

Robert C. Carlson

Professor
Management Science and Engineering
Stanford University; Stanford, CA 94305-4026
Telephone (650)-723-9110
FAX (650)-723-1614
e-mail r.c.carlson@stanford.edu

AREAS OF SPECIALIZATION

Manufacturing Strategy, Production and Operations Management, Operations Research, Quantitative Methods, Product Development

EDUCATION

1962	BS	Mechanical Engineering (with distinction) Cornell University
1963	MS	Operations Research The Johns Hopkins University
1976	PhD	Mathematical Sciences The Johns Hopkins University

PROFESSIONAL EXPERIENCE

2000 - Present	Stanford University, Stanford, California. Professor, Department of Management Science and Engineering Professor of Operations Management, by courtesy Graduate School of Business (1990 - Present)
1987 - 1988	University of California, Berkeley, California. Visiting Professor of Business Administration, School of Business Administration
1984 & 1988	International Management Institute, Geneva, Switzerland. Visiting Faculty Member — Manufacturing Strategy
1978 - 1979	Dartmouth College, Hanover, New Hampshire. (Sabbatical Leave) Visiting Associate Professor of Management Science, The Amos Tuck School of Business Administration
1970 - 2000	Stanford University, Stanford, California. Department of Industrial Engineering and Engineering Management Chairman 1987-88 and 1992-93, Associate Chairman 1988-92 Professor 1982 - 2000 Associate Professor 1977-82 Assistant Professor 1970-77
1962 - 1970	Bell Telephone Laboratories, Holmdel, New Jersey. Member of Technical Staff in Operations Analysis and Economic Studies Dept
1961 - 1962	Cornell University, Ithaca, New York. Teaching Assistant in the Industrial Engineering and Operations Research Division of the School of Mechanical Engineering

HONORS

Member of Faculty Board of International College of Engineering — GKN Automotive - PCD
Tau Beta Pi
Phi Kappa Phi
Pi Tau Sigma
Owens-Illinois Scholarship, Cornell University (1957-62)
Maxwell Upson Award in Mechanical Engineering, Cornell University (1962)
Bell Laboratories Systems Engineering Fellowship (1962-63)
Bell Laboratories Doctoral Support Fellowship (1966-67)
Who's Who in Science and Engineering — 2nd ed.(1993) through 10th ed.(2008-09)
Who's Who in Engineering — 4th ed.(1981) through 9th ed.(1994)
Who's Who in The West — 19th ed.(1984-85) through 34th ed.(2007)
Who's Who in Technology — 6th ed.(1988-89) through current Edition
Who's Who in America — 45th ed.(1989) through 63rd ed.(2009)
Who's Who in the World — 10th ed.(1990) through 26th ed.(2009)
Who's Who in American Education — 3rd ed.(1992-93) through 8th ed.(2007-08)
Who's Who in Finance and Industry — 27th ed.(1992-93) through 35th ed.(2006-07)
Who's Who in Finance and Business — 36th ed.(2008-2009))

AWARDS

INFORMS Case Competition finalist for Case Entitled, "The Uncertain Supply Case"
(2003)

Co-sdvised student team which won a Silver Medal in IDEA2003 (IDSA annual design contest) for the design of the Equilibrio di Primat: A Wine decanting Cradle

Coauthor of "Formalization and Automation of Time-Space Conflict Analysis", which was designated as the Best Paper published in the Technical Council on Computing and Information Technology Journal of Computing in Civil Engineering in 2002

Eugene L. Grant Teaching Award (selected by student and alumni vote),
Department of Industrial Engineering and Engineering
Management (1994)

Faculty Service Award, Department of Industrial Engineering and
Engineering Management (1984)

Outstanding Faculty Contribution to the Action Research
Liaison Office, Stanford University (1983)

Stanford Tau Beta Pi Award for Excellence in Undergraduate
Teaching, School of Engineering, Stanford University (1982)

Outstanding Teacher Award (selected by student vote),
Department of Industrial Engineering and Engineering
Management (1980)

