

May 2019

**MORRIS A. COHEN**

Panasonic Professor of Manufacturing and Logistics  
Operations, Information and Decisions Department  
The Wharton School, University of Pennsylvania  
Philadelphia, PA 19104  
(215) 898-6431 (office)  
COHEN@WHARTON.UPENN.EDU (E-mail)

Web Page: <http://opim.wharton.upenn.edu/~cohen/>

**PERSONAL:** Age 71, Married - 3 children

**DEGREES:** B.A. Sc., Engineering Science, University of Toronto, 1970  
M. Sc., Industrial Engineering and Management Sciences,  
Northwestern University, 1971  
Ph.D., Operations Research, Northwestern University, 1974  
M.A. (Hon.), University of Pennsylvania, 1980

**PROFESSIONAL EXPERIENCE**

Founder and CEO, D3 Analytics, 2017 -  
Visiting Professor, IIMB, Bangalore India, 2013  
Visiting Professor, Shanghai Institute of Foreign Trade, China, 2013  
Visiting Professor, Technion - Israel Institute of Technology, Faculty of Industrial Engineering  
and Management, Israel 2013  
Visiting Professor, Kobe University, Japan, 2013  
Panasonic Professor of Manufacturing and Logistics, Operations, Information and Decisions  
Department,<sup>1</sup> Wharton School, University of Pennsylvania, 1985-  
Co-Director, Fishman-Davidson Center for Service and Operations Management, 1995-  
Chairman, MCA Solutions Inc., 2002 - 2012  
Chief Executive Officer, MCA Solutions LLC, 2000 - 2002  
Secondary Appointment as Professor of Electrical and Systems Engineering in the School of

---

<sup>1</sup> Department was named the Decision Sciences Department (1974 – 1993), the  
Operations, Information Management Department (1993 -2016) and the Operations, Information  
and Decisions Department (2016 -)

Engineering and Applied Science, University of Pennsylvania, 1994-2009  
Board of Directors, Vlasic Foods International Inc., 1998-2001  
Visiting Professor, New Interdisciplinary University of Law, Management and  
Technology, Israel, 1995-1996  
Visiting Scholar, Massachusetts Institute of Technology, 1997  
Chairman, Operations and Information Management Department, Wharton School,  
University of Pennsylvania, 1992-1995  
Co-Director, Center for Manufacturing and Logistics Research, Wharton School,  
University of Pennsylvania, 1991-1995  
Sloan Visiting Professor of Decision Sciences, Graduate School of Business and Department of  
Industrial Engineering, Stanford University, 1988-1989  
Coordinator Operations Research Program, Wharton School, University of Pennsylvania,  
1984-1985  
Associate Professor, Department of Decision Sciences, Wharton School, University of  
Pennsylvania, 1980-1985  
Visiting Professor, Department of Industrial Management Engineering, Shanghai Jiao Tong  
University, 1982  
Assistant Professor, Department of Decision Sciences, Wharton School, University of  
Pennsylvania, 1974-1980  
Senior Fellow, Leonard Davis Institute of Health Economics, Wharton School, University  
of Pennsylvania, 1978-1993  
Policy Analyst, Planning Branch, Treasury Board Secretariat, Government of Canada, 1971-1972  
Systems Analyst, Institute for Quantitative Analysis of Social and Economic Policy,  
University of Toronto, 1970  
Bio-Medical Engineer, Department of Bio-Medical Engineering and Biophysics, Toronto  
General Hospital, 1968-1969

## **PRIZES AND AWARDS**

2017 Advisory Board, Center for Transportation & Logistics, Massachusetts Institute of  
Technology

2015 The Wharton School, Teaching Commitment and Curricular Innovation Award

2013 INFORMS Fellow - Institute for Operations Research and the Management Sciences

2013 Plenary speaker, International Symposium, Japanese Operations Management and Strategy  
Association

2008 Plenary speaker, German Operations Research Society

2007 Tibbets Award (National Science Foundation –SBIR)

2007 Production and Operations Management Society (POMS) Inaugural International Distinguished Lecturer

2004 MSOM Senior Fellow, Manufacturing and Service Operations Management Society

2001 Institute of Industrial Engineers Award for best paper published in *IIE Transactions* in 1999

1998 Fellow, International Academy of Management

1991 Stan J. Hardy Award for the best paper published in Operations Management in 1990 Decision Sciences Institute

1989 Lauder Institute Prize for Advances in the Theory and Practice of International Management Science (best submitted paper)

1989 Edelman Prize for Best Practice in Management Science (runner-up)

## **CONSULTING ACTIVITIES**

Applied Material 2018-

- Develop decision support system based on machine learning and big data concepts for planning and control of service parts inventory management

Atlas- Copco 2017

- Develop global supply chain strategy for after-sales service support for industrial and mining equipment manufacturer

EI Al 2013-2014

- Evaluate current after-sales service support strategies for aircraft maintenance

PTC 2012-2014

- Develop strategies to integrate product design, service lifecycle management support systems, smart products and servicization

Servigistics 2012

- Senior consultant to provide strategic direction for product development

Sikorsky 2012

- Supply Chain management in the Aerospace and Defense industry – challenges and opportunities

Samsung 2010-2011

- KPIs for Measuring Service Quality

Domino's Pizza 2010

- School Lunch Program Supply Chain analysis

US Postal Service 2009

- Forever Stamp supply chain analysis

SAP 2007

Intermec 2006  
 Oracle 2006  
 Boeing 2006  
 MCA Solutions Inc. – 2002 – 2012  
 (Supported implementations include Apple, Baker Hughes, Bombardier, Cymer, Dassault, Volkswagen, US Army, Cisco, KLA Tencor, DHL, Lockheed Martin, Rockwell Collins, US Navy, Boeing Corporation, Applied Material, Varian Medical)  
 KLA Tencor – 2001  
 Applied Materials – 1999, 2000, 2001, 2017  
 Electronics Components Case – Expert Witness on Material Management, 2000  
 Motorola Class Action – Expert Witness on Supply Chain Volatility, 2000  
 Defense Logistics Agency – 1999  
 Merck & Company, Inc. – 1993, 1998  
     - Distribution Strategy  
     - Clinical Trials Supply Chain  
 Digital Equipment Corporation (Compaq) – 1998  
 Intel Corporation – 1997 - 2000  
 TIP (Transport International Pool), GE Capital – 1997  
 US Navy ICP - 1996 - 1998  
     - Supplier-Distributor Relationship for Military Service Parts Logistics  
 Saturn Corporation - 1995 - 1999  
     - Long-Range Distribution Strategy  
     - Market Area Service Parts Logistics Strategy  
 Teradyne Corporation -1995 - 1999  
     - Service Parts Logistics – 1996  
 Campbell Soup Company -1995  
     - New Product Development  
     - Global Development Protocol  
 Campbell Soup Company - 1988, 1990, 1995, 1996  
     - Manufacturing Strategy, Manufacturing/Marketing Interface, European Supply Chain  
 International Business Machines -1982, 1983, 1984, 1993-1996, 1998  
     - Third Party Logistics Provider Assessment  
     - Service Part Inventory System Development  
     - Spare Logistics Benchmark Project (Phases 1 and 2)  
 Gemini Consulting -1993  
     - Faculty Associate; Logistics and Distribution Strategy  
 MBNA America Bank -1993, 1994  
     - Inventory Control System for Plastic Cards  
 Asbestos Industrial Class Action - 1993  
     - Expert Witness on Product Development  
 Andersen Consulting B 1989-1992  
     - Distribution, Logistics and Inventory Management  
 Airline Industry Class Action - 1991

- Expert Witness for Plaintiff Counsel
- Trinova Corporation - 1987-1990
  - Manufacturing Strategy, Executive Education
- Booz-Allen and Hamilton - 1982-1988, 1993
  - Manufacturing Strategy Support System Development
  - Distribution Strategy
- Triad Corporation – 1989
  - Inventory Management Systems
- Apple Computer Company -1987, 1988
  - Global Manufacturing/Distribution Policy
- General Motors Corporation -1984-1987
  - Parts Distribution System Evaluation and Strategy Development
- Franklin Computer Corporation - 1982
  - Manufacturing System Evaluation
- Reliance Steel Products - 1982
  - Expert Witness Consultation for Producer/Supplier Litigation Case
- North American Philips Consumer Electronics - 1981
  - Production Scheduling Analysis
- Canada Mortgage and Housing Corporation - 1980
  - Simulation Models for Housing Policy Analysis
- Magnavox Consumer Electronic Company - 1980
  - Production Planning System Evaluation of Television Manufacturing Plant
  - MRP Software Evaluation
- Rush - Presbyterian St. Luke Blood Center - 1980
  - Development of Microcomputer Based Blood Inventory Control System
- Central Jersey Health Planning Council - 1979
  - Regional Health System Resource Planning Methods
- Coats and Clark, Inc. - 1978
  - Inventory and Logistics Strategy Analysis for Small Wares Manufacturers, Distributors and Retailers
- Philadelphia College of Physicians and the National Library of Medicine - 1975
  - Analysis of the Regional Medical Library System

## **COURSES TAUGHT**

- DS 20      Operations Analysis Techniques: Introduction to quantitative methods at the undergraduate level-linear programming, integer programming, decision analysis, dynamic programming.
- DS 21      Operations Analysis in Production Systems: Undergraduate course dealing with inventory, production, distribution, aggregate planning, and facility planning.
- OIDD 220    Introduction to Operations Management: This undergraduate course introduces

concepts of operations management and their application to solve business problems in order to enhance a firm's competitive advantage or to improve the performance of an organization. The course examines both the theoretical foundations of operations management and how its principles and methods are employed in practice to support both tactical and strategic decision making. Real world examples are drawn from the automobile industry, fashion retailers, health care services, semiconductor, and high-tech industries, among others. These examples illustrate how companies use operations management principles to gain competitive advantage.

