

LUIS G. VARGAS

356 Mervis Hall
The Joseph M. Katz
Graduate School of Business
University of Pittsburgh
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EDUCATION

- 1979: Ph.D. in Social Systems Sciences, The Wharton School, University of Pennsylvania, Philadelphia, Pennsylvania.
1977: Ph.D. in Mathematics, Faculty of Mathematics, University of Sevilla, Sevilla, Spain.
1974: Master of Science in Mathematics and Operations Research, University of Granada, Granada, Spain.

PROFESSIONAL EXPERIENCE

- University of Pittsburgh
Joseph M.. Katz Graduate School of Business
1994 - Professor of Operations, Decision Sciences and AI
1984-1994: Associate Professor of Business Administration
1979-1984: Assistant Professor of Business Administration,
National Science Foundation
Industry/University Cooperative Research Centers Program
1985-1998: Evaluator of CISR and ABSIC, CMU.
University of Sevilla, Spain
Faculty of Mathematics, Statistics and Operations Research
1977-1978: Assistant Professor.
University of Granada, Spain
Faculty of Sciences, Mathematics and Operations Research
1974-1975: Lecturer

RESEARCH INTERESTS

Decision theory, the Analytic Hierarchy Process (AHP), artificial intelligence in manufacturing, scheduling, the use of artificial intelligence techniques for

scheduling surgical services, measurement of resource utilization, and design of Bayesian networks.

BOOKS

Economic, Political, Social & Technological Applications Of The Analytic Network Process (ANP): Benefits, Opportunities, Costs And Risks, with Thomas L. Saaty. Kluwer Academic Publishers, 2006, 2nd edition (2013).

Models, Methods, Concepts & Applications Of The Analytic Hierarchy Process, with Thomas L. Saaty. Boston : Kluwer Academic Publishers, 2001, 2nd edition 2012.

Decision Making in Economic, Political, Social and Technological Environments with the Analytic Hierarchy Process, with Thomas L. Saaty. The Analytic Hierarchy Process Series vol. VII. RWS Publications, 1994.

Prediction, Projection, and Forecasting: The Analytic Hierarchy Process, with Thomas L. Saaty, Boston, MA: Kluwer-Nijhoff Publishing, 1991.

The Logic of Priorities: Applications in Business, Energy, Health and Transportation, with Thomas L. Saaty. Boston, MA: Kluwer-Nijhoff Publishing, 1982.

REFEREED PUBLICATIONS

“Task Interdependence and Firm Performance in Outsourced Service Operations,” with N. Ramasubbu, J. Shang, J. May, Y. Tjader. *Manufacturing & Service Operations Management*, Articles in Advance, pp. 1-16, <https://doi.org/10.1287/msom.2018.0716>.

"Consistency in Positive Reciprocal Matrices: An Improvement in Measurement Methods," with J.I Pelaez and E.A. Martinez. Accepted 04/09/2018 in *IEEE Access*.

“A Personalized Approach of Patient–Health Care Provider Communication Regarding Colorectal Cancer Screening Options,” with M. Gabriela Sava, James G. Dolan, Jerrold H. May. *Medical Decision Making* (2018). <http://journals.sagepub.com/doi/full/10.1177/0272989X18763802>

“The Origin of Neural Firing and Synthesis in Making Comparisons,” with T.L. Saaty. *European Journal of Pure and Applied Mathematics* **10**, 4 (2017), 1-12.

“On prioritizing on-time arrivals in an outpatient clinic,” with Karolina J. Glowacka, Jerrold H. May, Rachel M. Goffman, Elizabeth K. May, Aleksandra Sasha Milicevic, Keri L. Rodriguez, Youxu C. Tjader and Dominic L. Vargas. *IISE Transactions on Healthcare Systems Engineering*. Published Online: 21 Apr 2017 (<http://dx.doi.org.pitt.idm.oclc.org/10.1080/24725579.2017.1302524>)

“Predictive Analytics Model for Healthcare Planning and Scheduling, with Shannon L. Harris and Jerrold H. May. *European Journal of Operational Research* **253**, 1 (2016)121-131.

“Group Decision Making with Dispersion in the Analytic Hierarchy Process,” with Natalie M. Scala, Jayant Rajgopal and Kim LaScola Needy. *Group Decision and Negotiation* **25**(2016)355–372 (DOI 10.1007/s10726-015-9445-7).

“Voting with Intensity of Preferences,” *International Journal of Information Technology & Decision Making* **15**, 4 (2016) 839-859.

“A Structured Scientific Solution to The Israeli-Palestinian Conflict: The Analytic Hierarchy Process Approach,” with Thomas L. Saaty and H. Jerome Zoffer. *Decision Analytics* **2**, 7 (2015)1-53.

“Impacts Of Supplier Hubris On Inventory Decisions And Green Manufacturing Endeavors,” with X. Lu, J. Shang, S. Wu, G.G. Hegde and D. Zhao. *European Journal of Operational Research* **245**, 1(2015)121-132.
<http://dx.doi.org/10.1016/j.ejor.2015.02.051>.

“Firm-level outsourcing decision making: A balanced scorecard-based Analytic Network Process model,” with Y. Tjader, J.H. May, J. Shang and N. Gao. *International Journal of Production Economics* **147** (2014) 614-623.

