., "Lagrangean Relaxation Based Solution Approach for Integrated Material Handling System and Workcenter Scheduling," *10th Industrial Engineering Research Conference*, Dallas TX, May 2001.

62. Anwar, M.F., Batta, R. and Nagi, R., "Improved Integrated Scheduling & Logistics in an Assembly Environment using Concepts from Column Generation," invited presentation in the *INFORMS Fall 2000 Conference*, San Antonio, November 2000.

63. Sarmiento, A.-M. and Nagi, R., "A Simulation Study of Manufacturing Supply Chains Cost under Demand Variations," presented in the *INFORMS Fall 2000 Conference*, San Antonio, November 2000.

64. Nandikonda, P., Batta, R. and Nagi, R., "The 1-Center Placement Problem on the Manhattan Plane with Barrier," invited (sponsored by SOLA) presentation in the *INFORMS Fall 2000 Conference*, San Antonio, November 2000.

65. Sarmiento, A.-M. and Nagi, R., "A Modified Benders Approach as Lower Bound for Manufacturing Supply Chains Cost," presented in the *INFORMS Fall 2000 Conference*, San Antonio, November 2000.

66. Savas, S., Batta, R. and Nagi, R., "Placement of New Facilities under a Mixed Planar/Network Representation of Facility Layout," invited presentation in the *INFORMS Fall 2000 Conference*, San Antonio, November 2000.

67. Nagi, R., "Information Technology in Manufacturing Enterprises: Research Directions," invited panelist to IIE Manufacturing Division Panel Discussion, *IE Research Conference*, Cleveland, May 2000 (Moderator: Prabhu, V.; Other Panelists: Sounder Kumara and David Wu).

68. Nandikonda, P., Batta, R. and Nagi, R., "The Weighted 1-Center Problem with Arbitrary Shaped Barriers," presented in the *INFORMS Spring 2000 Conference*, Salt Lake City, May 2000.

69. Wang, S.-J., Bhadury, J. and Nagi, R., "Locating Input/Output Points Optimally in a Layout Problem," presented in the *INFORMS Fall 1999 Conference*, Philadelphia, November 1999.

70. Anwar, M.F. and Nagi, R., "A Column Generation Approach for Integrated Scheduling and Logistics of Assemblies," invited presentation in the *INFORMS Fall 1999 Conference*, Philadelphia, November 1999.

71. Batta, R. and Nagi, R., "A Finite-Size Barrier Location Approach to Facility Design," invited presentation in the *ISOLDE VIII Conference*, Coimbra, Portugal, June 1999.

72. Mehere, M., Bhadury, J. and Nagi, R., "Integrated Distribution System Design with Warehouse Location & Logistics," presented in the *INFORMS Spring 1999 Conference*, Cincinnati, May 1999.

73. Kazan, O., Nagi, R. and Rump, C., "New Lot-Sizing Formulations for Less Nervous Production Schedules," presented in the *INFORMS Spring 1999 Conference*, Cincinnati, May 1999.

74. Singh, H. and Nagi, R., "Cost Justified Cellular Manufacturing (Re)Design," presented in the *INFORMS Spring 1999 Conference*, Cincinnati, May 1999.

75. Savas, S., Batta, R. and Nagi, R., "Planar and Network Location Approaches in Facility Layout," invited presentation in the *INFORMS Spring 1999 Conference*, Cincinnati, May 1999.

76. Sarmiento, A.-M. and Nagi, R., "An analytical tool to support the selection of partners from Organizational Webs in Agile Manufacturing," presented in the *INFORMS Spring 1999 Conference*, Cincinnati, May 1999.

77. Sarmiento, A.-M. and Nagi, R., "Neural Network-based batch scheduling for an integrated agile production-distribution system," invited presentation in the *INFORMS Fall 1998 Conference*, Seattle, WA, October 1998.

78. Ng, S.-L., Lin, L. and Nagi, R., "Concurrent Design of Transfer Molded Components Using World-Wide-Web Technology," presented in the *7th Industrial Engineering Research Conference*, Alberta Canada, May 1998.

79. Anwar, M.F. and Nagi, R., "Integrated Scheduling of AGVs and Workcenters with the Consideration of Conflict Free Routing," invited presentation in the *INFORMS Spring 1998 Conference*, Montreal Canada, April 1998.

80. Nagi, R., "Directions in Agile Manufacturing and Material Handling Research," discussion group summary presented in the *1996 International Colloquium on Material Handling Research*, Vught, The Netherlands, June 1996.

81. Batta, R. and Nagi, R., "Classification and Elimination of Errors in Plant Layout," presented in *5th Industrial Engineering Research Conference,* Minneapolis, MN, May, 1996.

82. "Hierarchical Production Management Systems," Poster Session at the Annual Research Review Conference of Systems Research Center, May 1989.

83. "Selection and Layout of Work-centers in a Job-shop," Poster Session at the Annual Research Review Conference of Systems Research Center, May 1988.

9. INVITED PRESENTATIONS AT UNIVERSITIES AND INDUSTRIES

1. "Simultaneous Sensor Selection and Routing of Unmanned Aerial Vehicles for Complex Mission Plans," Department of Industrial and Systems Engineering, Texas A&M, September 2010.

2. "Facility Layout and Flow Routing to Mitigate Workflow Congestion," Department of Industrial Engineering, University of Pittsburgh, October 2008.

3. "Rectangular Facility Location and A Potpourri of GIS Applications in Defense Information Fusion," IGERT Colloquium NCGIA (National Center on Geographic Information Analysis), University of Buffalo, April 2006.

4. "Strategic Capacity Planning with Fixed and Mobile Facilities," Department of Management Science and Systems, University of Buffalo, April 2005.

5. "Optimized Production Scheduling," APICS, Buffalo Chapter, February 2004.

6. "Facility Master Planning and Information Driven Logistics," Department of Industrial and Systems Engineering, Auburn University, January 2003.

7. "Plant Layout and Industrial Ergonomics," The Center for Industrial Effectiveness, University at Buffalo, Fall 2002 Seminar Series, November 2002 (with Victor Paquet).

8. "Mass Customization in Agile Manufacturing: Variant Design Support for Mechanical Assemblies," Department of Industrial Engineering, University at Buffalo, October 2002.

9. "Location and Sizing of Material Transfer Connections in a Distribution Environment," Ecole Nationale d'Ingenieurs de Metz, University of Metz, France, June 2002.

10. "Variant Design Support for Complex Mechanical Assemblies," Department of Industrial & Manufacturing Engineering, Penn State University, October 2001.

11. "Production Scheduling of Assembled Products," Department of Industrial Engineering, University at Buffalo, September 2000.

12. "A Workflow Management System for Agile Enterprises," Information Systems Department, Indian Tobacco Company (ITC), Calcutta, India, March 2000.

13. "Research Topics in Agile Manufacturing," Faculty of Engineering, Dayalbagh Educational Institute, Agra, India, January 2000.

14. "Research Topics in Agile Manufacturing," Department of Mechanical Engineering, Indian Institute of Technology, Delhi, India, January 2000.

15. "An Object Hierarchy Scheme for Modeling Complex Assemblies," Department of Computer Sciences and Engineering, University of Buffalo, March 1999.

16. "A Workflow Management Information System for Agile Manufacturing," Department of Management Science and Systems, University of Buffalo, April 1998.

17. "Integrated Lot-sizing, Scheduling and Material Handling for Just-In-Time Production of Assembled Products," Faculty of Management, University of Toronto, March 1998.

18. "Lean Thinking and Just-In-Time Manufacturing," American Society for Quality (ASQ) Section 30 Annual Conference, Grand Island, NY, November 1997.

19. "A Just-In-Time Production Methodology for Assembled Products," Indian Institute of Management (IIM), Calcutta, India, January 1996.

20. "Group Technology: An object world-view for design/manufacturing standardization," Praxair, Inc., Tonawanda, NY, October 1995; co-speaker Li Lin.

21. "Just-In-Time Production of Large Assemblies," Center for Robotics and Manufacturing Systems & Dept. of Mechanical Engineering, University of Kentucky, Lexington, January 1995.

22. "Agile Manufacturing," Graduate Research Group for Integrated Design Engineering & Dept. of Mechanical and Aerospace Engineering, State University of New York at Buffalo, December 1994.

23. "The Group Technology Philosophy," Women CEO Manufacturers Group, Buffalo, August 1994.

24. "Design and Operation of Production Systems and Production Management Systems," Dept. of Mechanical Engineering, University of Minnesota, June 1992.

25. "An Approach to Design and Operation of Hierarchical Production Management Systems," INRIA, France, January 1990.

26. "An Industrial Application of the Group Technology Algorithm," INRIA, France, June 1988.

27. "Group Technology - The Manufacturing View and Algorithms," ARBED of Luxembourg, July 1988.

10. RESEARCH GRANT SUPPORT

A. Funded

1. "ICES: Small: Discovering Fundamental Structural and Behavioral Laws of Social Networks," *National Science Foundation*, CCF, Interface between Computer Science and Economics & Social Sciences (ICES) program, $100,000, PI Alexander Nikolaev, co-PI Rakesh Nagi, (September 2012 – August 2013); Two students supported.

2. "Facility Layout," *Trek, Inc*., *Medina, NY* with SPIR/TCIE; $30,049 (May 2012 – July 2012); PI R. Nagi. Two students supported.

3. "Control of Anarchical and Ordered Systems (CAOS): Mathematical Programming Approaches for Measuring Decentralized and Centralized Network Operations," *Office of Naval Research (ONR) 11-001*, CUBRC/UB $977,418, PI R. Nagi, co-PI Mark Karwan, R. Batta, M. Sudit (CUBRC PI), (July 2012 – June 2015).