PROFESSIONAL SOCIETIES

Institute for Operations Research and the Management Sciences (INFORMS)
Chairman, Membership Committee (1981-83)
Institute of Industrial Engineers (IIE)
Production and Operations Management Society (POMS)
American Production and Inventory Control Society (APICS)
Member, Board of Directors (1975-81)
Student Relations Director(1975-76)
Vice President, Community Relations (1976-77)
Education Liaison (1977-81)
International Material Management Society (Professional (IMMS)
Certified in Material Management — Certificate No. 2055)
Decision Sciences Institute (DSI)
International Society for Inventory Research (ISIR)
Sigma Xi
American Association of University Professors (AAUP)

FUNDED RESEARCH

2001-04 Research on Scalable Models of Hierarchical Available -to-Promise (ATP) Systems.
GM/Stanford Collaborative Research Lab in Work Systems

1994-95 Research on Experiential Learning for Reengineering the Manufacturing Function.
Funded by The National Science Foundation

1981-83 Research on Scheduling Algorithms for Large Scale, Variable
Order Size, Production Facilities.
Funded by an Alcoa Foundation Grant

1977-79 Research in Multigoal Integer Programming Methods.
Funded by the Engineering Research Development Fund,
School of Engineering, Stanford University

1971-75 Research in Urban Transportation Models and Systems.
Funded by the Urban Mass Transportation Administration of the
Department of Transportation, University Research and
Training Grant No. CA-11-0008

CONSULTING

Microsoft Great Plains, Redmond, Washington (2002)
Reckitt & Colman, Brandon, Mississippi (1994-96)
Raychem, Menlo Park, California (1989)
Martin Marietta, Littleton, Colorado (1989)
CertainTeed Corporation, Valley Forge, Pennsylvania (1988)
Sorrento Electronics, San Diego, California (1987)
Basic American Foods, Vacaville, California (1987)
Roussel Uclaf, Paris, France (1985)
Rehrig Pacific Co., Los Angeles, California (1982)
Electric Power Research Institute, Palo Alto, California (1981-84)
Burroughs Corp., Santa Barbara, California (1981)
Utah Power and Light Co., Salt Lake City, Utah (1977-78)
Pacific Northwest Bell, Seattle, Washington (1974-75)
Plantronics, Inc., Santa Cruz, California (1973-74)
Hewlett-Packard, Cupertino, California (1973)
Japanese Standards Association, Tokyo, Japan (1971)

**STANFORD
EXECUTIVE
TEACHING**

Stanford Advanced Project Management
Integrated Project Systems (IPS)
Lecturer in **Mastering the Project Portfolio** (2000-2006)

Managing Your Supply Chain for Global Competitiveness
Lecturer in **Manufacturing Outsourcing and Supplier Strategy** (1998-2006)

Stanford-AEA Executive Institute for Management of High-Technology
Companies. Lecturer in **Manufacturing** (1976-2006)

Strategic Management of Technology-based Companies
Lecturer in **Manufacturing Strategy** (1996-98)
Program Co-Director (1996-97)

Product Development and Manufacturing Strategy
Lecturer in **Manufacturing Strategy** (1994-2000)
Program Co-Director (1994-2000)

Manufacturing Strategy for Competitive Advantage
Lecturer in **Manufacturing Strategy** (1986-93)
Program Director (1986-93)

Effective Management of Production Operations
Lecturer in **Quantitative Methods and Inventory Control** (1978-98)

Stanford Program on Managing Innovation
Lecturer in **Innovation in Manufacturing** (1990-92)

Stanford Business School Board of Directors Program
Lecturer in **Manufacturing Strategy** (1988)

Stanford Engineering Executive Program
Lecturer in **Manufacturing** (1985-89)

Financial Decision Making and Engineering Economy for Public Utilities
Lecturer in **Managerial Economics** (1971-85)
Program Director (1973-85)

Construction Executive Program at Stanford.
Lecturer in **Microeconomics and Technology Planning** (1984)

**OTHER
EXECUTIVE
TEACHING**

Supply Chain Management Program
Novo Nordisk
Lecturer on **Supplier Management** (2006)

Delta Business Management Program
Boeing Space and Communications
Lecturer on **Manufacturing Strategy** (2004-)

Product Development and Manufacturing Strategy Program
Applied Materials
Program Director and Lecturer on
Product Development and Manufacturing Strategy (2000)