- OIDD 224 Analytics for Service Operations: Undergraduate elective that focuses on the design, management and control of service operations. Topics include capacity planning, revenue management, after-sales service, service product design, service quality management and service strategy. Half semester version covers lectures and full semester version includes an extensive field project to evaluate a service process. Versions of this course have been taught at the Technion, Israel and Kobe University, Japan.
- BA 369 Manufacturing Technology/Facility Strategy (Stanford): An overview of technology planning and facility/capacity planning. Emphasis is given to CIM and location models.
- OIDD 380 Operations Strategy Practicum: an undergraduate experience-based elective that focuses on global supply chain strategy at various locations (Israel). It includes site/plant/DC tours and visits with senior managers in leading corporations and at startups. The objective is to discuss and evaluate current company operations, trends and supply chain strategies through direct observation and interaction.
- OPIM 508 Operations Analysis in Health Systems: An advanced study project course for MBAs, clinical scholars and doctoral students on systems analysis and OR/MS methodology as applied to the health care system.
- OPIM 615 Managing the Productive Core of the Firm: Operations Strategy: This is a WEMBA elective course on Operations Management. It emphasizes supply chain management and strategic planning and provides tools for the matching of demand and managing risk in supply chains.
- OPIM 631 Operations Management: Quality and Productivity: This is the first part of the core course on Operations Management. It emphasizes processes analysis, performance measurement and improvement. It introduces queuing and process mapping tools.
- OPIM 632 Operations Management: Supply Chain Management: This is the second part of the core course on Operations Management. It emphasizes supply chain

management and strategic planning and provides tools for the matching of demand and supply in various environments.

- OPIM 650 Management Decision Analysis: A quantitative methods course at the MBA level oriented around case studies involving resource allocation, decision analysis, simulation and planning languages.
- OPIM 655 Operations Management: Planning and Strategy: A strategy oriented survey of operations management. Topics include process analysis, inventory control, detailed and project scheduling, aggregate planning, capacity management and facility planning, logistics and distribution system design, technology planning and operations policy.
- OPIM 656 Operations Management Analysis & Control: A comprehensive introduction to the fundamental decisions and tradeoffs associated with the control of a firm's operations function. The topics covered include - inventory management, aggregate production planning, master scheduling, materials requirement planning and operations scheduling.
- OPIM 657 Operations Technology: Overview of the developments and principles of Technology Management in manufacturing and distribution from a managerial perspective.
- OPIM 658 Service Operations Management: Elective that focuses on the design, management and control of service operations. Topics include capacity planning, yield management, after-sales service, service product design and service strategy. Extensive coverage of underlying queuing models of service systems and a field project is included.
- OPIM 659 Design, Manufacturing & Marketing Integration: A project course in which students design and build prototype of new product and consider cross-functional management issues.
- OPIM 659 Applied Dynamic Stochastic Systems: A doctoral level course on the theory and applications of dynamic programming, Markov decision processes and stochastic control (also listed as OR 606).
- OIDD 680 Operations Strategy Practicum: an MBA experience-based elective that focuses on global supply chain strategy at various locations (US, Mexico, Germany, Japan). It includes site/plant/DC tours and visits with senior managers in leading corporations. The objective is to discuss and evaluate current company operations, trends and supply chain strategies through direct observation and interaction.
- OPIM 698 Value Networks: An MBA elective that explores software and strategies for

integration, optimization and coordination in IT-enabled value chains.

- BA 807      Quantitative Methods II: An MBA core course which introduces the basic concepts and methods of Operations Research/Management Science.
- OPIM 890    Global Supply Chain Management in Japan: An MBA global modular course, cross listed as MGMT 890. The course focuses on global supply chains operated by Japanese and foreign multinationals operating in Japan. It is a field based, on-site course that includes extensive interactions with senior executives and site/plant visits with leading corporations to discuss their current global supply chain strategies. In 2013 it was offered in conjunction with the Wharton Asian Alumni conference in Tokyo.
- DS 920      Mathematical Programming: A doctoral level course on linear, integer and dynamic programming.
- DS 930      Stochastic Processes: A doctoral level introduction to stochastic processes and their applications.
- DS 940      Operations Management Systems: A doctoral level course on the theory and principles of operations management-Industry and firm level analysis, survey of models, empirical studies.
- DS 942      Distribution Systems: A doctoral level seminar on multi-echelon inventory, logistics and distribution planning.
- DS 989      Operations Management Workshop: A Ph.D. seminar on recent developments in the theory and practice of the field.

#### **UNIVERSITY ACTIVITIES:**

Committee on Academic Freedom and Responsibility, (Alternate), 2009-10  
Chair, Dean's Search Committee, School of Applied Science and Engineering, 1998-99.  
Academic Misconduct Committee, 1991  
Computer Grants Review Committee, 1985  
Planning Committee, Lauder Institute of International Management, 1983 - 1984.  
Dean's representative on Committee on Undergraduate Admissions and Financial Aid, 1980

#### **WHARTON SCHOOL ACTIVITIES**



Chair, Finance Department 5-year Review Committee 2016-2018  
 Curriculum Innovation and Review Committee 2015-2016  
 Advisory Committee on Global Initiatives 2014- 2015  
 MBA & Undergraduate Curriculum Committee, 2011-2012  
 Chair, Finance Institutions Center Quinquennial Review Committee, 2011-2012.  
 Personnel Committee, 2007-8, Chair, 2008-9  
 Wharton West 5-year Review Committee 2006  
 Chair, Mack Center 5-year Review Committee 2006  
 MBA Executive Committee 2004 - 2005  
 Chair, MBA Curriculum Committee, 2002-2003  
 MBA Curriculum Committee, 2001-2002  
 Executive Education Committee, 2000 - 2001  
 Personnel Committee, 1998 - 2000  
 Chair, Health Care Systems Department Quinquennial Review Committee, 1998  
 MBA Curriculum Committee, 1995  
 Organized Impact Conference, "United States-Japanese Manufacturing Alliances," 1993  
 Chairman, Review & Assessment Committee (New MBA Curriculum), 1991 - 1993  
 Doctoral Program Policy Committee, 1991  
 Personnel Committee, 1990  
 MBA Recruiting Committee, 1990  
 Lifelong and Continuing Education Committee, 1987  
 Director for Management; Management of Information Systems  
 Program, 1985 - 1988 (a \$2 million grant from IBM)  
 Graduate Standards Committee 1983, 1984, 1985  
 Executive Committee; Operations Research Program, 1983  
 Wharton Executive MBA (WEMBA) Committee, 1983  
 Policy Committee; Doctoral Program 1981, 1984  
 Undergraduate Admissions Committee, 1980  
 Chairman, Prizes and Awards Committee, 1979 - 1981  
 Lippincott Library Committee, 1976 - 1979  
 MBA Curriculum Committee, 1975 - 1976

## **DEPARTMENT ACTIVITIES**

Chair Personnel Committees for promotion and hiring of senior faculty 2015, 2016, 2017  
 Doctoral Admissions Committee 2014-2015  
 Chair, Personnel Committee for renewal of a Practice Professor 2014  
 Undergraduate Coordinator 2011-2012  
 Personnel Committees (Chair and Member) 2010-2011  
 Member, Recruiting Committee 2009 – 2010  
 MBA Coordinator, 2001-2003, 2004-2005  
 Member, Chair Search Committee, 2001, 2009