4. "Facility Layout Redesign," *HDM Hydraulics, LLC, Tonawanda, NY* with SPIR/TCIE; $61,280 (June 2011 – July 2011); PI R. Nagi, co-PI Alex Nikolaev. Two students supported.

5. "Dynamic Graph Analytic Framework (DyGrAF)," *Air Force Research Labs – Rome, NY (AFRL)*, CUBRC; BAA-10-03-RIKA (FA8750-11-C-0214); $725,000 (May 2011 – May 2014), PI Mr. William A. Tagliaferri, other CUBRC personnel; consultant R. Nagi.

6. "Knowledge Discovery and Dissemination (KDD)," USAF via CUBRC, UB share $2,127,565, (October 2010 – December 2014); PI R. Nagi. One Post-doc, 6 grad, 3 undergrad students supported.

7. "Improving Efficiency in Bindery Operations," *Worldcolor, Depew, NY* with SPIR/TCIE; $26,780 (Feb 2010 – May 2010); co-PI R. Nagi, co-PI Victor Paquet. Two students supported.

8. "Dynamic Social Network Analysis," *Army Research Labs – Adelphi, MD (ARL)*, CUBRC/UB $90,243, $41,808 (UB share) (Jan 2010 – August 2010); PI R. Nagi.

9. "Dirty Graph Matching," *Army Research Labs – Adelphi, MD (ARL)*, CUBRC/UB $124,974, (Jan 2010 – August 2010). PIs Jim Llinas and Mike Moskal, co-PI R. Nagi.

10. "Unified Research on Network-based Hard/Soft Information Fusion," *US Army Research Office*, PI Nagi (1/2011 -) James Llinas (6/2009 to 12/2010), co-PI Ann Bisantz, Moises Sudit; $6,250,000 (June 2009 – May 2014), sub-contractors Penn State, Tennessee State, Iona College.

11. "Discovery Phase: Variable Tunable Design for Compressor," *Dresser-Rand, Co*., Olean, NY with TCIE, co-PD Tom Miller; $9,333 (January 2009); PI R. Nagi.

12. "Graph and Network Objects for Model Elicitation (GNOME)," *Air Force Research Labs - Rome (AFRL)*, CUBRC/UB $66,463 (August 2008 – August 2009), $87,642 (Aug. 2009 – Aug. 2010) UB-PI R. Nagi.

13. "Optimization Planning and Tactical Intelligent Management of Aerial Sensors (OPTIMAS)," *Office of Naval Research (ONR) 07-008*, CUBRC/UB $ 1,171,247, PI Mark Karwan, co-PI R. Batta, J. Crassidis, R. Nagi, M. Sudit, T. Jasinski, C. Barsalou, (L3Com sub contractor, P. Deignan) (February 2008 – January 2011).

14. "Intelligence Exchange: IntelEx," *Office of Naval Research (ONR) 07-021*, CUBRC $1,345,264, PI A. Stotz, co-PI R. Nagi, M. Sudit, (Raytheon sub contractor) (February 2008 – January 2009).

15. "Raytheon Information Fusion Support," *Raytheon, St. Petersburg FL*. CUBRC $180,000 (pending supplement), PI A. Stotz, co-PI R. Nagi, M. Sudit (January 2008 – September 2008).

16. "National Center for Multisource Information Fusion," *Air Force Research Laboratories, Rome* with Penn State University, RIT and CUBRC; $934,000 (June 2007 – July 2008); Manager Michael Moskal, co-PIs R. Nagi, M. Sudit, J. Llinas and S. Shapiro. One student supported.

17. "Model Integrity and Discovery Suite (MInDS)," *Office of Naval Research (ONR) 06-010*, CUBRC $903,578, PI Moises Sudit, co-PI R. Nagi, (DAC and SNC sub contractors) (March 2007 – March 2010).

18. "Information Fusion to Support Maritime Domain Awareness," *Raytheon, St. Petersburg FL.* CUBRC $130,000 (plus $40,000 supplement), PI A. Stotz, co-PI M. Sudit, R. Nagi (January 2007 – December 2007).

19. "Supply Chain Optimization," *Stollberg, Inc.*, Niagara Falls, NY with SPIR/TCIE; $51,561 (November 2006 – July 2007); PI R. Nagi. One student supported.

20. "Facility Layout Redesign," *Flame Control Coatings, LLC*, Niagara Falls, NY with SPIR/TCIE; $39,877 (August 2006 – Dec 2006); PI R. Nagi. One student supported.

21. "National Center for Multisource Information Fusion," *Air Force Research Laboratories, Rome* with Penn State University, RIT and CUBRC; $890,000 (June 2006 – July 2007); Manager Michael Moskal, co-PIs R. Nagi, M. Sudit, J. Llinas and S. Shapiro. One student supported.

22. "Investigation of Means of Mitigating Congestion in Complex, Distributed Network Systems by Optimization Means and Information Theoretic Procedures," *Air Force Research Laboratories, Wright-Patterson AFB* with Paine College GA and CUBRC ($62,000); $125,000 (July 2006 – September 2007); co-PIs R. Nagi and James Llinas. One student supported.

23. "Graph Theory and Information Fusion," *Lockheed-Martin Corp (Orincon Division)*. University at Buffalo/CUBRC $50,000, PI M. Sudit, co-PI R. Nagi (January 2006 – December 2006); One student supported.

24. "Hierarchical High Level Information Fusion Technologies (H^{2}LIFT)," *Office of Naval Research (ONR) 05-013*, $448,410, PI M. Sudit, co-PIs R. Nagi, J. Crassidis, A. Crassidis (RIT), G. Fugde (L3Com) (FY 2006 – FY 2007), May 2006. One student supported.

25. "Redistricting and School Bus Route Optimization for Sweet Home School District: A GIS Approach," *Sweet Home School District*; $10,095 (May 2006 – December 2006); PI Irene Casas, co-PI R. Nagi, R. Batta, May 2006. One student supported.

26. "Warehouse Layout Study," *Curbell Inc., Orchard Park, NY* with SPIR/TCIE; $16,923 (Jan 2006 – May 2006); co-PIs R. Nagi, R. Batta. One student supported.

27. "Manufacturing Layout Study," *Curbell Inc., Orchard Park, NY* with SPIR/TCIE; $16,923 (Jan 2006 – May 2006); co-PIs R. Nagi, R. Batta. One student supported.

28. "Conceptual Spaces and Graph Matching for High Level Fusion," *Lockheed-Martin Corp.* University at Buffalo/CUBRC $80,000, PI M. Sudit, co-PI R. Nagi (January 2006 – December 2006); One student supported.

29. "Improving Oscillating Slitter Productivity," *Gibraltar Metals, Buffalo, NY* with SPIR/TCIE; $11,908 (July 2005 – November 2005); co-PIs R. Nagi, A. Gosavi. Two students supported.

30. "Office Layout Optimization," *LP Ciminelli, Buffalo, NY* with SPIR/TCIE; $19,299 (July 2005 – November 2005) PI R. Nagi; One students supported.

31. "Information Fusion Technology Development in Support of a Sensor Fusion Prototype," *Massachusetts Institute of Technology-Lincoln Laboratories*, $250,023, PI R. Nagi, co-PI Moises Sudit, James Llinas, and Stuart Shapiro, (May 2005 – December 2005); One post-doc and two students supported.

32. "Graph Theory and Information Fusion," *Lockheed Martin IS&S Supply Chain Management Systems and Solutions Business Unit/Orincon,* $100,000, co-PI R. Nagi, with PIs James Llinas and Moises Sudit, (December 2004 – December 2005); One student supported.

33. "Algorithmic and Methodological Research in Information Fusion for Army Objective Force Applications," *Army Research Laboratories, Adelphi MD,* $235,000, co-PI R. Nagi, with PIs James Llinas and Moises Sudit, (February 2004 – February 2005); One student supported.

34. "Innovative Fusion Capabilities: Tracking, Networking, and Visualization," *NIMA/Rosettex Technology and Ventures Group,* $553,564, co-PI R. Nagi, with PI T. Singh (MAE) and six other SEAS faculty, (February 2004 – August 2005); Two students supported jointly with Rajan Batta.

35. "Strategic Operations Assessment and Layout Optimization," *Tx Rx Systems, Angola, NY* with SPIR/TCIE; $14,020 (January 2004 – July 2004) PI R. Nagi; One students supported.

36. "Innovative Fusion Capabilities: Tracking, Networking, and Visualization," *NIMA/Rosettex Technology and Ventures Group,* $512,112, co-PI R. Nagi with PI T. Singh (MAE) and six other SEAS faculty, (August 2003 – February 2004); Two students supported jointly with Rajan Batta.

37. "Congestion in Facilities Location and Layout: Deterministic and Stochastic Models," *National Science Foundation,* DMII, Manufacturing Execution Systems program, $200,000, co-PI Rajan Batta, (June 2003 – May 2006); Two students supported per year.

38. "Scheduling to Minimize Stringer Utilization," *Outokumpu American Brass, Buffalo, NY* with SPIR/TCIE; $32,381 (March 2003 – August 2003) PI R. Nagi; Two students supported.

39. "Facilities Consolidation and Redesign," *Markar Architectural Products, Lancaster, NY* with TCIE; $19,820 (Sept. 2002 – Dec. 2002) PI R. Nagi; Two students supported.

40. "Product Flow Analyses and Facilities Redesign," *Bethlehem Steel, Lackawana, NY* with SPIR/TCIE; $26,943 (Feb. 2002 – June 2002) PI R. Nagi; Two students supported.

41. "Network Formulations for Distributed Mobile Fusion," *Boeing Co., St. Louis, MO*; $47,825 (May 2001 – Dec. 2001); co-PI J. Llinas, R. Nagi and R. Batta; Two students supported.