Manufacturing Management Program
Rocketdyne Division of Boeing
Lecturer on **Manufacturing Strategy** (1998-2001)

Integrated Supply Chain Management Program
University Connections
Lecturer on **Supplier Strategy** (1994-2000)

Andersen Executive Program
Arthur Andersen and Co. SC
Lecturer on **Management Challenges of New Products and Services** (1993)

Production Management Training Program
Brown and Williamson Corp
Lecturer on **Manufacturing Strategy** (1993-98)

Strategic Production Course
Japan Management Association
Lecturer on **Manufacturing Strategy** (1990-93)

Management Development Course
GKN Automotive
Lecturer on **Manufacturing Strategy** (1989-93)

Business and Manufacturing in the 1990's and Beyond
EDS (Electronic Data Systems)
Program Director and Lecturer on **Manufacturing Strategy** (1992-93)

Manufacturing Management Program
Varian Associates
Lecturer on **Manufacturing Strategy** (1989-91)

Manufacturing Program for Test and Measurement Sales Managers
Hewlett-Packard
Lecturer on **Manufacturing Strategy** (1992-94)

Manufacturing Generalist Program
Raychem Corporation
Lecturer on **Manufacturing Strategy** (1989-91)

General Management Program
Varian Associates
Lecturer on **Manufacturing Strategy** (1989-91)

Manager of Managers Program
Tektronix Corporation
Lecturer on **Manufacturing Excellence** (1989-90)

Senior Manufacturing Executive Development Program
Rockwell International
Lecturer on **Manufacturing Strategy** (1989-90)

Manufacturing Competitive Advantage Conference
3M Corporation
Lecturer on **Manufacturing Strategy** (1987)

Manufacturing Strategy Conference
Lockheed California Company
Program Director and Lecturer on **Strategy** (1987)

Manufacturing Management Seminar
Baxter Healthcare Corporation
Lecturer on **Manufacturing Strategy and Inventory Control** (1983-93)

Manufacturing Strategy for Competitive Advantage
John M. Olin School of Business, Washington University
Lecturer on **Manufacturing Strategy** (1989-93)

Purchasing Executive Program
UCLA and National Association of Purchasing Management
Lecturer on **Manufacturing Competitiveness and Sourcing** (1988-89)

Effective Management of Production Operations
The Amos Tuck School of Business Administration, Dartmouth College
Lecturer on **Quantitative Methods and Inventory Control** (1980-88)

The Executive Program
Berkeley Business School, The University of California
Lecturer on **Manufacturing Strategy** (1986-90)

Advanced Management Program in Regulated Industries
Berkeley Business School, The University of California
Lecturer on **Managerial Economics** (1986-89)

Advanced Production Management Seminar
Chase Manhattan Bank
Lecturer on **Operations Management** (1988)

Effective Management of Production Operations
California Institute of Technology
Lecturer on **Quantitative Methods and Inventory Control** (1984-86)

Manufacturing Conference
NCR Corporation
Lecturer on **Manufacturing Excellence** (1987)

Manufacturing Engineering Conference
NCR Corporation
Lecturer on **Manufacturing - Design Interface** (1987)