Member, Recruiting Committee, 1999 - 2000  
MBA Coordinator, 1995  
Department Chairman, 1992 - 1995  
Coordinator, Ph.D. Program, 1980 - 1982 and 1991 - 1992  
Faculty Recruiting Committee 1986 - 1988  
Computer Committee, 1987  
Member, Curriculum Policy Committee, 1978  
Chairman, Undergraduate Curriculum Committee, 1977 - 1978  
Chairman, MBA Curriculum Committee, 1975 - 1976

#### **Ph.D. STUDENT SUPERVISION**

1. Fei Gao, "Performance, Reliability or Time-to-Market", Dissertation completed, 2017
2. Shiliang Cui, "Global Supply Chain Sourcing", Dissertation completed, 2014
3. Jose Guajardo, "Empirical Analysis of Performance Based Incentives in Supply Chains, Warranties and Service Quality", Dissertation completed 2012.
4. Sang-Hyun, Kim, "Performance Based Logistics: Incentives, Pricing and Supply Chain Policies", completed 2009. Awarded: 2006 International Society of Logistics Engineers & the Logistics Education Foundation Doctoral Dissertation Proposal Award, the 2006 Seth Bonder Scholarship for Applied Operations Research in Military Applications, Honorable Mention, MSOM Student Paper Competition, 2006 and Production and Operations Management Society Student Paper Competition Finalist, Dissertation completed 2008.
5. Justin Ren, "Sharing Forecast Information in a Supply Chain" Dissertation completed 2003.
6. Sergei Savin, "Strategic Analysis of Lease/Rental of Capital Equipment." Dissertation completed 2001.
7. Vinayak Deshpande, "Inter-Agency Coordination Strategy in High Technology Logistics Support." Dissertation completed 2000.
8. Shuren Zhang, "Benchmarking of Service Parts Supply Chain."
9. Yunzeng Wang, "Repairable Multi-Echelon Inventory." Dissertation completed 1998.
10. Vipul Agrawal, "Planning Models for Multi-Level Distribution Systems." Dissertation completed 1995.
11. Narendra Agrawal, "Supplier-Producer Material Management Interface." Dissertation completed 1994.
12. Teck-Hua Ho, "Product Design: Manufacturing-Marketing Interface." Dissertation completed 1993.
13. Arnd Huchzermeier, "Global Manufacturing Strategy Planning Under Exchange Rate Uncertainty." Dissertation completed 1991.
14. Sangwon Moon, "Manufacturing Systems Facility Design." Dissertation completed 1988.
15. David Pyke, "Production - Distribution Systems." Dissertation completed 1987.
16. Ricardo Ernst, "Multi-Owner Distribution Systems." Dissertation completed 1987.
17. Manuel Baganha, "Multi-Echelon Inventory Systems." Dissertation completed 1987.

18. Arunahba Chatterjee, "Stochastic Models of Robot/Work Center Systems", Dissertation completed 1985
19. Hau Lee (Operations Research), "Multi-Institutional Services Utilization." Dissertation completed 1982.
20. Elliott Weiss (Operations Research), "A Semi-Markov Model for the Analysis of Capacity Tradeoffs in a Progressive Patient Care Hospital Facility." Dissertation completed 1980.

## RESEARCH GRANTS/FUNDING

- "Optimal Management of Repairables", El Al Airlines and the Technion Israel, \$20,000, 2013 – 2015.
- "Overseas Scholar Grant", \$40,000, Shanghai Institute of Foreign Trade and Government of Shanghai, 2012 -2013
- "Empirical Analysis of Performance Based Logistics", \$150,000, 2008-9, US Air Force (joint with University of Tennessee), 2011
- "Performance Based Logistics", \$125,000, 2005 – 2008 various grants from; Lockheed Martin Aerospace Company, Boeing Corporation, Rolls Royce Corporation, CACI, SAP, Thomas Group, Bell Helicopter
- "Digital Transformation", McKinsey and Company, \$100,000, 2002.
- "Global Manufacturing Logistics," National Science Foundation Integrative Graduate and Research Training Program (IGERT), \$169,200, 2001.
- "Distributed and Collaborative Supply Chain Integration via Electronic Markets" National Science Foundation #538194, \$115,000, 2001 – 2005.
- "Distributed and Collaborative Enterprise Decision Making in the Electronic Supply Chain," National Science Foundation #0075391, \$100,000, 2000 – 2001.
- "Semiconductor Equipment Supply Chain," Intel Corporation, Scaleable Enterprise Grant, \$60,000 - \$100,000, 1998.
- "Lean Air Initiative," MIT Center for Technology Research, 1997.
- "Supply Chain Strategy," US Navy/Defense Logistics Agency, 1996.
- Procter & Gamble, 1995.
- The Fishman-Davidson Center for Services and Operations Management, The Wharton School. Partnership of about ten companies, 1994.
- Harry Freeman, "SERVNET: Service Sector Network Project," 1995.
- "United States-Japanese Manufacturing Alliance," Impact Conference, Japan Foundation Center for Global Partnership, 1993.
- "Redistribution Policy in the Paper and Plastics Industry," Redistributors of America Inc., 1991.
- "Global Manufacturing Strategy Analysis," National Science Foundation, #DDM 91-14568, 1991.
- "Modeling Issues in International Manufacturing Systems," Stanford Institute of Manufacturing Automation, 1988 - 1989.
- "Global Manufacturing and Distribution Network Analysis," National Science Foundation #SES-8812570, 1988 - 1989.

- “Strategic Analysis of Integrated Production Distribution Systems: Models and Methods,” National Science Foundation #DMC86-09840, 1986 -1989.
- “Distribution Logistics Systems: Models and Methods,” National Science Foundation #ECS84-06695, 1984, 1985.
- “Manufacturing Planning Support System,” Booz-Allen and Hamilton, 1982, 1983.
- “Regional Allocation and Organization,” National Health Care Management Center, The Leonard Davis Institute of Health Economics, University of Pennsylvania, 1977, 1978, 1981.
- “An Analysis of Regional Health Planning Methodologies,” National Center for Health Services Research, HEW HS-03543, 1979.

## **RESEARCH INTERESTS**

- Machine Learning and Big Data Applications to Supply Chain Planning
- Service Supply Chain Logistics – Strategy and Resource Planning Systems
- Service-Product Strategy – Design, Pricing and Incentives
- Manufacturing Sourcing and Global Supply Chain Strategy
- Servicization – KPIs and Service Quality Metrics
- Performance Based Incentives in Supply Chain Management
- Buyer-Supplier Coordination in Capital Intensive Industries
- E-commerce & Value Chain Transformation
- Benchmarking of Manufacturing/Logistics Systems
- Manufacturing/Marketing Interfaces

## **INVITED AND CONTRIBUTED LECTURES (since 1995)**

“ Optimization for the Delivery of Service Differentiation Through Operating Segments: Design and Control Challenges”, MIT, John Hopkins, Euro 2019 – Dublin, 2019

“Industry 4.0”, Supply Chain Thought Leaders Conference, Porto, Portugal, 2018.

“A Framework for Delivering Service Differentiation Through Operating Segments: Research Opportunities and Implementation Challenges”, NY Stern, INFORMS International Conference on Service Science, 2018.

“Performance, Reliability or Time-to-Market?” POMS Israel 2017, Georgetown University 2018.

“Global Supply Chain Sourcing Strategy: Analysis Based on Benchmark Surveys and a Life Cycle Model”, University of Chile, Penn State, University of Michigan, University of Toronto, MIT, POMS, MSOM, 2015 – 2017.

"Manufacturing Sourcing in a Global Supply Chain: A Life Cycle Analysis", EURO 2015, Glasgow.

"Global Operations Sourcing Strategy: A Chinese Perspective", MSOM, Toronto, June 2015

"Flexible Stocking and Repair Sourcing Policies in Multi-Echelon Service Support Environments", MSOM INSEAD July 2013, POMS 2014.

"Global Supply Chain Strategy: A Framework for Evaluating Tradeoffs, Risk and the Impact of Outsourcing, Re-shoring and Near-Shoring", joint Wharton, MIT Forum March 2013, joint Wharton, Jiao Tong, MIT Forum June 2013 in Shanghai, joint Wharton, IIMB, MIT Forum November 2013 in Bangalore, joint Wharton, Stanford, MIT Forum March 2014 in Stanford

"Global Supply Chain Strategy in China: The Impact of Outsourcing, Re-shoring and Near-Shoring", Shanghai Institute of Foreign Trade 2012

"Product-Service Systems aka Servicization: Are Products Obsolete? , Shanghai Institute of Foreign Trade 2012 and Faculty of Industrial Engineering and Management, Technion & Recanati School of Business, Tel Aviv University, 2013 and Masters Lecture at 2013 Wharton Global Forum, Tokyo

"Service Competition and Product Quality in the U.S. Automobile Industry", 2012 MSOM Conference, New York, Berkeley Marketing Department 2012, University of North Carolina, 2013.