42. "Operations Analysis and Plant Layout/Facilities Redesign Studies," *Ferro Electronics Materials, Niagara Falls, NY*; $9,943 (Feb. 2001 – March 2001); co-PI Rajan Batta; One student supported.

43. "E-Business Initiatives at GE," *GE Transportation Systems, Erie, PA*; $11,988 (August 2000 – January 2001) PI R. Nagi; One students supported.

44. "Knowledge Acquisition and Scheduling System Design," *Carborundum Corporation, Amherst, NY* with SPIR/TCIE; $88,299 (July 2000 – May 2001) PI R. Nagi; Three students supported.

45. "Production Operational Assessment," *Gaymar Industries, Orchard Park, NY* with SPIR/TCIE; $11,549 (July 2000); co-PIs R. Nagi, Victor Paquet.

46. Matching grant for "Design and Implementation of a Knowledge-Based Agile Manufacturing Information System," (see item 66) *National Science Foundation*, $25,000 (August 2000 - July 2001). One student supported.

47. International supplement "Facility Layout (Re)Design Using Planar and Network Location Approaches," (see item 57) *National Science Foundation*, DMII Operations Research and Production Systems program, $14,000, (June 2000 - December 2000); co-Principal Investigator Rajan Batta.

48. REU supplement "Aisle Capacity Modeling in Layout Analysis," (see item 57) *National Science Foundation*, DMII Operations Research and Production Systems program, $10,000, (June 1999 - May 2000); co-Principal Investigator Rajan Batta. Two undergraduate students supported.

49. "Data Fusion Concepts and Novel Algorithms for Condition-Based Maintenance," *Applied Research Laboratory Penn State University, State College, PA* subcontract from MURI; $35,000 (May – December 1999); co-Principal Investigator James Llinas; One student supported.

50. "Operational Analysis and Facility Redesign Studies," *Republic Drug Company, Buffalo, NY* with SPIR/TCIE; $13,534 (May – July 1999); Two students supported.

51. Matching grant for "Design and Implementation of a Knowledge-Based Agile Manufacturing Information System," (see item 66) *National Science Foundation*, $24,700 (August 1999 - July 2000). One student supported.

52. "Operational Analysis and Facility Design Studies," *Imaging and Sensing Technology, Horseheads, NY* with SPIR/TCIE; $17,042 (October – December 1998); Two students supported.

53. "Operational Assessment: Facility Layout and Process Flow," *Milward Alloys Inc., Lockport, NY* with SPIR/TCIE; $10,239 (August – September 1998); One students supported.

54. "Time Studies, Process Flow and Inventory Control," *McKenica Corp., Buffalo, NY* with SPIR/TCIE; $15,671 (July – August 1998); Two students supported.

55. "Facility Design and Automation," *A Lunt Design Inc., Orchard Park, NY* with SPIR/TCIE; $6,518 (April -May 1998); One student supported.

56. Matching grant for "Design and Implementation of a Knowledge-Based Agile Manufacturing Information System," (see item 66) *National Science Foundation*, $25,000 (August 1998 - July 1999). One student supported.

57. "Facility Layout (Re)Design Using Planar and Network Location Approaches," *National Science Foundation*, DMII Operations Research and Production Systems program, $265,507, (June 1998 - May 2001); co-Principal Investigator Rajan Batta (PI). Two students supported per year.

58. "Facility Design Simulation Studies," *Graphic Controls Corp., Buffalo, NY* with SPIR/TCIE; $21,070 (February-March 1998); co-PI Rajan Batta. Four students supported.

59. "Facility Layout for High-bay Assembly and Sheet-Metal Areas," *Gemcor Inc., West Seneca, NY* through TCIE; $6,057 (August 1997). One student supported in summer.

60. "Pinpoint Enhancement Product Development," *Integral Information Systems, Amherst, NY* through SPIR; $10,152 (July 1997 - April 1998). One student supported for one year.

61. "Layout and Productivity Improvements at AVX Corporation," *AVX Corp., Myrtle Beach, SC* through TCIE; $4,409 (June 1997); co-PI L. Lin.

62. Matching grant for "Design and Implementation of a Knowledge-Based Agile Manufacturing Information System," (see item 66) *National Science Foundation*, $11,866 (August 1997 - July 1998). One student to be supported.

63. "Briquetting Productivity and Automation Enhancement," *Manitoba Corp., Lancaster, NY* through SPIR; $5,128 (December 1996 - January 1997). One student supported for one winter month.

64. "Cold-box and Component Classification Scheme," *Praxair, Inc., Tonawanda, NY*, $14,971 (June 1996 - August 1996); co-PI L. Lin. Two students supported in summer.

65. "Facility Layout under Cyclical Demand," *Gemcor Inc., Buffalo, NY* through TCIE; $8,636 with 50% credit to Industrial Engineering (June 1996 - July 1996). One student supported in summer.

66. "Design and Implementation of a Knowledge-Based Agile Manufacturing Information System," Faculty Early Career Development Program Award, *National Science Foundation*, Division of Design, Manufacture and Industrial Innovation, $210,000 (plus $10,000 from the Office of VP for Research as equipment challenge grant) (July 1996 - June 2000). Two graduate students supported per year.

67. "Assessment of Layout Design for Praxair's New Turbine Assembly Facility," *Praxair, Inc.*; $1,040, co-Principal Investigator L. Lin (October 1995).

68. "Fuzzy Framework for Multi-Resource Multi-Project Management," RDF fund, *SUNY at Buffalo*, Department of Industrial Engineering; $2,250 (November 1994 - September 1995). One graduate student supported.

69. "Tool Room Layout Assessment at American Axle," *American Axle and Manufacturing, Tonawanda, NY* through TCIE; $8,548 (August 1994); co-PI with R. Batta and L. Lin.

70. "Preliminary Facility Assessment at Buffalo Weaving and Belting," *Buffalo Weaving and Belting, Buffalo, NY* through TCIE; $1,080 (July 1994).

71. "Operational Assessment at Premier Image," *Premier Image, Buffalo, NY* through TCIE; $1,095 (March 1994).

72. "Plant Layout at R.D. Murray," *R.D. Murray Fire Apparatus, Hamburg, NY* through TCIE; $2,738 (January 1994).

73. "Optimal Selection of Partners in Agile Manufacturing," *US Army Tank-Automotive Command* Research Contract to University of Maryland; co-Principal Investigator with Harhalakis, G. and I. Minis (PI); Subcontract from University of Maryland, $68,199 of total $562,216 for 2 years (August 1993 - September 1995). Two graduate students supported.

B. Pending or To Be Resubmitted

1. "BIGDATA: Small: DA: Associating Complex Information from Large Heterogeneous Data Streams," research proposal submitted to *NSF's CORE technologies program*, $749,174, PI Rakesh Nagi, co-PIs Jason Corso and Stuart Shapiro (January 2013 – December 2015), June 2012.

2. "UAV Inspired New Vehicle Routing and Dispatching Formulations and Methods," research proposal submitted to *NSF's CMII, Operations Research program*, $271,371, co-PIs Rajan Batta and Mark Karwan (August 2010 – July 2012), February 2010.

3. "Integrated Design and Operation of Warehouse Sorting and Order Picking," research proposal submitted to *NSF's CMII, Manufacturing Execution Systems program*, $398,192, co-PI Rajan Batta (July 2009 – June 2012), February 2009.

4. "IGERT: Services Metamorphosis through Integrated Learning Environment, Service Systems Science, Engineering and Management," IGERT Training preproposal submitted to *NSF's IGERT program*, PI Rakesh Nagi, April 2008. (Not Invited.)

5. "Center for Disaster Prevention Engineering - Preventing Disasters Due to Failure of Interdependent Infrastructure Systems During Extreme Hazards," Engineering Research Center proposal submitted to *NSF's EEC, Engineering Research Center program*, $16,250,000, PI Michel Bruneau (August 2008 – July 2013), May 2007. Thrust area 1 leader. (Not invited.)

6. "EFRI-ARESCI Preliminary Proposal: Reconfigurable Urban Healthcare Infrastructures (RUHI)," research pre-proposal submitted to *NSF's EFRI program*, $1,927,429, PI Kemper Lewis, co-PIs Ernest Sternberg, Michel Bruneau, and Moises Sudit, November 2006. (Not invited)

7. "Design Methodologies for Mass Customized Products Considering Customer/Supplier Negotiation," research proposal submitted to *NSF's CMII, Engineering Design program*, $453,366, co-PI Bahattin Koc and Kemper Lewis (July 2007 – June 2010), October 2006. (Rejected)

8. "Collaborative Proposal: Modeling Uncertainty and Congestion in Facility Layouts," research proposal submitted to *NSF's CMII, Manufacturing Execution Systems program*, $438,506, co-PI Rajan Batta (July 2007 – June 2010), October 2006. (Rejected)

9. "Unmanned Aerial Vehicle Support to Marine Corps Operations Considering Weather Effects," *Naval Research Laboratories, DC* with CUBRC; $50,000 (Jan 2006 – September 2006); co-PI James Llinas, March 2006.

10. "Modeling and Alleviation of Workflow Congestion in Warehousing and Facility Operations," research proposal submitted to *NSF's DMII, Manufacturing Execution Systems program*, $432,004, co-PI Rajan Batta (August 2006 – July 2009), February 2006.

11. "Optimizing Coverage and Life Expectancy of Wireless Sensor Networks: Deterministic and Stochastic Models," research proposal submitted to *NSF's DMII, Service Enterprise Systems program*, $399,757, co-PIs Rajan Batta, Moises Sudit and Prachee Sharma (July 2006 – June 2009), October 2005. Rejected.

12. "Complex Assembly Variant Design in Agile Manufacturing: Models and Methodology," research proposal submitted to *NSF's DMII, Engineering Design program*, $365,983, (July 2005 – June 2008), October 2004. Rejected.