Publications

1. “ Dynamic Order Promising: Real-Time ATP”, with A.G.Robinson,
International Journal of Integrated Supply Management Vol. 3 (2007), 283-301.
2. “ Formalization and Automation of Time-Space Conflict Analysis”, with B. Akinci, M. Fischer, and R. Levitt,
Journal of Computing in Civil Engineering, Vol. 16 (2002), 124-134.
3. “ Total Unimodularity Applications in Bi-Objective Discrete Optimization”, with P. Kouvelis,
Operations Research Letters, Vol. 11 (1992), 61-65.
4. “ Safety Stocks for Assembly Systems with Fixed Production Intervals”, with C.A. Yano,
Journal of Manufacturing and Operations Management, Vol. 1 (1988), 182-201.
5. “ Simple Solution Procedures for Nonlinear Programming Problems that are Derivative Decomposable”,
with J.E. Hodder and J.V. Jucker, **European Journal of Operational Research**, Vol. 31 (1987), 118-126.
6. “ Interaction Between Frequency of Rescheduling and the Role of Safety Stock in Material Requirements
Planning Systems”, with C.A. Yano, **International Journal of Production Research**,
Vol. 25 (1987), 221-232.
7. “ Safety Stocks in MRP — Systems with Emergency Setups for Components”, with C.A. Yano,
Management Science, Vol. 32 (1986), 403-412.
8. “ An Analysis of Scheduling Policies in Multiechelon Production Systems”, with C.A. Yano,
IIE Transactions, Vol. 17 (1985), 370-377.
9. “ Designing a Production Line to Maximize Profit”, with M.J. Rosenblatt,
IIE Transactions, Vol. 17 (1985), 117-122.
10. “ Dynamic Lot-Sizing when Demand Timing is Uncertain”, with M. C. Burstein and C.H. Nevison,
Operations Research, Vol. 32 (1984), 362-379.
11. “ A Lot-Sizing Algorithm for Reducing Nervousness in MRP Systems”, with D.H. Kropp,
Management Science, Vol. 30 (1984), 240-244.
12. “ A Note on Stopping Rules for Rolling Production Scheduling”, with D.H. Kropp and S.L. Beckman,
Journal of Operations Management, Vol. 3 (1983), 113-119.
13. “ Comments on ‘ Improving Inventory Productivity in Multilevel Distribution Systems’ ”, in **Productivity
and Efficiency in Distribution Systems**, D.A. Gautschi (Ed.), North-Holland, 1983, 183-185.
14. “ Heuristic Lot-Sizing Approaches for Dealing with MRP System Nervousness”,
with D.H. Kropp and J.V. Jucker, **Decision Sciences**, Vol. 14 (1983), 156-169.
15. “ The Simultaneous Determination of Plant and Leased Warehouse Capacities for a Firm Facing Uncertain Demand
in Several Regions”, with J.V. Jucker and D.H. Kropp, **IEEE Transactions**, Vol. 14 (1982), 99-108.
16. “ Analytical Methods for Implementing Industrial Load Management Programs”, with N. Hassig and M.L. Chan,
Proceedings of the 1982 Industrial Energy Conservation Technology Conference,
Houston, Texas, April 7, 1982.
17. “ The Effectiveness of Extending the Horizon in Rolling Production Scheduling”,
with S.L. Beckman and D.H. Kropp, **Decision Sciences**, Vol. 13 (1982), 129-146.
18. “ Inventory Planning Using Rolling Production Scheduling”, with D.H. Kropp,
Proceedings of the First International Symposium on Inventories,
Budapest, Hungary, September 1-5, 1980, 331-340.

