

## Contact Information

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## Research Interests

Algorithm development and application of operations research methods, particularly mathematical optimization.

## Employment History

### Michigan State University

July 1997 – present	Professor of Management Science
July 1985 – June 1997	Associate Professor of Management Science
September 1980 – June 1985	Assistant Professor of Management Science
September 1979 – August 1980	Visiting Assistant Professor of Management Science
July 1979 – August 1979	Visiting Instructor

## Education

Ph. D. in Mathematics, Michigan State University, 1980.

Dissertation: “Existence and Computation of Static Equilibria in Certain Economic Models, with Application to the PIES Model of the Energy Sector” (under Prof. V. P. Sreedharan).

M. S. in Probability and Statistics, Michigan State University, 1978.

A. B. in Mathematics, Princeton University, 1973.

## Refereed Journal Articles

Bai, L. and P. A. Rubin. Combinatorial Benders Cuts for the Minimum Toll Booth Problem. *Operations Research*, Vol. 57, No. 6, November-December 2009.

Asparouhov, O and P. A. Rubin. Oscillation heuristics for the two-group classification problem. *Journal of Classification*, Vol. 21, No. 2, December 2004.

Rubin, P. A. Comment on “A nonlinear Lagrangian dual for integer programming”. *Operations Research Letters*, Vol. 32, No. 2, March 2004.

- Murthy, N. N., W. C. Benton and P. A. Rubin. Offsetting inventory cycles of items sharing storage. *European Journal of Operational Research*, Vol. 150, No. 2, October 2003.
- Rubin, P. A. and W. C. Benton. Evaluating jointly constrained order quantity complexities for incremental discounts. *European Journal of Operational Research*, Vol. 149, No. 3, September 2003.
- Iannarilli, F. J. Jr. and P. A. Rubin. Feature selection for multi-class discrimination via mixed-integer linear programming. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, Vol. 25, No. 6, June 2003.
- Rubin, P. A. and W. C. Benton. A generalized framework for quantity discount pricing schedules. *Decision Sciences*, Vol. 34, No. 1, Winter 2003.
- Tan, K. C., R. Narasimhan, P. A. Rubin and G. L. Ragatz. A comparison of four methods for minimizing total tardiness on a single processor with sequence dependent setup times. *Omega*, Vol. 28, No. 3, June 2000.
- Rubin, P. A. Adapting the Warmack-Gonzalez algorithm to handle discrete data. *European Journal of Operational Research*, Vol. 113, No. 3, March 1999.
- Rubin, P. A. Solving mixed integer classification problems by decomposition. *Annals of Operations Research*, Vol. 74, 1997.
- Rubin, P. A. and G. L. Ragatz. Scheduling in a sequence dependent setup environment with genetic search. *Computers and Operations Research*, Vol. 22, No. 1, 1995.
- Rubin, P. A. A comment regarding polynomial discriminant functions (short communication). *European Journal of Operational Research*, Vol. 72, No. 1, January 1994.
- Rubin, P. A. and W. C. Benton. Jointly constrained order quantities with all-units discounts. *Naval Research Logistics*, Vol. 40, No. 2, March 1993.
- Rubin, P. A. Separation failure in linear programming discriminant models. *Decision Sciences*, Vol. 22, No. 3, July/August 1991.
- Rubin, P. A. A comparison of linear programming and parametric approaches to the two group discriminant problem. *Decision Sciences*, Vol. 21, No. 2, Spring 1990.
- Rubin, P. A. and J. R. Carter. Joint optimality in buyer-supplier negotiations. *Journal of Purchasing and Materials Management*, Vol. 26, No. 2, Spring 1990.
- Rubin, P. A. Heuristic solution procedures for a mixed-integer programming discriminant model. *Managerial and Decision Economics*, Vol. 11, No. 4, October 1990.
- Rubin, P. A. Evaluating the maximize minimum distance formulation of the linear discriminant problem. *European Journal of Operational Research*, Vol. 41, No. 2, July 1989.
- Wagner, J. A. III, P. A. Rubin and T. J. Callahan. Incentive payment and nonmanagerial productivity: an interrupted time series analysis of magnitude and trend. *Organizational Behavior and Human Decision Processes*, Vol. 42, August 1988.
- Lothner, D. C., H. M. Hoganson and P. A. Rubin. Examining short-rotation hybrid poplar investments by using stochastic simulation. *Canadian Journal of Forestry*, Vol. 16, No. 6, December 1986.