13. "SEII(ENG): Constraint-based Models and Mining for Engineering Design Data," research proposal submitted to *NSF's CISE, Information and Intelligent Systems Division*, $566,131, co-PI Bharat Jayaraman (September 2004 – August 2007), March 2004. Rejected TBR.

14. "ITR-NHS-(dmc): Communication Infrastructure Recovery and Transportation Logistics for Emergency Management," research proposal submitted to *NSF's DMII Service Enterprise Systems program*, $1,515,160, (August 2004 – August 2008), February 2004. Rejected TBR.

15. "Integrated Optimization Models in Location and Layout: Continuous or Discrete?," research proposal submitted to *NSF's SBE/INT, Western Europe program*, $86,488, co-PI Rajan Batta, (June 2003 – May 2006), November 2002. Rejected TBR.

16. "Rapidly Re-configurable Molds for Complex Heterogeneous Object Manufacturing," research proposal submitted to *NSF's DMII, Manufacturing Machines and Equipment program*, $389,453, co-PI Bahattin Koc, (July 2003 – June 2006), October 2002. Rejected TBR.

17. "Integrated and Reactive Scheduling Strategies for Production-Logistics Environments," research proposal submitted to *NSF's DMII, Manufacturing Execution Systems program*, $332,593, co-PI M.F. Anwar, University of Memphis (June 2003 – May 2006), October 2002. Rejected TBR.

18. "Data Mining-based Support System for Life Cycle Concerns in Variant Design," research proposal to be submitted to *NSF's DMII, Engineering Design program*, $300,872, (July 2003 – June 2006), February 2003.

C.   Previous Grant Support at University of Maryland

1. "Radio-Communications for Manufacturing Systems," Investigator, $45,000 project funded by *Westinghouse Corporation*, Jan - Dec 1991 (PIs Drs. G. Harhalakis and T. Ephremides).

2. "Optimal Facility Design and Cycle Time Reduction for Antenna Assembly," Investigator, $137,175 project funded by *Westinghouse Corporation* and MIPS, (Phase I : August 1991 - July 1992) (PIs Drs. G. Harhalakis and I. Minis).

3. "Optimal Facility Design and Cycle Time Reduction for Antenna Assembly," Investigator, $143,015 project funded by *Westinghouse Corporation* and MIPS, (Phase II : August 1992 - July 1993) (PIs Drs. G. Harhalakis and I. Minis).

11. EQUIPMENT GRANT SUPPORT

A. Funded

1. "Mobile Robots for Swarm Surveillance Research," *DURIP* award funded by *Army Research Office*, $294,138; co-PI with Jason Corso (PI), Murat Demirbas, Raymond Fu, and Venkat Krovi, June 2011.

2. Software grant, Visual Manufacturing from *Lilly Software Associates, Inc*. and JSR Applications Group, Hampton, NH, price valued at $24,700 (April 1999) with L. Lin.

3. "Establishment of a Virtual Reality-Based Synthetic Environment for Research and Interactive Design and Manufacturing," equipment proposal funded by *National Science Foundation* CISE University Research Instrumentation Program, $129,464 ($86,714 NSF + $42,750 UB cost sharing); co-Principal Investigator with T. Kesavadas (PI), C. Bloebaum and R. Acharya, November 1997.

4. "Development of Manufacturing Automation Program," Instrumentation and Laboratory Improvement proposal funded by the *Society of Manufacturing Engineers*, $40,000 for 1 year; co-Principal Investigator with T. Kesavadas (PI), L. Lin and R. Mayne (September 1997).

5. Software grant, ST-Developer from *STEPTools, Inc*., Rensselaer Technology Park, Troy, NY, academic price valued at $4,380 (January 1997).

6. "Continuous Development of Manufacturing Engineering Program," Instrumentation and Laboratory Improvement proposal funded by the *Society of Manufacturing Engineers*, $42,275 for 1 year; co-Principal Investigator with L. Lin (PI) (June 1995).

7. "Acquisition of High Performance Parallel Computer for School of Engineering and Applied Sciences," equipment grant from the Office of the Provost, *SUNY at Buffalo*, $228,000; co-Principal Investigator with nineteen assistant professors of the SEAS; member organizational committee of five PIs (1994).

12. EDUCATION AND OTHER GRANT SUPPORT

A. Funded

1. Public Service "Industrial Engineering Support," *Graphic Controls Corp., Buffalo, NY* with SPIR/TCIE; $4,570 (July-December 1998). One student supported in summer of 1998.

2. Riefler award, Dean's office, SEAS, *SUNY at Buffalo*, $950 (May 1997).

3. "Virtual Tour of Facilities Design using Multimedia," faculty grant program for developing instructional modules using Authorware, Instructional Technology Services, ASCIT, *SUNY*, software valued at $400 (June 1996).

4. "MS Office for Agile Manufacturing Lectures," faculty grant program for developing teaching tools, Instructional Technology Services, ASCIT, *SUNY*, software valued at $400 + $435 hardware (October 1995).

5. "Graduate Group for Integrated Design Engineering," graduate group grant from the Graduate school/Office of the Provost, *SUNY at Buffalo*, $2,500; co-chair with C. Bloebaum (September 1995 - August 1996).

6. Riefler award, Dean's office, SEAS, *SUNY at Buffalo*, $650 (June 1995 - September 1995).

7. Term Faculty development award program, *New York State/United University Professions*, professional development and quality of working life committee: "Research in Production Systems and Dissemination Plan," $340 (July 1994 - June 1995).

8. "Graduate Group for Integrated Design Engineering," graduate group grant from the Graduate school/Office of the Provost, *SUNY at Buffalo*, $2,800; co-chair with C. Bloebaum (July 1994 - June 1995).

9. Term Faculty development award program, *New York State/United University Professions,* professional development and quality of working life committee and the department of Industrial Engineering SUNY at Buffalo: "Research in Production Systems and Dissemination Plan," $200 + $250 (October 1993 - June 1994).

13. GRADUATE STUDENT SUPERVISION

A. Doctoral Students Graduated

1. Liugen Song; graduated 7/96. Dissertation title: "Design and Implementation of an Agile Manufacturing Information System for Virtual Manufacturing." Starting position: Computer System Administration and Development, Chase Manhattan Bank, NJ.

2. Muhammad F. Anwar; graduated 9/00. Dissertation title: "Integrated Transportation System and Workcenter Scheduling." Starting position: Assistant Professor, University of Memphis, TN.

3. Selçuk Savas; graduated 9/00. Dissertation title: "A Spatial Modeling Perspective to Problems in Facilities Layout," (co-advised with Rajan Batta). Starting position: Assistant Professor, Koç University, Istanbul, Turkey.

4. Ana Maria Sarmiento; graduated 1/01. Dissertation title: "An Integrated Production-Logistics Approach to Partner-Chain Design in Agile Manufacturing." *Recipient of the 1998 Doctoral Dissertation Proposal Award of Society of Logistics Engineers/International Society of Logistics.* Starting Position: Manager I2 Technologies, Dallas TX.

5. Aihu Wang; graduated 11/01. Dissertation title: "Variant Design of Complex Assemblies in Agile Manufacturing." Starting position: Faculty at School of Business Administration, South China University of Technology, Guangzhou, China.

6. Luis Sanchez; graduated 7/02. Dissertation title: "Location, Sizing and Production Allocation with Fixed and Mobile Manufacturing Facilities" Starting position: Professor and Director of Engineering and Science Department, ITESM Leon Campus, Mexico.

7. Chaewon Bang; graduated 1/03. Dissertation title: "A Hybrid Integrated Approach for Process Planning and Shop-Floor Scheduling in Agile Manufacturing." Starting position: General Manager of CIM, Hyundai Information Technology, Co., Ltd., Seoul, S. Korea.

8. Carol Romanowski; graduated 4/04. Dissertation title: "A Data Mining-based Engineering Design Support System." *Recipient of the 1999 Department of Energy (DOE) Doctoral Fellowship (for three years).* Currently: Assistant Professor, Center for Multidisciplinary Studies, College of Applied Science and Technology, Rochester Institute of Technology, NY.

9. Simin Huang; graduated 6/04. Dissertation title: "The Connection Location and Sizing Problem: Models, Methods and Applications to Supply Chain Design." (co-advised with Rajan Batta). Currently: Associate Professor, Department of Industrial Engineering, Tsinghua University China.

10. Avijit Sarkar; graduated 8/04. Dissertation title: "Finite-Size Facility Placement in the Presence of Generalized Congested Regions." (co-advised with Rajan Batta). Position: Assistant Professor, School of Business, University of California, Redlands CA.

11. Alfred Guiffrida; graduated 5/05. Dissertation title: "Cost Characterizations of Supply Chain Delivery Performance." Position: Assistant Professor, Business School, Kent State Univ., Kent OH.

12. Abhay Joshi; graduated 1/06. Dissertation title: "Optimization Approaches to Network Topology Design For Dynamic Distributed Wireless Sensing in a Hostile Environment." (co-advised with Rajan Batta). Position: Business Analyst, Curbell Inc., Orchard Park NY.

13. Kedar Sambhoos; graduated 12/06. Dissertation title: "Graph Matching Applications in Homeland Defense." (co-advised with Moises Sudit). Currently: Scientist at CUBRC, Buffalo NY.

14. Satyaki Ghosh Dastidar; graduated 1/07. Dissertation title: "Discounting, Pricing and Ordering Policies for the US Automotive Dealerships." Currently: Risk Analyst, JP Morgan Chase, Columbus OH.

15. Min Zhang; graduated 11/07. Dissertation title: "Designing the Layout and Routing for a Manufacturing Facility to Mitigate Workflow Congestion." (co-advised with Rajan Batta). Currently: Operations Research Analyst, Avis Budget Group, Inc.