19. "Less Nervous MRP Systems : A Dynamic Economic Lot-Sizing Approach", with D.H. Kropp and J.V. Jucker, **Management Science**, Vol. 25 (1979), 754-761.
20. "Use of Dynamic Lot-Sizing to Avoid Nervousness in Material Requirements Planning Systems", with D.H. Kropp and J.V. Jucker, **Production and Inventory Management**, Vol. 20 (1979), 49-58.
21. "Use of Optimization and Simulation Models to Analyze Outpatient Health Care Settings", with J.C. Hershey and D.H. Kropp, **Decision Sciences**, Vol. 10 (1979), 412-433.
22. "On Solutions That Are Better Than Most", with S. Baum, **OMEGA, The International Journal of Management Science**, Vol. 7 (1979), 249-255.
23. "Use of Both Optimization and Simulation Models to Analyze Complex Systems", with D.H. Kropp and J.V. Jucker, **Proceedings of the 1978 Winter Simulation Conference**, Miami Beach, Florida, December 4-6, 1978, 195-202.
24. "Some Problems in Applying the Continuous Portfolio Selection Model to the Discrete Capital Budgeting Problem", with S. Baum and J.V. Jucker, **Journal of Financial and Quantitative Analysis**, Vol. 13 (1978), 333-344.
25. "Analysis of Outpatient Health Care Settings Using New Quantitative Techniques", with J.C. Hershey and D.H. Kropp, **Proceedings of the Ninth Annual Meeting of the American Institute for Decision Sciences**, Chicago, Illinois, October 19-21, 1977, 298-299.
26. "Recursive Modeling of Outpatient Health Care Settings", with D.H. Kropp, **Journal of Medical Systems**, Vol. 1 (1977), 123-135.
27. "Recursive Modeling of Outpatient Health Care Settings", with D.H. Kropp, **Proceedings of the Conference on the Problems of Disaggregation in Manufacturing and Service Organizations**, Ohio State University, Columbus, Ohio, March 10-11, 1977, 130-136.
28. "A Multicriteria Approach to Strategic Planning : An Application in Inventory Control", with H.H. Therp, **OMEGA, The International Journal of Management Science**, Vol. 5 (1977), 57-65.
29. "Dial-A-Ride Service in Santa Clara County", **Transportation Research Record**, Vol. 608 (1976), 48-53.
30. "The Simple Plant Location Problem Under Uncertainty", with J.V. Jucker, **Operations Research**, Vol. 24 (1976), 1045-1055.
31. "A Multicriteria Approach to Strategic Planning — An Application in Inventory Control", with H.H. Therp, **Proceedings of EURO II — Second European Conference on Operations Research**, Stockholm, Sweden, November 29 - December 1, 1976, North-Holland, 72-83.
32. "Estimating Field Failure Rates with a Constant Return for Repair Ratio Model: An Application in the U.S. Electronics Industry", with H.A. DiGiulio, **Proceedings of the 20th International EOQC Conference**, Copenhagen, Denmark, June 15-18, 1976, Vol. C, 69-76.
33. "Anatomy of a Systems Failure : Dial-A-Ride in Santa Clara County, California", **Transportation**, Vol. 5 (1976), 3-16.
34. "Multi-Goal Optimization in Managerial Science", with S. Baum, **OMEGA, The International Journal of Management Science**, Vol. 2 (1974), 607-623.
35. "Scheduling to Minimize Interaction Cost", with G.L. Nemhauser, **Operations Research**, Vol. 14 (1966), 52-58.

Dissertations Supervised

1. Robinson (PhD) 2005, "Real-time ATP/CTP: Policies for Dynamic Order Processing"
2. Duan (PhD) 2002, "Essays on Optimal Production Planning"
3. Hui (PhD) 1990, "Multistage Production Systems with Imperfect Processes"
4. Billington (PhD) 1989, "A Data Efficient Methodology for Incorporating Strategic Goals into the Project Selection Process"
5. Yano (PhD) 1981, "Safety Stocks in Material Requirements Planning Systems"
6. Shukla (PhD) 1979, "Interactive Solution of Multicriterion Zero-One Variable Problems with Uncertain Information"
7. Farzin (Engr) 1977, "An Analysis of Important Cost Elements in a Computer Communication Network"
8. Gupta (PhD) 1977, "Heuristic Algorithms for Finding 'Best' Routes in Time-Dependent, Multi-Modal Transportation Networks"
9. Kropp (PhD) 1977, "Recursive Modeling of Ambulatory Health Care Settings"
10. Therp (PhD) 1975, "A Multicriteria Approach to Strategic Planning with Applications in Production and Inventory Control"
11. Baum (PhD) 1975, "Analysis for Interactive Solution of Becnriterion Problems in Binary Variables"
12. Eschenbach (PhD) 1975, "The Multi-Period Location-Allocation Problem"
13. Rivera (Engr) 1974, "Labor and Machine Constrained Job Shops: A Simulation Investigation of Dispatching Rules"
14. Wandel (PhD) 1973, "A Three-Stage Probabilistic Programming Model for Manpower Management: A Nurse-Staffing Example"
15. Yucaoglu (PhD) 1973, "Algorithms for Resource and Route Constrained Shortest Path Problems in Time-Dependent Transportation Networks"
16. Kashani (Engr) 1972, "Determination of Optimal Buffer Capacities in a Sequential Process"
17. Bush (PhD) 1972, "Restructuring and Solving Zero-One Integer and Fixed-Charge Mixed Integer Programming Problems"
18. Yucaoglu (Engr) 1971, "A Dynamic Programming Solution Algorithm for the Capital Budgeting Problem Using Bradley Theorems"