"Research Opportunities at the Marketing-Operations Interface", Panel Moderator Marketing Science Conference, Boston 2012 and Panelist 2012 MSOM Conference.

"Product Performance Based Business Models: A Service Based Perspective", HICSS – 45, Maui, 2012.

Servicization – aka Product-Service Systems: Implications for Manufacturing Industries, Supply Chain Thought Leaders Roundtable, Beijing, 2011.

Chair, Fishman Davidson Center Service Supply Chain Thought Leaders Forum, "Strategies to Meet the Needs of the New Service Economy", Wharton West, 2011

"Performance Based Logistics for Service Supply Chain Management", Wilfred Laurier University, 2011

"Does Performance Based Logistics for Product Support Work? Observations from Research and Practice", Wharton Aerospace Conference, 2011

“Impact of Performance Based Contracting on Product Reliability: An Empirical Analysis”. MSOM Conference, MIT, Boston MA, 2009, Utah Winter Operations Conference, 2010, MSOM Conference, Technion, Haifa Israel, 2011, MSOM Conference, University of Michigan.

“Servicization: Managing Mission Critical Products as Services that Generate Customer Value”, Supply Chain Roundtable, Costa Rica, 2009.

“Performance Based Logistics for Service Supply Chain Management”, Canadian Operations Research Society, Toronto, 2009.

“Operations Research at the Crossroads: Opportunities and Challenges to Support the Global Enterprise”, Plenary Session, Gesellschaft fur Operations Research (German Operations Research Society), Augsburg, Germany, 2008.

“PBL Strategy: A Framework for Success”, Performance Based Logistics, IDGA, Alexandria VA, 2008.

“Service Supply Chain Customer Value Delivery: Optimization, Performance Incentives and Implementation”, Society of Logistics Engineers, Dayton Chapter and Air Force Institute of Technology, Wright Patterson Air Force Base, 2008.

“Customer Value Delivery in the Service Supply Chain”, Informs Practice Meeting, Vancouver, 2007 and Keynote Speaker POMS International meeting, Rio de Janeiro, 2007 and POMS conference La Jolla 2008.

“Service Supply Chain Performance Based Strategies for Customer Value Delivery: The Role of Incentives – Lessons Learned from the US Aerospace & Defense Industries”, Inter-Disciplinary Center, Israel, 2007.

“Service Supply Chain Customer Value Delivery: Optimization, Performance Contracting and Implementation”, Columbia University, IEOR-DRO seminar, 2006, University of Toronto, 2006, Naval Post Graduate School, 2007.

“Performance Based Logistics: Incentive Contracting in Service Support Supply Chains” Utah Operations Management Conference, 2006, POMS 2006, MSOM 2006

“Supply Chain Performance Based Strategies for Customer Value Delivery“, Operations Management in Services Conference, POMS/Columbia University, Manufacturing and Service Operations Senior Fellow lecture- Informs, Denver, Boeing Strategy Group, Novellus, 2004

“Supply Chain Performance Based Strategies for Customer Value Delivery”, Washington University – Meir Rosenblatt Memorial Lecture, 2004.

“Threshold Inventory Rationing Policy for Multiple Service Differentiated Demand Classes”, MSOM, Eindhoven, 2004.

“After-Sales Service Supply Chain Strategy: Historical Antecedents, Current Trends and Opportunities for Differentiation”, ZLOG 2004, International Logistics Summit, Zaragoza, Spain, 2004.

“Global Service Supply Chain Management: Balancing Flexibility and Efficiency”, Interlog Winter Conference, Miami, 2004.

“Next Generation Service Supply Chain Planning: Optimization and Integration in a Commercial Off-the-Shelf Software System”, Defense Logistics Conference, Washington D.C., 2003.

“After-Sales Service Supply Chain Management: Strategies, Opportunities and New Directions”, Keynote Speaker, After Sales Advanced Planning Conference, Polytechnic of Milan, 2003.

“Optimal After-Sales Service Supply Chain Planning: Strategy, Metrics and Models”, Informs, Atlanta, 2003

“Optimal After-Sales Service Supply Chain Planning: Historical Antecedents, Current Trends and Research Opportunities”, UCLA, NYU, 2003.

“The Impact of Forecast Information Sharing on Supplier Delivery Performance: Lessons Learned from the Semiconductor Business”, Johnson School of Business, Cornell University, 2003.

“Optimized After-Sales Service Supply Chain Planning & Control”, Production and Operations Management Society (POMS) meeting, Savannah, 2003.

"The Dynamics of Supplier Delivery Performance with Order Cancellation", Production and Operations Management Society (POMS) meeting, Savannah, 2003.

“Founding a Service Supply Chain Enterprise”, Supply Chain Thought Leaders Conference, Lake Como, Italy, 2002.

“Supply Chain Research in the Age of eBusiness”, Keynote Speaker, National Science Foundation Design and Research Conference, Vancouver, 2000.

“Electronic Supply Chain Strategies for the Millennium,” Industrial Systems Conference, Santiago, Chile, 1999.

“Supply Chain Management: A Framework for Research,” NSF Workshop on Scaleable Enterprise Systems, 1999.

“Three Dimensional Concurrent Engineering,” INFORMS, Cincinnati, 1999

“Rationing Policies for Multiple Demand Classes in a Military Supply Chain,” INFORMS, Seattle, 1998.

“Service Capacity Management Decisions for Rentals and Leasing, INFORMS, Seattle, 1998.

“A Two-Echelon Service Parts Logistics System for Repairables with Two Classes of Customer Service,” INFORMS, Seattle, 1998.

“Supply Chain Stability: Conditions for the Propagation of the Bullwhip Effect,” INFORMS, Montreal, 1998.

“Intra Organizational Supply Chain Coordination for Service Parts Logistics Systems: A Military Systems Field Study,” INFORMS, Montreal, 1998.

“Capital Investment Decisions in the Management of Rental Equipment,” INFORMS, Montreal, 1998.

“New Product Development Process Management: Empirical & Model Based Perspectives,” Harvard University, 1994; MIT, 1997.

“Inventories and Supply Chain Stabilization: Conditions for Variance Reduction,” MSOM Conference, Dartmouth College, 1996.

“After Sales Service Logistics Systems: The Saturn Strategy,” Eindhoven University, Lean Air Initiative Conference, 1997; University of Montreal, University of Michigan, 1997; MIT, University of Cincinnati, University of California, Los Angeles, Lehigh University, Jao Tong University, Taiwan, 1996; and New York University, 1995.

## **EXECUTIVE EDUCATION**

Wharton Hero MotoCorp Ltd. Program 2016

Inter-Disciplinary Center (IDC) – Executive MBA Course 2014

Sikorsky Corporation, “Supply Chain Management in the Aerospace and Defense Industry: Issues, Challenges and Opportunities”, 2012.



Wharton Rongsheng and Glorious Global Leaders Program 2011

Wharton Samsung Program 2010

Inter-Disciplinary Center (IDC) – Mellanox Program 2010

Wharton American Wholesale Marketers Association, 2008

Wharton Global Supply Chain Program, 2007

Oracle Corporation, 2006

Intermec Corporation, 2006

Wharton IDC Program, 2004, 2005

Wharton West Executive MBA, 2004

Supply Chain Management - Thought Leadership (MIT), 2003

Solving the CRM Challenge (Wharton), 2002

Textron Global Leadership Forum (Wharton), 2002

Wharton Forum on e-Business, 2002

Wharton Electronic Commerce Strategy Program, 2000, 2001

US Navy Supply Chain Program, 1999, 2000

Wharton Supply Chain and Jiangsu Programs, 1998

Systems Management Group, 1997

Wharton Corporate Programs

- Samsung, 1995, 1996
- Mallinckrodt, 1996
- European Executive Program, 1996

Wharton CEO Circle, Taipei, 1996.

Wharton Executive Development Program, 1993 - 1996

Wharton International Forum (Core Faculty) (Philadelphia, Bruges, Kyoto) 1990 - 1992.

Wharton Advanced Management Program “Manufacturing Strategy,” 1990 - 1992.

Wharton Executive Education Seminar “Doing Business in Uncertain Times,” 1991.

Campbell Soup Company, “Overview of Competitive Manufacturing Strategies,” 1989.

Trinova Corporation, “Competing Through Integrated Manufacturing,” 1987 - 1989.

Tel Aviv University and Tadiran Corporation, “Manufacturing Strategy,” 1987.

General Motors Corporation, “Manufacturing Strategy,” 1986.

Society of Manufacturing Engineers, “Manufacturing Strategy for Competitive Advantage,” 1986, 1987.