Rubin, P. A. Short-run characteristics of samples drawn by random walks. *Communications in Statistics*, Vol. B14, No. 2, June 1985.

Narasimhan, R. and P. A. Rubin. Fuzzy goal programming with nested priorities. *Fuzzy Sets and Systems*, Vol. 14, No. 2, November 1984.

Rubin, P. A. Generating random points in a polytope. *Communications in Statistics*, Vol. B13, No. 3, May 1984.

Rubin, P. A., D. M. Dilts and B. A. Barron. Economic order quantities with quantity discounts. *Decision Sciences*, Vol. 14, No. 2, April 1983.

Rubin, P. A. Implementation of a subgradient projection algorithm. *International Journal of Computer Mathematics*, Vol. 12, No. 3-4, 1983.

Rubin, P. A. A note on the geometry of reciprocal fuzzy relations. *Fuzzy Sets and Systems*, Vol. 7, No. 3, May 1982.

## **Refereed Book Chapters**

Rubin, P. A. Linear programming models for classification. In *Encyclopedia of Optimization* (C. A. Floudas and P. M. Pardalos, eds.), Kluwer Academic, 2001.

Rubin, P. A. Mixed integer classification problems. In *Encyclopedia of Optimization* (C. A. Floudas and P. M. Pardalos, eds.), Kluwer Academic, 2001.

Moch, M., A. Buchko and P. A. Rubin. A simulation-based time-series policy-capturing methodology for studying recurring decision making in organizations. In *Advances in Information Processing in Organizations* (J. Newsome, R. Cardy and S. Puffer, eds.), Vol. 3, JAI Press, 1988.

## **Refereed Conference Proceedings**

Murthy, N. N., W. C. Benton and P. A. Rubin. Offsetting inventory cycles in a storage space constrained environment. *Proceedings of the 2000 Annual Meeting of the Decision Sciences Institute*, November 2000.

Tan, K. C., R. Narasimhan, P. A. Rubin and G. L. Ragatz. Minimizing tardiness with sequence dependent setup times: A comparative study of branch-and-bound, genetic search and simulated annealing. *Proceedings of the 1996 Annual Meeting of the Decision Sciences Institute*, November 1996.

Rubin, P. A. and W. C. Benton. Jointly constrained order quantities with incremental discounts. *Proceedings of the 1995 Annual Meeting of the Decision Sciences Institute*, November 1995.

Rubin, P. A. and W. C. Benton. A partial enumeration algorithm for static capacitated location problems. *Proceedings of the 1994 Annual Meeting of the Decision Sciences Institute*, November 1994.

Murthy, N. N., W. C. Benton and P. A. Rubin. Jointly constrained order quantities and the natural inventory cycle. *Proceedings of the 1994 Annual Meeting of the Decision Sciences Institute*, November 1994.

Benton, W. C. and P. A. Rubin. A heuristic for the single echelon dynamic capacitated facility location problem. *Proceedings of the 1993 Annual Meeting of the Decision Sciences Institute*, November 1993.

D'Itri, M. and P. A. Rubin. A heuristic solution procedure for scheduling cutting stock in a multi-period, multi-process facility with sequence dependent setups. *Proceedings of the 1993 Annual Meeting of the Decision Sciences Institute*, November 1993.

Rubin, P. A. and G. L. Ragatz. Scheduling in a sequence dependent setup environment with genetic search. *Proceedings of the 1992 Annual Meeting of the Decision Sciences Institute*, November 1992. (Finalist for best paper award.)