16. Michael Holender; graduated 6/08. Dissertation title: "Conceptual Spaces as a Modeling System for Information Fusion." (co-advised with Moises Sudit). Currently: Raytheon, MA.

17. Feng Pan; graduated 12/09. Dissertation title: "Opportunistic Supply Chain Design in Agile Manufacturing: Models and Heuristics." Currently: Supply Chain Consultant, Terra Technologies, Norwalk, CT.

18. Jingyang Xu; graduated 9/10. Dissertation title: "Complex Scheduling Problems in Manufacturing and Railroad Industries." Currently: Operations Research Analyst, Mitsubishi Electric Research Laboratories, Cambridge, MA.

19. Frank Muffali; graduated 3/11. Dissertation title: "Simultaneous Sensor Selection and Routing of Unmanned Aerial Vehicle for Complex Mission Plans." (co-advised with Rajan Batta). Currently: Praxair, North Tonawanda, NY.

20. Gregory Tauer; graduated 9/12. Dissertation title: "Data Association on Large Quantities of Complex Data." (co-advised with Moises Sudit.) Currently: CUBRC, NY.

21. Katie McConky; graduated 12/12. Dissertation title: "Applications of Location Similarity Measures and Conceptual Spaces to Event Coreference and Classification." (co-advised with Moises Sudit.) Currently: CUBRC, NY.

22. Ying Zhang; graduated 1/13. Dissertation title: "Model Elicitation in Nation-Building Simulation: Analytic Network Process for Ranking Decisions and Petri Nets for Robust Optimization." (co-advised with Moises Sudit.) Currently: Supply Chain Consultant, Terra Technologies, Norwalk, CT.

B. Doctoral Students under Supervision

23. Melih Temel; expected graduation 6/13. Tentative dissertation title: "Warehouse Layout, Order Picking and Sorting." (co-advised with Rajan Batta.)

24. Jerry Behar; expected graduation 9/13. Tentative dissertation title: "Design Optimization for Mass Customization under Competition." (co-advised with Bahattin Koc.)

25. Noah Bednowitz; expected graduation 6/13. Tentative dissertation title: "Spatial Queueing in UAV target assignment." (co-advised with Rajan Batta.)

26. Younggi Song; expected graduation 6/13. Tentative dissertation title: "Distribution and Logistics."

27. Jared Holsopple; expected graduation 9/13. Tentative dissertation title: "Course of Action Analysis." (co-advised with Moises Sudit.)

28. Guisselle Adriana Garcia Llinas; expected graduation 6/13. Tentative dissertation title: "Infrastructure Network Interdependency." (co-advised with Moises Sudit.)

29. Geoff Gross; expected graduation 9/13. Tentative dissertation title: "Stochastic Graph Matching."

30. Sushant Khopkar; expected graduation 12/13. Tentative dissertation title: "Social Network Analysis." (co-advised with Alexander Nikolaev.)

31. William Hughes; expected graduation 9/14. Tentative dissertation title: "Conditional Random Fields in Entity Relationships."

32. Tim Hung; expected graduation 9/14. Tentative dissertation title: "Simulation studies in Robust Supply Chain Design."

33. Yan Xia; expected graduation 9/15. Tentative dissertation title: "Stochastic models in UAV routing." (co-advised with Rajan Batta.)

34. Robert Matthew Welch; expected graduation 9/15. Tentative dissertation title: "Stochastic models in UAV routing." (co-advised with Rajan Batta.)

35. Michael Couche; expected graduation 9/15. Tentative dissertation title: "Game theoretic approach to evaluating the cost of anarchy in UAV fleet routing." (co-advised with Mark Karwan.)

36. Ketan Date; expected graduation 9/15. Tentative dissertation title: "Assignment and Association Problems."

37. Hossein Nick Zinat Matin; expected graduation 9/16. Tentative dissertation title: "Uncertainty Representation, Transformation and Decision Making under Uncertainty."

38. Raihan Habib Razib; expected graduation 9/16. Tentative dissertation title: "Probabilistic Graphical Models in Abductive Inference."

C. Master's Student Graduated (with Thesis)

1. Shekhar Iyer; graduated 4/95. Thesis title: "Identification and Ranking of Similar Parts in Agile Manufacturing." Currently at I2 Technologies, Dallas, TX.

2. Pramod Gupta; graduated 5/95. Thesis title: "Flexible Optimization Framework for Partner Selection in Agile Manufacturing." Currently at Delphi Harrison Thermal Systems, Lockport, NY.

3. Muhammad F. Anwar; graduated 8/95. Thesis title: "Just-In-Time Production of Complex Assemblies with Finite Set-up Costs." Continued as PhD student at UB/ISE.

4. Vallish Shankar; graduated 7/96. Thesis title: "A Flexible Optimization Approach to Multi-Resource, Multi-Project Planning and Scheduling." Currently at Coopers and Lybrand, Chicago, IL.

5. Mangesh Bhandarkar; graduated 6/97. Thesis title: "Satisfying Data needs in Agile Manufacturing through Translation and Feature Extraction into STEP Product Models." Currently at Netfish Technologies, Santa Clara, CA.

6. Vishwanathan Ramabhatta; graduated 7/97. Thesis title: "An Object Hierarchy Scheme for Complex Assemblies to aid Information Retrieval and Work Process Database Integration," (co-advised with Li Lin). Currently Senior Consulting Engineer at Aspect Corp., Nashua, NH.

7. Shun L. Ng; graduated 7/97. Thesis title: "A Web-Centric System for Concurrent Engineering of Transfer Molded Components;" (co-advised with Li Lin).

8. Matthew Kane; graduated 8/97. Thesis title: "Integrated Material Flowpath and Layout in Facilities Design." Currently: Plant Engineer, Dunlop Tire Corp., Buffalo, NY.

9. Sumiathangi Sriram; graduated 8/98. Thesis title: "A Hierarchical and Dynamic Distribution System for Agile Manufacturing based on Distributed Object Technology." Currently at I2 Technologies, Dallas, TX.

10. Milind Mehere; graduated 8/98. Thesis title: "Integrated Distribution System Design with Warehouse Location and Logistics." (co-advised with Joyendu Bhadury). Currently at I2 Technologies, Cambridge, MA.

11. Siddharth Batra; graduated 8/98. Thesis title: "Integrating Order Picking and Sortation in Warehouse Distribution Systems." Currently at 3Com, Santa Clara, CA.

12. Ya-Ming Shiue; graduated 11/98. Thesis title: "A Decision Support Tool for Selecting and Sequencing Regularly Visited Customers in Courier Routing." (co-advised with Christopher Rump). Currently at Xerox, Rochester, NY.

13. Osman Kazan; graduated 12/98. Thesis title: "New Lot-Sizing Formulations for Less Nervous Production Schedules." (co-advised with Christopher Rump). Currently at Dopkins and Co., Buffalo, NY.

14. Lopamudhara Subramanian; graduated 12/98. Thesis title: "A Workflow Management System for Agile Manufacturing Enterprises." Currently Implementation Engineer at SDRC, Long Island, NY.

15. Kristen Wen; graduated 1/99. Thesis title: "Unit Cost Reduction through a Dynamic Staffing System for Unreliable Transfer Lines." Currently Manufacturing Engineer at GM Powertrain, Tonawanda, NY.

16. Carol Romanowski; graduated 1/99. Thesis title: "Setting Preventive Maintenance Schedules and Alarms Using Data Mining Techniques." Continued as PhD student at UB/ISE.

17. Harshvardhan Singh; graduated 6/99. Thesis title: "Time-Phased Manufacturing Cell Formation: A Cost Based Approach." Currently at I2 Technologies, Parsippany, NJ.

18. Balaji Venkatesan; graduated 6/99. Thesis title: "An IT-OR Approach to Project Management in an Agile Manufacturing Environment." Currently at I2 Technologies, Cambridge, MA.

19. Alfred Guiffrida; graduated 8/99. Thesis title: "A Cost-Based Model for Evaluating Vendor Delivery Performance." Currently pursuing a Ph.D. degree at University at Buffalo.

20. Parag Kulkarni; graduated 8/99. Thesis title: "Effect of batch move size on Just-In-Time production of Multi-level Assemblies." Currently at Microstrategy, Vienna, VA.

21. Amol Adgaonkar; graduated 10/99. Thesis title: "Multiperiod Newsvendor Model with Forecast Update;" (co-advised with Ram Akella). Currently at I2 Technologies, Dallas, TX.

22. Liangyu Zhou; graduated 12/99. Thesis title: "Design of Distributed Information Systems for Virtual Enterprises using CORBA." Currently working for a software company, Columbus, OH.

23. Amol Amritkar; graduated 12/99. Thesis title: "Impact of Heijunka (Level Scheduling) on Internal Supply Chain Management in JIT Manufacturing Environment." Currently at I2 Technologies, Dallas, TX.

24. Pavankumar Nandikonda; graduated 9/00. Thesis title: "1-Center Facility Placement in a Rectilinear Plane with Barriers;" (co-advised with Rajan Batta). Currently at See-Commerce Technologies, Palo Alto, CA.

25. Dhruv Raheja; graduated 1/01. Thesis title: "A Data Fusion-Based Architecture for Condition-Based Maintenance." (co-advised with James Llinas). Currently at ArborText, MA.

26. Rahul Bhatia; graduated 1/01. Thesis title: "Reactive Scheduling in Workflow Management Systems using Column Generation." Currently at I2 Technologies, Dallas, TX.

27. Sanjay Ramanujan; graduated 1/01. Thesis title: "Decision Support System for Integrated Assembly Plan Generation and Task Scheduling." Currently at ILOG, Mountainview, CA.

28. Sushant Bhadange; graduated 1/01. Thesis title: "Disassembly Sequence Generation based on Mating Graph and Access Directions." Currently Product Development Engineer at Reveo, Inc., Hawthorne, NY.