Tel Aviv University and Israel Aircraft Industries, “Multi-Level Inventory Systems,” 1986.

HARSCO Corporation, President’s Meeting: “Technology Management,” 1985.

Wharton Seminar for Business Writers, “Just-In-Time Inventory Control: The Japanese Method,” 1984.

Operations Research Society of America, “Recent Advances in Operations Management,” Practitioner Workshop Series, San Francisco, 1984.

Institute for International Research, “Production Planning and Inventory Management,” Hong Kong, Singapore, 1981, Sidney, Melbourne, Hong Kong, Djakarta, 1983.

Wharton School Seminar, “Effective Production Planning and Inventory Management,” 1979 - 1982. Over 40 seminars in U.S., Canada, and England.

Penton Inc. Seminar, “Production Planning, Scheduling and Inventory Control,” University of Colorado, 1976, University of Minnesota, 1977, Canadian School of Management, 1979.

Free Library of Philadelphia - Coordinator and Speaker in Management Lecture Series, 1976.

## **PROFESSIONAL AFFILIATIONS AND ACTIVITIES**

Advisory Editorial Board, *The Journal of Japanese Operations Management and Strategy*, 2015 –

Department Editor (Services), *Manufacturing and Service Operations Management*, 2016 -

Co-Editor, Special Issue on “Innovations in Supply Chain Interfaces and Structure,”

***Manufacturing and Service Operations Management***, 2015-2016.  
 Editorial Board, ***Service Science***, 2014 – 2018  
 Engineering Advisory Committee, National Science Foundation, 1999 – 2001.  
 Senior Editor and Co-Editor, Special Issue on “Operations Marketing Interface,” ***Manufacturing and Service Operations Management***, 1996 - 2002  
 Editorial Advisory Board, ***Supply Chain Management Review***, 1996 - 2001  
 Co-Editor, Special Issue on “New Directions in Operations Management,” ***Operations Research***, Vol. 44, No. 1, Jan-Feb 1996.  
 Area Editor, Manufacturing, Operations and Scheduling, ***Operations Research***, 1990 - 1995.  
 Editorial Board, ***Journal of Operations Management***, 1989 -  
 Advisory Board, American Society for Quality Control, 1987 - 1988.  
 Editorial Board, ***Journal of Manufacturing and Operations Management***, 1989 - 1992.  
 Department Editor, Health Care & Service Sector Industries, ***Operations Research***, 1983 – 1988.  
 Associate Editor, ***Naval Research Logistics Quarterly***, 1984 - 1988.  
 Institute for Operations Research and Management Science (INFORMS), 1996 -  
 Operations Research Society of America (Member)  
     Chairman, Student Affairs Committee, 1982.  
     Publications Committee, 1981.  
     Student Affairs Committee, 1976 - 1979.  
 The Institute of Management Sciences (Member)  
     Executive Committee, Special Interest Group on Manufacturing  
 Session Chairman at joint ORSA-TIMS Meetings, Milwaukee, 1979; Toronto, 1981; San Francisco, 1984; Boston, 1985 (Cluster Chairman); Vancouver 1989, Boston, 1994 (Cluster Chairman).  
 Member of Text Specification Panel for Operations Management, American Assembly of Collegiate Schools of Business, 1983.  
 Society of Manufacturing Engineers  
 American Production and Inventory Control Society  
 International Society for Inventory Research  
 Association for Health Services Research  
 Operations Management Association  
 Production and Operations Management Association

## TEXTBOOK

***Manufacturing Automation*** (with U. Apte), McGraw-Hill Companies, Inc., 1997.

## RESEARCH PUBLICATIONS

1. “Designing the Right Global Supply Chain Network”, (with H. Lee), forthcoming, ***Manufacturing and Service Operations Management***, 2019.

2. “Joint Optimization of Spare Parts Inventory and Service Engineers Staffing with Full Backlogging”, (with I. Vliegen, S. Rahimi-Ghahroodi, A. Al Hanbali), forthcoming, **International Journal of Production Economics**, 2019.
3. “The Effect of Government Support on Green Product Design and Environmental Impact”, (with F. Gao and S. Cui), OIDD-Wharton Working Paper, 2018.
4. “Service Differentiation and Operating Segments: Research Opportunities and Implementation Challenges”, (with J. Guajardo), chapter in **Advances in Service Science - Proceedings of the 2018 INFORMS International Conference on Service Science**, edited by H. Yang and R. Qiu, 43-52, 2019.
5. “How Managers Think Strategically About Global Manufacturing Location and Reshoring Decisions”, (with Y. Chen, S. Cui, M. Dong, R. Ernst, A. Huchzermeier, P. Kouvelis, H. Lee, A Tsay S. Liu, H. Matsuo, D. Simchi-Levi, and M. Steuber), OIDD-Wharton Working Paper, 2018
6. “OM Forum - Benchmarking Global Production Sourcing Decisions: Where and Why Firms Off- and Reshore”, (with S. Cui, R. Ernst, A. Huchzermeier, P. Kouvelis, H. Lee, H. Matsuo, M. Steuber and A. Tsay), **Manufacturing and Service Operations Management**, volume 20(3):389-402, 2018.
7. “Performance, Reliability or Time-to-Market? Innovative Product Development and the Impact of Government Regulation”, (with F. Gao and S. Cui), OIDD-Wharton Working Paper, 2018.
8. “Joint Repair Sourcing and Stocking Policies for Repairables Using Elang-A and Elang-B Queueing Models”, (with S. Bitton and I. Cohen), forthcoming **IISE Transactions**, 2018.
9. "Manufacturing Sourcing in a Global Supply Chain: A Life Cycle Analysis", (with S. Cui), OIDD-Wharton Working Paper, 2016.
10. "On Sourcing and Stocking Policies in a Two-echelon, Multiple Location, Repairable Parts Supply Chain", (with I. Cohen and E. Landau), **Journal of the Operational Research Society**, vol. 68, 617-629,2017.
11. “Service Differentiation and Operating Segments: A Framework and Application to After-Sales Services”, (with J. Guajardo), **Manufacturing and Service Operations Management**, volume 20(3):440-454, 2018.
12. “Service Competition and Product Quality in the U.S. Automobile Industry”, (with J. Guajardo and S. Netessine), **Management Science**, Vol. 62, No. 7, July 2016.

13. “Joint Stocking and Sourcing Policy for Single Depot, Single Base, Two-Echelon Environments with Repairables: The Role of Flexibility”, (with I. Cohen), OPIM-Wharton Working Paper, under review, 2014.
14. “City Streets Parking Enforcement Inspection Decisions: The Chinese Postman's Perspective”, (with M. Dror and N. Summerfield), *European Journal of Operational Research*, Volume 24, 149-160, 2015.
15. “Product Performance Based Business Models: A Service Based Perspective”, *Proceedings HICCS-45*, Jan. 2012.
16. “Impact of Performance Based Contracting on Product Reliability: An Empirical Analysis”, (with J. Guajardo, S. Kim and S. Netessine), *Management Science*, Volume 58, No. 5, May 2012.
17. “Reliability or Inventory? Analysis of Product Support Contracts in the Defense Industry”, (with S. Kim and S. Netessine), chapter in *Information Exchange in Supply Chain Management*,” edited by Albert Ha and Chris Tang, Springer, 2015.
18. “Contracting for Infrequent Restoration and Recovery of Mission Critical Systems”, (with S. Kim, S. Netessine and S. Veeraraghavan), *Management Science*, Vol. 56, No. 9, September 2010.
19. “Performance Contracting in After-Sales Service Supply Chains”, (with S. Kim and S. Netessine), *Management Science*, Volume 53, No. 12, December, 2007.
20. “Operations Risk Management: Overview of Paul Kleindorfer’s Contributions”, (with H. Kunreuther), *POMS Journal*, Volume 16, No. 5, Sept. – Oct. 2007.
21. “Winning in the Aftermarket”, (with N. Agrawal, V. Agrawal), *Harvard Business Review*, May 2006.
22. “Achieving Breakthrough Service Delivery Through Dynamic Asset Deployment Strategies”, (with N. Agrawal, V. Agrawal), *Interfaces*, Vol. 36, No. 3, May-June 2006.
23. “Information Sharing in a Long-term Supply Chain Relationship: The Role of Customer Review Strategy” (with J. Ren, T. Ho and C. Terwiesch), *Operations Research*. Volume 58, No. 1, January-February, 2010
24. “An Empirical Analysis of Forecast Sharing in the Semiconductor Equipment Supply Chain”, (with C. Terwiesch, T. Ho and J. Ren), *Management Science*, Vol. 51, No. 2, 2005.
25. “Measuring Imputed Cost in the Semiconductor Equipment Supply Chain,” (with C. Terwiesch, T. Ho and J. Ren), *Management Science*, Volume 49, No.12, 2003.