D'Itri, M. and P. A. Rubin. A formulation for scheduling cutting stock in a multi-period, multi-process facility with sequence dependent setups. *Proceedings of the 1992 Annual Meeting of the Decision Sciences Institute*, November 1992.

Rubin, P. A. Pathologies in linear programming models for the two group discriminant problem. *Proceedings of the 1990 Annual Meeting of the Decision Sciences Institute*, November 1990.

Rubin, P. A. Efficient heuristics for identification of outliers in discriminant analysis. *Proceedings of the 1989 Annual Meeting of the Decision Sciences Institute*, November 1989.

Rubin, P. A. Economic benefits of cooperation between purchaser and vendor. *Proceedings of the Nineteenth Annual Meeting of the Midwest Decision Sciences Institute*, May 1988.

Rubin, P. A. The maximize minimum distance formulation of the linear discriminant problem. *Proceedings of the 1987 Annual Meeting of the Decision Sciences Institute*, November 1987.

Rubin, P. A. Exponential smoothing of series with geometric trend: an experimental analysis. *Proceedings of the 1986 Annual Meeting of the Decision Sciences Institute*, November 1986.

Rubin, P. A. Forcing convexity in quadratic regression models. *Proceedings of the Seventeenth Annual Meeting of the Midwest Decision Sciences Institute*, April 1986.

Narasimhan, R., P. A. Rubin and S. A. Melnyk. Analyzing simulation output using time series intervention analysis. *Proceedings of the Seventeenth Annual Meeting of the American Institute for Decision Sciences*, November 1985.

Wagner, J. A. III, P. A. Rubin and T. J. Callahan. An intervention analysis of the productive efficacy of an equitable group incentive plan. *Proceedings of the Seventeenth Annual Meeting of the American Institute for Decision Sciences*, November 1985.

Rubin, P. A. A test of purchase decision rules for the case of stochastic prices. *Proceedings of the Sixteenth Annual Meeting of the American Institute for Decision Sciences*, November 1984.

Rubin, P. A. A comparison of three approaches to linear programming with multiple objectives. *Proceedings of the Midwest American Institute for Decision Sciences Conference*, April 1981.

## Technical Reports

Hoganson, H. M., D. C. Lothner and P. A. Rubin. Future market uncertainty: a case for short-rotation systems. In *Achieving Wood Energy Potential: Evidence in North-eastern Minnesota*, General Technical Report, North Central Forest Experiment Station.

## Presentations

Bai, L. and Rubin, P. A., Combinatorial Benders cuts for the minimum toll booth problem. 2007 Annual Meeting of the Decision Sciences Institute, Phoenix, November 2007.

Bai, L. and Rubin, P. A., Combinatorial Benders cuts for the minimum toll booth problem. 2007 INFORMS Annual Meeting, Seattle, November 2007.

Benton, W. C. and Rubin, P. A., Supplier managed inventories (SMI) and supply chain power. 2007 INFORMS Annual Meeting, Seattle, November 2007.

Rubin, P. A. Writing publishable articles – editors speak up. Panel session, 2004 Annual Meeting of the Decision Sciences Institute, Boston, November 2004.

Rubin, P. A. Writing publishable articles – editors speak up. Panel session, 2002 Annual Meeting of the Decision Sciences Institute, Washington, D.C., November 2003.

Rubin, P. A. Web-delivered graded assignments in the MBA core statistics course. 2002 Annual Meeting of the Decision Sciences Institute, San Diego, November 2002.

Rubin, P. A. Writing publishable articles – editors speak up. Panel session, 2002 Annual Meeting of the Decision Sciences Institute, San Diego, November 2002.

Rubin, P. A. You be the jury – a virtual tenure review. Panel session/workshop, 2002 Annual Meeting of the Decision Sciences Institute, San Diego, November 2002.

Rubin, P. A. Reviewing journal submissions – tips and guidelines for doing a high quality review. Panel session, 2000 Annual Meeting of the Decision Sciences Institute, Orlando, November 2000.

Rubin, P. A. Nontraditional approaches to classification and discrimination. Panel session, 1995 Annual Meeting of the Decision Sciences Institute, Boston, November 1995.