29. Ashwin Warrier; graduated 8/01. Thesis title: "A Decision Support Tool for the Inventory Allocation and Vehicle Routing Problem." Currently at SCT Corp. (supply-chain consulting), Philadelphia, PA.

30. Avijit Sarkar; graduated 5/02. Thesis title: "Study of Rectilinear Least Cost Travel (Path and Entry/Exit) Through Convex Polygonal Congested Regions." (co-advised with Rajan Batta). Continued as PhD student at UB/ISE.

31. Dipeshkumar Patel; graduated 12/02. Thesis title: "Clustering Sensors in Wireless *ad hoc* Networks using a Dynamic Expected Coverage Model." (co-advised with Rajan Batta). Entrepreneur at Dipesh Engineering Works, Mumbai India.

32. Hari Kelachankuttu; graduated 5/03. Thesis title: "Contour Line Construction for a New Rectangular Facility in an Existing Layout with Rectangular Departments." (co-advised with Rajan Batta). Currently employed by a Cable manufacturer in Pune, India.

33. Nishant Mishra; graduated 8/03. Thesis title: "Capacity and Non-steady state Generalizations to the Dynamic MEXCLP model for Distributed Sensing Networks." (co-advised with Rajan Batta). Continued as PhD student in London Business School.

34. Abhay Joshi; graduated 8/03. Thesis title: "Reactive Scheduling in Workflow Management Systems: A Branch-and-Price Approach." Continued as PhD student at UB/ISE.

35. Satyaki Ghoshdastidar; graduated 8/03. Thesis title: "Hierarchical Production Scheduling of Parallel Machines in the presence of Multiple Tooling and Resource Constraints and Sequence-Dependent Setup Times: Applications in Injection Molding Operations." Continued as PhD student at UB/ISE.

36. Sachin Mujawar; graduated 8/04. Thesis title: "Scheduling to Minimize Stringer Utilization for Continuous Annealing Operations." Starting position, Research Engineer at FM Global, Boston/Norwood, MA.

37. Bhaveshkumar Joshi; graduated 8/04. Thesis title: "Portable Dynamic Message Signs (PDMS) Implementation to Improve Work Zone Safety." (co-advised with Stuart Chen). *Recipient of the Intelligent Transportation System (ITS)-NY Best Student Paper Competition, June 2004*.

38. Vinay Bendre; graduated 8/04. Thesis title: "Capacitated Quadratic Assignment Problem: Models, Algorithms and Applications." Starting position: Logistics Analyst at CHEP, FL.

39. Ramkumar Iyer; graduated 8/04. Thesis title: "Location, Sizing and Production Allocation Problem: A Column Generation Approach." Starting position: Supply-chain Engineer, Continental Airlines, Jersey City, NJ.

40. Kedar Sambhoos; graduated 8/04. Thesis title: "Precedence relationships in assembly mating graphs." (co-advised with Bahattin Koc). Continued as PhD at University at Buffalo.

41. Esra Cosar; graduated 7/05. Thesis title: "Performance Evaluation of a Mathematical Programming-based Clustering Algorithm for a Wireless *Ad Hoc* Networks Operating in a Threat Environment." (co-advised with Rajan Batta). Currently Operations Research Analyst at ZS Associates, New York, NY.

42. <u>Purvin Shah</u>; graduated 8/05. Thesis title: "Optimizing Usage of Recycled Materials in a Remanufacturing Environment." (co-advised with Abhijit Gosavi). Currently Industrial Engineer, Depew, NY.

43. <u>Parikshi Nukala</u>; graduated 5/06. Thesis title: "Open Source Workflow Management System with a Task Scheduling Tool." Currently Project Controls Engineer II, Bechtel Corporation, Cerritos, CA.

44. <u>Ozgur M. Araz</u>; graduated 9/06. Thesis title: "Incorporating Weather Systems in Cooperative UAV (Unmanned Aerial Vehicle) Search: A Probabilistic Approach." PhD student at ASU.

45. <u>Amanda J. Burger</u>; graduated 12/06. Thesis title: "Managing Processes using the Process Window Monitor: An Alternative Human Centered Statistical Process Control Tool." Currently, Manufacturing Engineer, Northrop Grumman Corporation Amherst Systems, Amherst, NY.

46. <u>Ming-Liang Fang</u>; graduated 5/07. Thesis title: " Dynamic Pricing in Continuous Time with Cancellation and Refund Policies." Currently, Operations Research Engineer, AIM Engineering, Seattle, WA.

47. <u>Younggi Song</u>; graduated 12/07. Thesis title: "Inventory Reduction by Converting Make-to-Stock parts to Make-to-Order." Continued as PhD student at UB/ISE.

48. <u>Chinmay R. Abhayankar</u>; graduated 12/07. Thesis title: "Location, Capacity Expansion and Production Planning in Pharmaceutical Industry under Stochastic Demand." Currently, Analytic Science – Scientist I, Fair Isaac Corporation.

49. <u>Frank Muffali</u>; graduated 1/08. Thesis title: "Complexity Measures and Congestion Issues in Wireless Sensor Networks." Continued as PhD student at UB/ISE.

50. <u>Akhil Mishra</u>; graduated 9/08. Thesis title: "Workflow Pattern Mining using E-mail Communications." Currently, Intel Corporation, Arizona.

51. <u>Parthiban Thayalan</u>; graduated 9/08. Thesis title: "Comparative Study of Item Storage Policies, Vehicle Routing Strategies and Warehouse Layouts Under Congestion." Operations Research Engineer, ADecTec-Applied Decision Technologies, Inc., Atlanta, GA.

52. <u>Mingguo Zhu</u>; graduated 9/09. Project title: "Positioning Decoupling Points Among Bills of Materials' Components."

53. <u>Varsha Deshmukh</u>; graduated 9/10. Thesis title: "Order Batching in a Warehouse Based on Garcia Proth Method."

54. <u>Sushant Khopkar</u>; graduated 9/10. Thesis title: "Incremental Algorithms for Centrality Metric Calculations in Social Network Analysis." Continued as PhD student at UB/ISE.

55. <u>Ketan Date</u>; graduated 4/12. Thesis title: "Placement of Two Finite-Size Facilities in an Existing Layout with the Rectilinear Distance Metric." Continued as PhD student at UB/ISE.

56. <u>Yan Xia</u>; graduated 5/12. Thesis title: "Influence of positive order fulfillment time in batch production system." Continued as PhD student at UB/ISE.

D. Master's Students under Supervision

57. <u>None currently</u>

E. Master of Engineering Students Graduated (with Project)

1. Christopher Massing; Gradiated 9/10. Project title: " Quality and Cycle Time Improvement in Web Conversion of 40mm Product." Currently Process Engineering Manager, Techni‑Met, Hartford, CT.

2. Ankush Kaul; Graduated 5/06. Project title: "Improving Supplier Quality at Praxair." (co-advised with Alfred Guiffrida). Currently Engineering, Praxair Inc., Tonawanda, NY.

F. Undergraduate Research Students

1. Georgia Cruz; Appointed Spring and Fall 2012. Research title: "Data Association and Ground Truthing."

2. Oyinkansola Akintan; Appointed Spring 2011. Research title: "Web Services Selection for end-to-end QoS."

3. David Myers; Appointed Spring 2008. Research title: "Markov Chain Models in Stability Operations." (co-advised with Moises Sudit and Abhijit Gosavi).

4. David Myers and John Coles; Appointed Fall 2007. Research title: "Nation building simulation." (co-advised with Moises Sudit).

5. John Coles; Appointed Spring 2007. NSF/REU student, research title: "Warehouse Simulation Software Programming." (co-advised with Rajan Batta).

6. Lisa Murawski; Appointed Spring 2004. NSF/REU student, research title: "Congestion and Time Dependent Shortest Paths." (co-advised with Rajan Batta).

7. Stephanie Schinzing and Karriane Paolo; Appointed Spring 2000. NSF/REU student, research title: "Comparison of Academic and Commercial Facility Layout Programs and their Application in Industry." (co-advised with Rajan Batta).

14. GRADUATE COMMITTEE ASSIGNMENTS

A. Doctoral Dissertation

1. Gina Galindo; graduated 01/13. Dissertation title: "Prepositioning Supplies in Preparation for a Foreseen Hurricane." (Chair: Rajan Batta).

2. Yidong Zhang; graduated 01/12. Dissertation title: "Long Term CO_2 Sequestration System Modeling." (Chair: Mark Karwan).

3. Ibrahim Ozbolat; graduated 01/11. Dissertation title: "Tissue Engineering." (Chair: Bahattin Koc).

4. Chase C. Murray; graduated 6/10. Dissertation title: "Dynamic Reassignment and Rerouting in Cooperative Airborne Operations." (Chair: Mark Karwan).

5. Adam Stotz; graduated 11/08. Dissertation title: "Bridging Human and Computer Fusion Processes and Advancements in Graph Matching for Information Fusion." (Chair: Moises Sudit).

6. Thyagarajan, Karthik; graduated 8/07. Dissertation title: "Modeling Distribution Issues in the Industrial Gas Business;" (Chair: Mark Karwan).

7. Jha, Pratik; graduated 5/07. Dissertation title: "Air Traffic Controller's Performance in Advanced Air Traffic Management Concept;" (Chair: Amy Bisantz).

8. Zhao, Hongxia; graduated 12/06. Dissertation title: "Branch and Cut for Single Machine Scheduling;" (Chair: Ismael DeFarias).