26. "An Empirical Study of Service Differentiation for Weapon System Service Parts" (with V. Deshpande and K. Donohue). *Operations Research*, Volume 51, No. 4, 2003.
27. "Managing Supply Chains with Differentiated Service Requirements: Models and Applications" (with V. Deshpande and Y. Wang). Chapter in *The Practice of Supply Chain Management* (C. Billington, T. Harrison and H. Lee (Eds.)). Kluwer Academic Press, 2003.
28. "A Threshold Inventory Rationing Policy for Service Differentiated Demand Classes" (with V. Deshpande and K. Donohue), *Management Science*, Volume 49, No. 6, 2003.
29. "Incentive Compatible Pricing Mechanisms for Service Differentiated Supply Chains" (with V. Deshpande and K. Donohue), OPIM Department, The Wharton School, University of Pennsylvania, 2002.
30. "Capacity Management in Rental Businesses with Two Customer Bases" (with N. Gans, Z. Katalan, S. Savin), 2005, *Operations Research*, Vol. 53, pp.617-631.
31. "Differentiating Customer Service on the Basis of Delivery Lead-Times (with Y. Wang, Y-S Zheng), 2002, *IIE Transactions*, Vol. 34, 979-989.
32. "Optimal Material Control in an Assembly System with Component Commonality" (with N. Agrawal). *Naval Research Logistics*, Vol. 48, 2001, pp. 409-429.
33. "An Analysis of Several New Product Performance Metrics" (with J. Eliashberg, T. Ho). Focused Issue of *M&SOM* on *The Marketing/Operations Management Interface*, Vol. 2, No. 4, Fall 2000, pp. 337-349
34. "Operations Planning in the Presence of Innovative Diffusion Dynamics" (with T. Ho and H. Matsuo). Chapter 10 in *New Product Diffusion Models*, Proceedings of Conference on "Growth Diffusion Models," The Wharton School, September 1998. V. Mahajan, E. Muller, Y. Wind (Eds.), Kluwer Academic Press, 2000, pp. 237-259.
35. "Supply Chain Innovation: Delivering Values in After Sales Service " (with H. Lee, C. Cull and D. Willen). *Sloan Management Review*, Vol. 41, No. 4, Summer 2000, pp. 93-101.
36. "A Two-Echelon Repairable Inventory System with Stocking-Center-Dependent Depot Replenishment Lead Times" (with Y. Wang and Y-S Zheng). *Management Science*, Vol. 46, No. 11, November 2000, pp. 1441-1453.
37. "Architectures in 3-D: Concurrent Product, Process and Supply Chain Development", (with C. H. Fine), Working Paper, OPIM Department, The Wharton School, University of

Pennsylvania, November 1999.

38. “Exploiting Real Option Values in Global Supply Chain Networks” (with A. Huchzermeier). Working Paper, OPIM Department, The Wharton School, University of Pennsylvania, July 1999.
39. “Global Supply Chain Network Management under Price/Exchange Rate Risk and Demand Uncertainty” (with A Huchzermeier). *Proceedings* of 4<sup>th</sup> International Symposium on Logistics, Florence, Italy, July 1999, pp. 219-226.
40. “Global Supply Chain Management: A Survey of Research and Applications” (with A. Huchzermeier). Chapter 21, *Quantitative Models for Supply Chain Management*, S. Tayur, M. Magazine and M. Ganeshan (Eds.), Kluwer Academic Press, 1999, pp. 669-702.
41. “Identifying Opportunities for Improving Teradyne’s Service Parts Logistics System”(with Y. Wang and Y-S. Zheng). *Interfaces*, Vol. 29, No. 4, July-August 1999, pp.1-18.
42. “An Analytical Comparison of Long and Short Contracts” (with N. Agrawal). *IIE Transactions*, Volume 31, No. 8, August 1999, pp. 783-796.
43. “The Stabilizing Effect of Inventory in Supply Chains” (with M. Baganha). *Operations Research*, Supplement to Vol. 46, No. 3, May-June 1998, pp. S72-S83.
44. “An Anatomy of a Decision Support System for Developing and Launching Line Extensions” (with J. Eliashberg and T. Ho). *Journal of Marketing Research*, Special Issue on Innovation and New Product Development, Vol. 34, No. 1, Feb 1997, 117-129.
45. “Competing in Product and Service: A Product Life-Cycle Model” (with S. Whang). Special Issue of *Management Science* on Frontier Research in Manufacturing and Logistics, Vol. 43, No. 4, April 1997, pp. 535-545.
46. “Global Supply Chains: Research and Applications” (with S. Mallik). *Production and Operations Management*, Vol. 6, No. 3, Fall 1997, pp. 193-210.
47. “Service Parts Logistics: A Benchmark Analysis” (with V. Agrawal, Y-S Zheng). *IIE Transactions*, Special Issue of Scheduling and Logistics on Supply Chain Integration and Coordination, Vol. 29, No. 8, August 1997, pp. 627-639.
48. “Inventories and Supply Chain Stabilization: Conditions for Variance Reduction” (with M. Baganha). *Proceedings*, MSOM Conference, Dartmouth College, 1996, pp. 144-148.

49. “New Product Development: The Performance and Time-to-Market Tradeoffs” (with J. Eliashberg & T. Ho). *Management Science*, Vol. 42, No. 2, February 1996, pp. 173-186.
50. “Valuing Operational Flexibility Under Exchange Rate Risk” (with A. Huchzermeier). Special Issue of *Operations Research* on New Directions in Operations Management, Vol. 44, No. 1, January-February 1996, pp. 100-113.
51. “Global Manufacturing Strategy Analysis,” *Proceedings*, 1995 NSF Design and Manufacturing Grantees Conference.
52. “Product Innovation in Mature Firms” (with D. Dougherty). Chapter 5 in *Redesigning the Firm* (edited by E. Bowman and B. Kogut), Oxford University Press, 1995, pp. 87-115.
53. “Analysis of Distribution Strategies in the Industrial Paper and Plastics Industry” (with N. Agrawal, V. Agrawal, A. Raman). *Operations Research*, Vol. 43, No. 1, January-February 1995, pp. 6-18.
54. “New Product Design Strategy Analysis: A Modeling Framework” (with J. Eliashberg and T. Ho). Chapter 3 in *Management of Design: Engineering and Management Perspectives* (edited by S. Dasu & C. Eastman), Kluwer Academic Press, 1994, pp. 45-49.
55. “Multiproduct Integrated Production-Distribution Systems” (with D. Pyke). *European Journal of Operational Research*, 74, 1994, pp. 18-49.
56. “Dealer Inventory Management Systems” (with R. Ernst). *IIE Transactions*, Vol. 25, No. 5, September 1993, pp. 36-49.
57. “Performance Characteristics of Stochastic Integrated Production - Distribution Systems” (with D. Pyke). *European Journal of Operational Research*, 68, 1993, pp. 23-48.
58. “Customer Prioritization Strategies for Distribution Management (with R. Ernst). *International Journal of Operations and Production Management*, Vol. 12, No. 3, 1992, pp. 25-31.
59. “The Impact of Production Scale Economies, Manufacturing Complexity and Transportation Costs on Supply Chain Facility Networks” (with S. Moon). *Journal of Manufacturing and Operations Management*, Vol. 3, No. 4, 1992, pp. 269-292.
60. “Coordination Alternatives in a Manufacturer/Dealer Inventory System under Stochastic Demand” (with R. Ernst). *Production & Operations Management*, Vol. 1, No. 3, Summer 1992, pp. 254-268.