Rubin, P. A. and G. L. Ragatz. Minimal Tardiness Scheduling of a Single Processor via Genetic Search. INFORMS National Meeting, New Orleans, 1995.

Rubin, P. A. Jointly constrained order quantities with independent discounts. Colloquium, College of Administrative Science, Ohio State University, October 1993.

Rubin, P. A. Mathematical programming and alternative classification models. Invited paper, Multicriterion Decision Making and Artificial Intelligence cluster, TIMS/ORSA Joint National Meeting, Orlando, April 1992.

Rubin, P. A. Heuristic solution procedures for a mixed integer programming discriminant model. Workshop on Mathematical Programming Models for Discriminant Analysis, University of Florida, April 1989.

Rubin, P. A. Bias correction of Holt forecasts for series containing geometric trend. Proceedings of the Annual Meeting of the Decision Sciences Institute, November 1988.

Rubin, P. A. and J. A. Wagner III. Time series analysis for changes in productivity: some problems. Proceedings of the Seventeenth Annual Meeting of the American Institute for Decision Sciences, November 1985.

Rubin, P. A. Linear programming under uncertainty. A colloquium sponsored by the Department of Statistics and Probability, Michigan State University, January 1983.

Rubin, P. A. Implementation of a subgradient projection algorithm. TIMS/ORSA Joint National Conference, Detroit, 1982.

Rubin, P. A. Elements of nonlinear optimization. A joint mathematics colloquium of General Motors Institute and the University of Michigan at Flint, February 1980.

## **Miscellaneous**

Rubin, P. A., Optimizing with Piecewise Smooth Functions. In *Computational Economics and Finance* (Ed.: H. Varian), Springer-Verlag, 1996.

Rubin, P. A. A referee's lament. Invited guest column, Research Issues feature, *Decision Line* 23, 4, July 1992.

## **Honors**

Richard J. Lewis Quality of Excellence Award, The Eli Broad Graduate School of Management, Michigan State University, 2000.

Scholarly Achievement Award, Personnel/Human Resources Division, Academy of Management, 1989 (joint with J. Wagner and T. Callahan).

## **Research Grants**

Senior researcher, NSF grant 0085921: Investigation of a Model for Online Resource Creation and Sharing in Educational Settings.

Principal investigator under a contract from the U. S. Forest Service (Cooperative Agreement No. 23-82-07): Implementing Risk Analysis in Economic Evaluations of Short-Rotation Intensive Culture Forest Plantations.

Co-investigator under a contract with the City of Lansing (MI) for development of computer tools to aid in the selection of routes for trash collection.

## **Professional Service**

COIN-OR Strategic Leadership Board (2010-present)

AMPL User Advisory Board (2010-present)

Chair, Ad Hoc Committee on Web Site, Decision Sciences Institute (2009-present)

Associate Editor, *Decision Sciences*, 1998-2004.

Associate program chair, DSI National Meeting, November 2000.

Session organizer, DSI National Meeting, November 1995.

Session organizer, ORSA/TIMS National Meeting, October 1994.

Session organizer, TIMS/ORSA National Meeting, May 1993.

Track chair (Forecasting), Decision Sciences Institute 1991 Annual Meeting.

Referee for:

*Annals of Operations Research, Computers and Operations Research, Decision Sciences, Decision Support Systems, European Journal of Operational Research, IIE Transactions, International Journal of Information Technology & Decision Making, International Journal of Production Economics, International Transactions on Operational Research, Journal of Approximation Theory, Journal of Business Logistics, Journal of Global Optimization, Journal of Operations Management, Managerial and Decision Economics, Mathematics of Operations Research, Michigan Academician, Naval Research Logistics, Omega, OPSEARCH, IEEE Transactions on Pattern Analysis and Machine Intelligence.*

Reviewer of competitive grant proposals for the Michigan Department of Commerce (1985).

Reviewer of competitive grant proposals for the Natural Sciences and Engineering Research Council of Canada (1994).

Referee for regional and national DSI meetings.