9. Karhaman, Aykut; graduated 6/06. Dissertation title: "Cargo Systems;" (A-exam: February 2006; Chair: Abhijit Gosavi).

10. Voit, John; graduated 5/06. Dissertation title: "Organizational Learning;" (A-exam: April 2003; Chair: Colin Drury).

11. Neelakantan, Jayasankar; graduated 9/05. Dissertation title: "Strategies for Clearance Markdown Optimization for Retail Goods;" (A-exam: Feb 2004; Co-chairs: Abhijit Gosavi and Rajan Batta).

12. Ma, Maggie; graduated 9/04. Dissertation title: "Human Factors in Data Mining Process: A Function Allocation Perspective;" (A-exam: April 2003; Chair: Colin Drury).

13. Hong, Seungkweon; graduated 9/02. Dissertation title: "Human Performance in Visual Search for Multiple Targets;" (A-exam: July 2001; Chair: Colin Drury).

14. Chen, Shi-Jie; graduated 9/99. Dissertation title: "Project Task Coordination and Team Organization in Concurrent Engineering;" (A-exam: August 1998; Chair: Li Lin).

15. Ping Xie; graduated 11/97. Dissertation title: "A Hierarchical Capacity Planning and Production Control System;" (A-exam: April 1996; Chair: Li Lin).

16. Wesley S. Changchien; graduated 5/96. Dissertation title: "Concurrent Product Life-Cycle Design Framework;" (A-exam: February 1995; Chair: Li Lin).

17. Jia-Jiunn Lo; graduated 5/95. Dissertation title: "Real-Time and Feedback Control of Flexible Manufacturing Systems;" (A-exam: March 1995; Chair: Li Lin).

B. Doctoral Dissertation Outside Reader

1. Hua-wei Chi; graduation 6/96. Dissertation title: "Mixed Variable Optimization Methods for Complex Engineering System Design;" (Chair: C.L. Bloebaum, Mechanical and Aerospace Engineering, SUNY Buffalo).

2. Kevin Hulme. graduation 1/00 "Development of a Framework for the Solution of Simulation-based Coupled Design Problems in Multidisciplinary Design Optimization;" (Chair: C.L. Bloebaum, Mechanical and Aerospace Engineering, SUNY Buffalo).

3. Fu Yonghui; 9/02. "A Coordination Approach for Inventory Alignment in Decentralized Supply Chains;" (Chair: Rajesh Piplani, School of Mechanical and Production Engineering, Nanyang Technical University, Singapore).

4. Cyril Duron; 11/02. "Ordenancement en temps réel des activités des radar;" (Chair: Jean-Marie Proth, D.Sc. in Mathématiques, Informatique, Méchanique, University de Metz, France).

5. Linda Lianfeng Zhang; 11/02. "Process Platform-based Production Configuration for Mass Customization;" (Chair: Roger Xin, Nanyang University, Singapore).

C. Master's Thesis

1. Ling-Feng Tung; graduated 12/94. Thesis title: "Multiple-objective Scheduling for the Hierarchical Control of Flexible Manufacturing Cells;" (Chair: Dr. Li Lin).

2. Manish Shah; graduated 1/95. Thesis title: "An MRP-driven AGV Control System with Object-Oriented Implementation;" (Chair: Dr. Li Lin).

3. Chih-Wei Hu; graduated 5/97. Thesis title: "A Linear Programming Approach to the Problem of Minimizing Expected Economic Loss;" (Chair: Dr. Wayne Bialas).

4. Kun_Hur Chen; graduated 6/97. Thesis title: "A Graphical User Interface for Concurrent Engineering Design of Mechanical Parts;" (Chair: Dr. Li Lin).

5. Michael J. Halter; graduated 4/98. Thesis title: "Factors that Influence Nurses' Decisions to use or not use Patient Transfer Equipment and Job Factors Related to Back Pain among Nursing Personnel;" (Chair: Dr. Colin Drury).

6. Puah Sen Ann; 4/01. Thesis title: "Production Planning in Semiconductor Industry Using Simulation: Simplification Strategies;" Master of Engineering, School of Mechanical and Production Engineering, Nanyang Technical University, Singapore.

7. Urmil Desai; graduated 12/03. Thesis title: "A Neural Network Approach to Automated Grouping of 3D CAD Models using Feature Signatures;" (Chair: Dr. T. Kesavadas, MAE Department).

8. Aditya Kelkar; graduated 12/03. Thesis title: "Geometric Analysis and Planning of Hybrid Manufacturing Systems using Re-configurable Molding and Multi-Axis Machining;" (Chair: Dr. Bahattin Koc).

9. Vijay K. Shetty; graduated 5/04. Thesis title: "A Framework for Priority-Based Assignment and Routing of a Fleet of Unmanned Combat Aerial Vehicles;" (Chair: Dr. Moises Sudit).

10. Srinivas Sundaragopal; graduated 3/05. Thesis title: "A Neural Network Guided Clustering Algorithm for Unsupervised Micro-Array Data Analysis;" (Chair: Dr. Abani Patra, MAE dept.).

11. Vamsi Tangirala; graduated 8/05. Thesis title: "3D parameterization and Bridge Information Modeling of slab on girder bridges;" (Chair: Dr. Stuart Chen, Civil Eng dept.).

D. Indirect Supervision at University of Maryland

1. Anshu Mehra (Ph.D. student at University of Maryland advised by Drs. I. Minis and J.M. Proth): "Temporal Aggregation and Decomposition Schemes in Hierarchical Production Management Systems," graduated July 1995.

2. Ashutosh Agrawal and Thomas Lu (M.S. students at University of Maryland advised by Drs. G. Harhalakis and I. Minis): "Optimization of Lead-times for Westinghouse MRP and Shop Floor Control Systems," graduated 1993.

3. George Ioannou (Ph.D. student at University of Maryland advised by Drs. G. Harhalakis and I. Minis): "Plant Design," graduated September 1995. Starting Position at Virginia Tech.

15. ADMINISTRATIVE ACTIVITIES AND UNIVERSITY SERVICE

Chair, Department of Industrial and Systems Engineering, UB (2006-2012).
Search Committee, Life Cycle Team Leader, UB/RF Sponsored Projects Services (2009).
Search Committee, Director, UB Immigration Services (2007).
University at Buffalo Faculty Senate Committee (2002-2004).
Review Panel for IRCAF (Interdisciplinary Research and Creative Activities Fund) proposals (2004).
SEAS Grievance Panel for Graduate Affairs (2002).
Director of Graduate Studies (1999-2001).
Committee Member, ABET review (2001-2002).
Graduate seminar coordinator (1998-1999).
Chair, production systems faculty search committee (1996-1997).
Graduate Admissions and Affairs committee (1996-1998, 2001-2003).
Graduate Awards committee (1996-1998).
Comprehensive Exam Administrator (1993-1998).

M.S. Comprehensive Oral Exam committee (1996-1998, 2000-2003).
Computer Laboratory faculty manager (1993-1999).
Co-Director, Intelligent Manufacturing Systems Laboratory (1996-).
Faculty Advisor, Society of Manufacturing Engineers (1996-).
Faculty Advisor, Tau Beta Pi (1997-1999).
Production Planning and Control review committee (1993-1994).
SEAS mini-super computer steering committee (1994-1996).
SEAS computer advisory and advocacy committee (1996-1998).
SEAS information technology needs committee (1997-1998)
Departmental space evaluation committee (1994).
Co-Chair Graduate Research Group in Integrated Design Engineering (1994-1996).
Graduate Research Group in Applied Artificial Intelligence in Engineering (1994-1995).

16. SERVICE ACTIVITIES FOR SCIENTIFIC JOURNALS AND CONFERENCES

A. Editorial Board of Scientific Journals

1. Associate Editor, International Journal of Production Research (IJPR) 2012 - .
2. Associate Editor, IIE Transactions, 2007 (2), 2009, 2010-2011 (2), 2012 (1).
3. International Journal of Agility, by International Society for Agile Manufacturing, 1997.

B. Program Committees and Session Chair

1. Manufacturing and Design Track Chair, IE Research Conference, 2010.
2. Session Chair (Organized "Retail Facility Design" session in Facilities Logistics), IE Research Conference, 2009.
3. Session Chair (Organized "Optimization in Military Applications: Resource Management and Course of Action" session in Military Applications), INFORMS Conference, 2008.
4. Manufacturing Systems Track co-chair, IE Research Conference, 2007.
5. Program Committee (*Proceedings co-editor*), IE Research Conference, 2006.
6. Session Chair (Organized "Recent Advances in Location Analysis and New Applications" session in Location Analysis), INFORMS Conference, 2007.
7. Session Chair (Organized "OR in Information Fusion" session in Military Applications, and Tutorial in Location Analysis), INFORMS Conference, 2006.
8. Program Committee (Organized Manufacturing Systems Tracks) and Session Chair, IE Research Conference, 2004.
9. Session Chair, IE Research Conference, 1999.
10. Session Chair, IE Research Conference, 1998.
11. Session Chair, IE Research Conference, 1996.
12. Scientific Committee, IEEE Industrial Electronic Society/INRIA, Conference on Emerging Technologies and Factory Automation, 1995.

C. Prestigious Review Activities for Agencies

1. National Science Foundation, Ad hoc reviewer CMII/Design Program, September 2009.
2. National Science Foundation, Panel Review for CMII/MES Program, October 2007.
3. US Department of State for Science Centers, August 2002.

4. National Science Foundation, Panel Review for DMII Division, May 2002, June 2004.
5. National Science Foundation, Evaluator Engineering Research Center site, May 2001, 2003, 2004.