61. "Pooling in Two Location Inventory Systems with Non-Negligible Replenishment Lead Times" (with G. Tagaras). *Management Science*, Vol. 38, No. 8, 1992, pp. 1067-1083.
62. "Multi-Item Service Constrained (s,S) Policies for Spare Parts Logistics Systems" (with P. R. Kleindorfer, H. Lee, D. Pyke). *Naval Research Logistics*, Vol. 39, 1992, pp. 561-577.
63. "An Integrated Plant Loading Model with Economies of Scale and Scope" (with S. Moon). *European Journal of Operational Research*, Vol. 50, No. 3, 1991, pp. 266-279.
64. "Effects of Flexibility through Set Up Time Reduction and Expediting on Integrated Production Systems" (with D. Pyke). *IEEE Transactions on Robotics and Automation*, Special Issue on Manufacturing, Vol. 6, No. 6, December 1990, pp. 609-620.
65. "Operations Related Groups (ORGs): A Clustering Procedure for Production/Inventory Systems" (with R. Ernst). *Journal of Operations Management*, Vol. 9, No. 4, October 1990, pp. 574-598.
66. "Out of Touch with Customer Needs? Spare Parts and After Sales Service" (with H. Lee). *Sloan Management Review*, Vol. 31, No. 2, Winter 1990, pp. 55-66.
67. "OPTIMIZER: IBM's Multi-Echelon Inventory System for Managing Service Logistics" (with A. Tekerian, P. Kamesam, H. Lee and P. Kleindorfer). *Interfaces*, Vol. 20, No. 1, January-February 1990, pp. 65-82.
68. "The Management of Integrated Production Distribution Systems" (with H. Lee). *Advances in Manufacturing Systems: Integration and Processes. Proceedings, 1990 NSF Design and Manufacturing Systems Conference*, Tempe, AZ, January 1990, pp. 259-264.
69. "Push and Pull in Manufacturing and Distribution Systems (with D. Pyke). *Journal of Operations Management*, Vol. 9, No. 1, January 1990, pp. 24-42.
70. "Resource Deployment Analysis of Global Manufacturing and Distribution Networks" (with H. Lee). *Journal of Manufacturing and Operations Management*, 2, 1989, pp. 81-104.
71. "Near Optimal Service-Constrained, Stocking Policies for Spare Parts" (with P. R. Kleindorfer, H. L. Lee). *Operations Research*, Vol. 37, No. 1, January-February 1989, pp. 104-117.
72. "International Manufacturing and Distribution Networks: A Normative Model Framework" (with M. Fisher, R. Jaikumar). *Proceedings 1987 INSEAD Research Symposium: Issues in International Manufacturing*, and Chapter in *Managing International Manufacturing* (Ed. K. Ferdows), North Holland, 1989, pp. 67-93.

73. "Production Control and Inventory Management in Integrated Production – Distribution Systems" (with H. Lee). *Proceedings 1989 Conference on Production Research and Technology*, Berkeley, CA, January 1989, pp. 517-523.
74. "Multi-Item Classification and Generic Inventory Stock Control Policies" (with R. Ernst). *Journal of Production and Inventory Management*, Vol. 29, No. 3, 1988, pp.6-8.
75. "Service-Constrained (s,S) Inventory Systems with Priority Demand Classes and Lost Sales" (with P. R. Kleindorfer, H. L. Lee). *Management Science*, Vol. 34, No. 4, April 1988, pp. 482-499.
76. "Strategic Analysis of Integrated Production-Distribution Systems: Models and Methods" (with H. Lee). *Operations Research*, Vol. 36, No. 2, March-April 1988, pp. 216-228.
77. "Material Management in Integrated Production - Distribution Systems" (with H. Lee). *Proceedings 1987 NSF Systems Conference on Production Research and Technology*, Ann Arbor, MI, October 1987, pp. 141-145.
78. "Optimal Technology Choice in a Dynamic-Stochastic Environment," (with R. Halperin). *Journal of Operations Management*, Vol. 6, No. 3, May 1986, pp. 317-332.
79. "Optimal Stocking Policies for Low Usage Items in Multi-Echelon Inventory Systems" (with H. Lee, P. R. Kleindorfer). *Naval Research Logistics Quarterly*, Vol. 33, No. 1, February 1986, pp.17-38.
80. "Multi-Agent Customer Allocation in a Stochastic Service System" (with H. Lee). *Management Science*, Vol. 31, No. 6, June 1985, pp. 752-763.
81. "A Multinomial Logit-Model for the Spatial Distribution of Hospital Utilization" (with H. Lee). *Journal of Business & Economics Statistics*, Vol. 3, No. 2, April 1985, pp. 159-168.
82. "Equilibrium Analysis of Disaggregate Facility Choice Systems Subject to Congestion-Elastic Demand" (with H. Lee). *Operations Research*, Vol. 33, No. 2, March-April 1985, pp. 293-311.
83. "The Determinants of Spatial Distribution of Hospital Utilization in a Region" (with H. Lee). *Medical Care*, Vol. 23, No. 1, January 1985, pp. 27-38.
84. "Manufacturing Flexibility: Models and Measurements" (with A. Chatterjee, W. Maxwell and L. Miller). *Proceedings of the First ORSA/TIMS Special Interest Conference in Flexible Manufacturing Systems*, Ann Arbor, MI, 1985, pp. 49-64.

85. "Manufacturing Strategy: A Competitive Weapon for American Industry." Abridged version in *The Wharton Annual*, 1985, pp. 38-43.
86. "Manufacturing Strategy: Concepts and Methods" (with H. Lee). Chapter 5 in *The Management of Productivity and Technology in Manufacturing* (edited by P. R. Kleindorfer), Plenum Publishing Co., 1985, pp. 153-188.
87. "Optimal Student - Patient Assignment in Dental Education" (with A. Tzukert). *Journal of Medical Systems*, Vol. 9, No. 56, 1985, pp. 279-290.
88. "Excess Demand Distribution for MEsS Stocking Policies in Multi-Echelon Logistics Systems" (with P. R. Kleindorfer, H. L. Lee, and A. Tekerian). *Proceedings* Third International Symposium on Inventories, Budapest, 1984, pp. 644-667.
89. "Hospital Attractiveness as a Determinant of Regional Hospital Market Shares: A Multinomial Logit Model" (with H. Lee). *Operational Research* 84 (edited by J. P. Brans), Elsevier Science, 1984, pp. 1032-1046.
90. "The Impact of Adenine and Inventory Utilization Decisions on Blood Inventory Management" (with W. P. Pierskalla and R. J. Sasseti). *Transfusion*, Vol. 23, No. 1, January-February 1983, pp. 54-58.
91. "A Note on the Convexity of Some Performance Measures of M/M/c Queueing Systems" (with H. Lee). *Journal of Applied Probability*, 20, 1983, pp. 920-923.
92. "An Iterative Estimation and Validation Procedure for Specification of Semi-Markov Models with Application to Hospital Patient Flow" (with J. C. Hershey, E. N. Weiss). *Operations Research*, Vol. 30, No. 6, November-December 1982, pp. 1082-1104.
93. "Analysis of Ordering and Allocation Policies for Multi-Echelon, Age-Differentiated Inventory Systems" (with W. P. Pierskalla, H. Yen). TIMS Studies in Management Science, Vol. 16, *Multi-Level Production/Inventory Systems: Theory and Practice*, edited by L. Schwarz, 1981, pp. 353-378.
94. "A Stochastic Service Network Model with Application to Hospital Facilities" (with J. C. Hershey and E. N. Weiss). *Operations Research*, Vol. 29, No. 1, pp. 1-22, January-February 1981, pp. 1-22.
95. "Critical Number Order Policy for LIFO Perishable Inventory Systems" (with G. Prastacos). April 1979, in Special Issue of *Computers & Operations Research* on "Recent Advances in Inventory Theory," Vol. 8, No. 3, 1981, pp. 185-195.

96. "Optimal Inventory Order Policy for a Firm Using the LIFO Inventory Costing Method" (with R. Halperin). *Journal of Accounting Research*, Vol. 18, No. 2, 1980, pp. 375-389.
97. "Analysis of Capacity Decisions for Progressive Patient Care, Hospital Facilities" (with J. C. Hershey and E. N. Weiss). *Health Service Research*, Vol. 15, No. 2, Summer 1980, pp. 145-160.
98. "A Dynamic Inventory System with Recycling" (with S. Nahmias and W. P. Pierskalla). *Naval Research Logistics Quarterly*, Vol. 27, No. 2, June 1980, pp. 196-289.
99. "Regional Blood Bank Inventory Control and Distribution" (with W. P. Pierskalla, R. J. Sasseti). *Proceedings* of 1980 Conference on the Management and Logistics of Blood Banking, 1980.
100. "An Overview of a Hierarchy of Planning Models for Regional Blood Bank Management" (with W. P. Pierskalla, R. J. Sasseti, and J. Consolo). *Transfusion*, Vol. 19, No. 5, September-October 1979, pp. 526-534.
101. "Optimal Inventory Ordering Policy with Tax Payments under FIFO and LIFO Accounting Systems" (with D. Pekelman). *Management Science*, Vol. 25, No. 8, August 1979, pp. 729-743.
102. "Target Inventory Levels for a Hospital Blood Bank or a Decentralized Regional Blood Banking System" (with W. Pierskalla). *Transfusion*, Vol. 19, No. 4, July-August 1979, pp. 444-454.
103. "Simulation of Blood Bank Systems" (with W.P. Pierskalla). *Simuletter*, Vol. 10, No. 4, Summer 1979, pp. 14-18.
104. "LIFO Inventory Systems" (with D. Pekelman). *Management Science*, Vol. 24, No. 11, July 1978, pp. 1150-1162.
105. "Joint Pricing and Ordering Policy for Exponentially Decaying Inventory with Known Demand," *Naval Research Logistics Quarterly*, Vol. 24, No. 2, June 1977, pp. 257-268.
106. "Analysis of Single Critical Number Order Policies for Perishable Inventories," *Operations Research*, Vol. 24, No. 4, July-August 1976, pp. 726-741.
107. "A Feedback Inventory Model of a Hospital Blood Bank," (with S. Nahmias and W. Pierskalla). *Proceedings* of the Seventh Annual Modeling and Simulation Conference, Pittsburgh, PA, April 1976, pp. 612-616.
108. "Synthetic Longitudinal Sampling and Its Application to Public Policy Analysis" (with A. R. Dobell). *Proceedings* of the Summer Computer Simulation Conference, San

Francisco, July 1975, pp. 1116-1133.