D. Review Activities for Journals, Conferences and Professional Societies

1. Wiley Encyclopedia of Operations Research and Management Science (2009).
2. IEEE Transactions on Industrial Informatics (2009).
3. International Journal of Industrial and Systems Engineering (2009).
4. Information Fusion Journal (Elsevier) (2009).
5. IIE Transactions, 1992, 1995, 1997(2), 1998 (2), 1999, 2000, 2001 (2), 2002, 2003 (3), 2004 (2), 2005, 2009.
6. Journal of Manufacturing Systems, 2003.
7. European Journal of Operational Research, 1997, 1998(2), 2001, 2005, 2008.
8. IEEE Transactions on Robotics and Automation, 1997 (2), 1998, 2001.
9. IEEE Transactions on Automation Science and Engineering, 2004.
10. International Journal of Flexible Manufacturing Systems, 1996, 2001.
11. International Journal of Computer Integrated Manufacturing, 2005.
12. International Journal of Production Economics, 2005.
13. Computers & Operations Research, 1997, 2005.
14. Computers & Industrial Engineering, 2002, 2004.
15. International Journal of Production Research, 1997, 1998.
16. Production Planning and Control, 1998.
17. ASME Transactions, Journal of Mechanical Design, 1998.
18. ASME Transactions, Journal of Computing and Information Science in Engineering (JCISE), 2005.
19. ASME, 1993, 1994.
20. Applied Ergonomics, 1999.
21. IE Research Conference, 1995, 1996, 1997.
22. ORSA Journal on Computing, 1994.
23. Annals of Operations Research, 1995, 1996, 1997.
24. IEEE CDC, 1995.
25. IEEE Control System Society, 1993.
26. IEEE Robotics and Automation Conference, 1995.
27. IEE, Workshop on Discrete Event Systems (WODES), 1996.
28. IEEE Transactions on Automatic Control, special mini-issue on Modeling and Analysis of Multidimensional Queuery Systems," July 1990.
29. Chapter for Edited Book: Group Technology & Cellular Manufacturing 1996.

E. Review Activities for Publishers

1. Prentice Hall, Upper Saddle River, NJ, Facilities Design text by Sunderesh Heragu.

17. PROFESSIONAL AND INDUSTRIAL ACTIVITIES

A. Leadership Activities in Professional Societies

Chair, Committee for Development of IE Recruitment Video, funded by Council of Industrial Engineering Academic Department Heads (CIEADH), *Industrial Engineers Make A Difference*, won the **2011 NY Emmy Award** in Informational/Instructional: Feature/Segment.

Elected Member, College-Industry Council on Material Handling Education (CICMHE), Material Handling Industry of America (MHIA) (2004-2007).

Chair Communications (and newsletter editor) Manufacturing Division of Institute of Industrial Engineers (1998-1999).

Continuing Education Program Review Committee of Institute of Industrial Engineers (1998-1999).

B. Professional and Honor Societies

Fellow, Institute of Industrial Engineers.

Member INFORMS, Institute For the Operations Research and the Management Sciences

Past Member, American Society of Engineering Education.

Affiliate Member (and Faculty Advisor) Society of Manufacturing Engineers.

Phi Kappa Phi; Tau Beta Pi; Omega Rho

Research specialist in The Center for Industrial Effectiveness

C. Industrial Consultancies

1. "Variable Tunable Design for Compressor," *Dresser-Rand, Co*., Olean, NY (January 2009).
2. "Supply Chain Optimization," *Stollberg, Inc*., Niagara Falls, NY (November 2006 – July 2007).
3. "Facility Layout Redesign," *Flame Control Coatings, LLC*, Niagara Falls, NY (August 2006 – Dec 2006).
4. "Manufacturing and Warehouse Layout Study," *Curbell Inc*., Orchard Park, NY (Jan 2006 – May 2006).
5. "Improving Oscillating Slitter Productivity," *Gibraltar Metals*, Buffalo, NY (July 2005 – November 2005).
6. "Office Layout Optimization," *LP Ciminelli, Buffalo, NY* (July 2005 – November 2005).
7. "Graphs and Optimization for Level 2/3 Fusion," *Lockheed Martin, NY;* December 2004 – December 2005.
8. "Strategic Operations Assessment and Layout Optimization," *Tx Rx Systems, Angola, NY;* January 2004 – July 2004.
9. "Scheduling to Minimize Stringer Utilization," *Outokumpu American Brass, Buffalo, NY;* March 2003 – August 2003.
10. "Facilities Consolidation and Redesign," *Markar Architectural Products, Lancaster, NY;* Sept. 2002 – Dec. 2002.
11. "Product Flow Analyses and Facilities Redesign," *Bethlehem Steel, Lackawana, NY*; Feb. 2002 – June 2002.
12. "Operations Analysis and Plant Layout/Facilities Redesign Studies," *Ferro Electronics Materials, Niagara Falls, NY*; February 2001 – March 2001.
13. "Knowledge Acquisition and Scheduling System Design," *Carborundum Corporation, Amherst, NY*; July 2000 – May 2001.
14. "Production Operational Assessment," *Gaymar Industries, Orchard Park, NY*; July 2000.
15. "Recommendations for Operational and Facility Design Improvements," *National Wire and Metal, Jamestown, NY*; May 2000.

16. "Operational Analysis and Facility Redesign Studies," *Republic Drug Company, Buffalo, NY*; May – July 1999.
17. "Operational Analysis and Facility Design Studies," *Imaging and Sensing Technology, Horseheads, NY*; October – December 1998.
18. "Operational Assessment: Facility Layout and Process Flow," *Milward Alloys Inc., Lockport, NY*; August – September 1998.
19. "Time Studies, Process Flow and Inventory Control," *McKenica Corp., Buffalo, NY*; July – August 1998.
20. "Facility Design and Automation," *A Lunt Design Inc., Orchard Park, NY*; April 1998.
21. "Facility Design Simulation Studies," *Graphic Controls Corp., Buffalo, NY*, February 1998.
22. "Facility Layout for High-bay Assembly and Sheet-Metal Areas," *Gemcor Inc., West Seneca, NY*, August 1997.
23. "Pinpoint Enhancement Product Development," *Integral Information Systems, Amherst, NY*, July 1997 - April 1998.
24. "Layout and Productivity Improvements at AVX Corporation," *AVX Corp., Myrtle Beach, SC*, June 1997.
25. "Layout Critique at Smith McDonald Corp," *Smith McDonald Corp., Cheektowaga, NY* June 1997.
26. "Briquetting Productivity and Automation Enhancement," *Manitoba Corp., Lancaster, NY*, December 1996.
27. "Facility Layout under Cyclical Demand," *Gemcor Inc., Buffalo, NY*, June 1996.
28. "Assessment of Layout Design for Praxair's New Turbine Assembly Facility," *Praxair, Inc., Tonawanda, NY*; co-consultant L. Lin, October 1995.
29. "Tool Room Layout Assessment at American Axle," *American Axle and Manufacturing, Tonawanda, NY*; co-consultants R. Batta and L. Lin, August 1994.
30. "Preliminary Facility Assessment at Buffalo Weaving and Belting," *Buffalo Weaving and Belting, Buffalo, NY*, July 1994.
31. "Operational Assessment at Premier Image," *Premier Image, Buffalo, NY*, March 1994.
32. "Plant Layout at R.D. Murray," *R.D. Murray Fire Apparatus, Hamburg, NY*, January 1994.
33. "Operation Scheduling and Worker Assignment in a Coat Assembly Line," *Maryland Clothing Co. Baltimore, MD*, and University of MD's Technology Extension Service (TES), Nov. 1992.
34. "Scheduling in a Mail Facility for Improved Performance," *Westinghouse (MSTC), Baltimore, MD*, September 1991.
35. "Group Technology Based Layout for a particular Mail Facility," *Westinghouse (MSTC), Baltimore, MD*, May 1991.

18. OTHER SERVICE ACTIVITIES

"Comments on Material Handling, Flow, Layout and Automation," American Coasters, Sanborn, NY November 2001.

"Strategic Comments on Layout," Sealing Devices., Cheektowaga, NY September 2000.

Hosted one undergraduate student (Ntare Karytani) in summer of 1997 for NSF-SUNY Alliance for Minority Program (AMP).

"Layout Critique at Smith McDonald Corp," Smith McDonald Corp., Cheektowaga, NY June 1997.

Invited Panelist at International Students as Job Applicants' Workshop, April 18, 1997.

Volunteered at SME booth at Walden Galleria during Engineer's Week, February 1997.

Hosted one high-school student through BEAM in the summer of 1995.

19. HONORS AND AWARDS

1. Fellow of IIE, the Institute of Industrial Engineers (2010). In recognition of outstanding leadership in the profession, and significant and recognized contributions to Industrial Engineering.

2. Sustained Achievement Award (2009). In Recognition of Outstanding Achievements in Scholarly Activity, University at Buffalo.

3. Promising Inventor Award, SUNY/RF (2004). Awarded to 97 faculty across SUNY for submitting invention disclosures.

4. Business First of Buffalo's 40 under 40 award (2004).

5. International Who's Who of Professionals (2004).

6. Who's Who in America (2002).

7. IIE's Outstanding Young Industrial Engineer Award in Academia (1999).

8. SME's Milton C. Shaw Outstanding Young Manufacturing Engineer Award (1999).

9. Invited participant (one of 78 young engineers between ages of 30-45 nationwide) to National Academy of Engineering's Fifth Annual Symposium on Frontiers of Engineering (1999).

10. National Science Foundation's CAREER Award (1996).

11. University at Buffalo, Riefler Award (1995, 1997).

12. University of Maryland, Systems Research Center's Outstanding Systems Engineering Graduate Student Award (1991).

13. University of Maryland, Systems Research Center Graduate Fellowship (1989, 1990, 1991).

14. University of Maryland, Graduate School Fellowship (1989).

15. University of Roorkee Merit Prize for overall first rank in Mechanical Engineering (1987).

16. University of Roorkee Scholarship for all four years of undergraduate study (1983-87).

17. Silver medal for obtaining highest marks in Machine Design group in B.E. (1987).

18. Silver medal for obtaining highest marks in Applied Thermo-Science group in B.E. (1987).