109. "Regionalization and Regional Management Strategies for the Blood Banking System: An Overview" (with I. Or, W. P. Pierskalla and H. Yen). *Proceedings* of the Second National Symposium on the Logistics of Blood Transfusion Therapy, Detroit, MI, June 1975, pp.153-167.
110. "Management Policies for a Regional Blood Bank" (with W. P. Pierskalla). *Transfusion*, Vol. 15, No. 1, January-February 1975, pp. 58-67.

## **REVIEWS, TRADE PRESS, INTERVIEWS, REPORTS & SOFTWARE**

111. "Inventory Management in the Age of Big Data" *Harvard Business Review* (online forum), June 24, 2015.
112. "Global Supply Chain Benchmark Study: An Analysis of Sourcing and Re-Structuring Decisions", (with H. Lee), *Supply Chain Navigator*, 2015.
113. "Lessons in Logistics from the Terrorist Attack in Mumbai", Indian *Knowledge@Wharton* and *Wharton Aerospace and Defense Report*, February, 2009.
114. "The Value of the Aftermarket in a Down Economy", White Paper, MCA Solutions, [www.mcasolutions.com](http://www.mcasolutions.com), February, 2009.
115. "Don't Forget Your Customer! How Managing the Customer Experience Can Help Companies Survive Tough Economic Times, *Industry Week*, February, 2009.
116. "Do CIOs Benefit from Software Partnerships? *Optimize*, March 2007.
117. "Implications for Service Parts Management in the Rapidly Changing Aviation MRO Market", *MRO Management*, September 2006.
118. "Five Things You Need to Know to Maximize the Service Supply Chain", *Reverse Logistics*, Summer 2006.
119. "Product Performance-Based Service Support: A Framework for Resource Management to Support Customer-Centric Competitive Strategies", *Service Management*, April 2006.
120. "Unleashing the Power of the Service Supply Chain", *SCMNews & WebProNews.com*, December, 2005.
121. "Tapping the Service Supply Chain", *Line56*, June, 2005.

122. "The Service Supply Chain: Turning Potential into Profit", *Inbound Logistics*, May, 2005.
123. "S-Business Management: Transforming the Service Supply Chain Into a Profit Center: It's Time to Put Service in the Driver's Seat", *SBusiness*, March- April, 2005.
124. "All Change in The Second Supply Chain Revolution," article in Survey – Mastering Management, *Financial Times*, October 2, 2000.
125. "After Sales Service Supply Chains", A Benchmark Update of the North American Computer Industry", (with V. Agrawal), Fishman-Davidson Center for Service and Operations Management, The Wharton School, University of Pennsylvania, August 1999.
126. "Three-Dimensional Concurrent Engineering: For Products, Processes and Supply Chains, "(Matsushita Electronic Industrial Co., Ltd.), *OVERVIEW*, Vol. 10, No. 9, Issue 109, September 1998.
127. "Benchmarking Service Parts Logistics: An In-depth Analysis" (with S. Zhang). Fishman-Davidson Center for Service and Operations Management, The Wharton School, University of Pennsylvania, April 1997.
128. "Service Parts Logistics Benchmarking Study," Center for Manufacturing and Logistics Research, The Wharton School, University of Pennsylvania, Philadelphia, April 1994.
129. "New Product Development: Process and Portfolio Management" (with J. Eliashberg and T. Ho), 1994.
130. "User Manual Campbell Soup: Product Portfolio Support System (PS<sup>2</sup>) (with J. Eliashberg, T. Ho and D. Weng), 1994.
131. "Creating the New Global Enterprise," Proceedings of an Industry-University Conference on United States-Japanese Manufacturing Alliances, The Wharton School, University of Pennsylvania, April 1993.
132. "Creating Value Through Operations - The Legend of Elwood S. Buffa" (with P. R. Kleindorfer). *Perspectives in Operations Management: Essays in Honor of Elwood S. Buffa*, Kluwer Academic Publishers (edited by R. Sarin), 1993, pp. 3-22.
133. "New Ways, New Rules for Financial Business Decisions," *Boardroom Reports*, Vol. 15, No. 3, February 1, 1986, pp. 3-4.
134. "Careers in OR/MS or Life after the Ph. D: A Student/Practitioners/Faculty Discussion," (with R. J. Ruth and K. E. Stecke). *Operations Research*, Vol. 33, No. 3, May-June 1985, p. 699.

135. Blood Bank Inventory System User Manual (with W. P. Pierskalla). Version 1.0, 1983.
136. "Hax, A. C., Studies in Operations Management," Review in *Interfaces*, Vol. 11, No. 1, February 1981, p. 93.
137. "Housing Policy Analysis Methods: An Evaluation and Strategy for Mortgage and Housing Corporation," Ottawa, December 1980.
138. "Regionalization of Blood Banking Services," (with W. P. Pierskalla and R. J. Sasseti). Final Report Summary, Grant No. 5 R01 HS 02634, U.S. Department of Health and Human Services, July 1980.
139. "An Analysis of Regional Health Planning Methodologies" (with J. C. Hershey). Final Report of Grant No. 1-RO3-HS-03543-01, U.S. Department of Health and Human Services, June 1980.
140. "What's Wrong with Current OR Curricula: Round 2" (with S. Nahmias and M. Magazine). *Interfaces*, Vol. 9, No. 1, November 1978, p. 87.
141. "Regional Resource Allocation and Organization" (with W. Hamilton, J. Bly, J. Durback, R. Rosenman and S. Warren). Technical Report prepared for the Research Issues Conference, National Health Care Management Center, Leonard Davis Institute of Health Economics, University of Pennsylvania, May 24, 1977.
142. "Marshall, P. W., et al, Operations Management: Text and Cases," Review in *The Journal of Business*, Vol. 51, No. 1, January 1976, pp. 138-140. "MCSSAP II: (Monte Carlo Simulation of Student Assistance Plans)." Confidential Report to the Planning Branch, Treasury Board Secretariat, Government of Canada, 1973.
143. "Microsimulation System Manual" (with L. Cseh). Institute for Policy Analysis, University of Toronto, 1973.
144. "Monte Carlo Simulation of Government Programs: The Deterministic Model," Quantitative Course Report, Institute for Policy Analysis, University of Toronto, 1973.
145. "MCSSAP (Monte Carlo Simulation of Student Assistance Plans): A User's Manual," Institute for Policy Analysis, University of Toronto, 1971.

## EDUCATIONAL MATERIALS

Software:

"Master Scheduling Game"

February 1987

“Production Scheduling Game” February 1987  
“General Appliance Corporation Case Simulator” September 1987, revised 1993, 1996

Cases:

Revenue Management at Harrah’s Entertainment Inc., (with Noah Gans and N. Agrawal), Vol 9, No. 3, May 2009, *Informs Transactions on Education*.  
General Appliance Corporation, 1993, revised 1998  
Adopted at Harvard, MIT, Michigan, Dartmouth, Georgetown, Stanford  
Published in *Global Operations and Logistics*, by J. P. Dornier, et al., Wiley, 1998.  
Ingersoll Rand - B Case, 1994. *Technology and Operations Review*, 1997.

Teaching Notes:

Tradeoff Analysis and Portfolio Management in New Product Development  
(with T. Ho) 1993. *Technology and Operations Review*, 1997.  
Cyclone Grinder - Ingersoll Rand Case Teaching Note (with T. Flaherty) 1996.  
“Repairable Service Parts Inventory Management”, (with V. Deshpande, N. Rudi), 2004.

## WORK IN PROGRESS - RESEARCH PROJECTS

1. “Transition from Products to Services: The Need for Integrating Industrial Ecology and Service Operations Perspectives”, (with Vered Blass and Tzruya Chebach, Tel Aviv University )
2. “Service Supply Chain Inventory Management: Models, Systems and State-of-the-Art” (with V. Agrawal and V. Deshpande), forthcoming chapter in *Technology, Information & Operations Management*.