“General Linear Model Used to Predict Risk-Adjusted Length of Stay in Cardiac Intensive Care,” with David P. Strum. *Critical Care Medicine* **41**,12 (2013)A24.

“Mathematical Distributions As Models For Length Of Stay In Cardiac Intensive Care Units,” with David P. Strum. *Anesthesia & Analgesia* **116** (2013) 96.

“Classifying highly imbalanced ICU data,” with Y.F. Roumani, J.H. May and D.P. Strum. *Health Care Management Science* **16** (2013) 119-128.

“A New Methodology For Sensitivity And Stability Analysis Of Analytic Network Models,” with J.H. May, J. Shang and Y.C. Tjader. *European Journal of Operational Research* 224 (2013) 180-188.

“Outcomes of Operative Management of Appendicitis,” with Rajeev Dhupar, John Evankovich, Juan B. Ochoa, and Steven J. Hughes. *Surgical Infections* 13, 3 (2012). DOI 10.1089/sur.2011.104.

“Delayed operating room availability significantly impacts the total hospital costs of an urgent surgical procedure,” with Rajeev Dhupar, John Evankovich, John R. Klune, and Steven J. Hughes. *Surgery*, 150, 2, (2011) 299-305

“The Surgical Scheduling Problem: Current Research And Future Opportunities,” With J.H. May, W.E. Spangler and D.P. Strum. *Journal of Production and Operations Management* 20, 3, (2011) 392–405.

“The Possibility Of Group Choice: Pairwise Comparisons and Merging Functions,” with T. L. Saaty. *Social Choice and Welfare* 38, 3, (2012) 481-496.

“Offshore outsourcing decision making: A policy-maker's perspective,” with J. Shang and Y. Tjader. *European Journal of Operational Research* 207, 1 (2010) 434-444.

“Addressing with Brevity Criticisms of the Analytic Hierarchy Process,” with T.L. Saaty and R. Whitaker. *Journal of the Analytic Hierarchy Process* 1, 2 (2009).

“An exact test of the accuracy of binary classification models based on the probability distribution of the average rank,” with J.H. May. *Mathematical and Computer Modeling* 50 (2009) 975-983.

“Observations on Surgical Demand Time Series,” with I.C. Moore, D.P. Strum and D.J. Thompson, *Anesthesiology* 109 (2008) 408–416.

“An Optimization-based Approach for the Design of Bayesian Networks,” with A.M. Martinez-Rodriguez and J.H. May, *Mathematical and Computer Modeling* 48, 7–8 (2008) 1265-1278.

“Euclidean Centers: Computation and a MOLP Application,” with A. Arbel. *Mathematical and Computer Modeling* 48, 1–2 (2008) 197-205.

“The Consistency Index in Reciprocal Matrices: Comparison of Deterministic and Statistical Approaches.” *European Journal of Operational Research* 191, 2 (2007) 454-463.

“Conflict Identification And Reconciliation In A Collaborative Manufacturing Scheduling Task,” with C. Abreu, J.H. May and W. Spangler. *Int'l J'l of Information Technology and Decision Making* 7, 1 (2008) 183-197.

“Interval Judgments and Euclidean Centers,” with A. Arbel. *Mathematical and Computer Modeling* 46, 7-8 (2007) 976-984.

“Dispersion of Group Judgments,” with TL Saaty. . *Mathematical and Computer Modeling* 46, 7-8 (2007) 918-925.

“The Analytic Hierarchy Process: Can Wash Criteria be Ignored?” with T.L. Saaty *Int'l J'l of Management and Decision Making* Vol. 7, 2/3 (2006) 180-188.

“An Outpatient Segmentation Model: Estimation of Stakeholder Costs,” with DP Strum. *Journal of Clinical Investigative Medicine* 26, 6(2005) 364-367.

“The Possibility of Group Welfare Functions,” with T.L. Saaty. *Int'l J'l of Information Technology and Decision Making*, Vol. 4, 2 (2005) 1-10.

“Estimating Procedure Times for Surgeries by Determining Location Parameters for the Lognormal Model.” *Health Care Management Science* 7, (2004) 97-104. (with Spangler WE, Strum DP and May JH)

“The Allocation of Intangible Resources: The Analytic Hierarchy Process and Linear Programming,” *Socio-Economic Planning Sciences* 37, 3 (2003) 169-184. (with T.L. Saaty and K. Dellmann)

“Organizational Models of Telemedicine and Regional Telemedicine Networks,” *Telemedicine Journal and e-Health* 8, Spring (2002), 71-79.

“Dual procedure surgeries are well modeled by the lognormal distribution.” *Anesthesiology*, 96: A1150, 2002. (with Strum DP, May JH and Sampson AR).

“Dual procedure surgeries: factors affecting the variability of time estimates for dual procedure surgeries.” *Anesth Analg* 96: S107, 2003. (with Strum DP and May JH)

“Coding permutations may be reduced prior to modeling of dual procedure surgeries.” *Anesth Analg* 96: S106, 2003. (with Strum DP and May JH)

“Estimating Times of Surgeries with Two Component Procedures: Comparison of the LogNormal and Normal Modes.,” (accepted in *Anesthesiology*. 98, 1 (2003) 232-240. (with D.P. Strum, J.H. May, A.R. Sampson and W.E. Spangler).

“A Data Mining Approach to Characterizing Medical Code Usage Patters,” *J'l of Medical Systems* 26, 3 (June 2002) pp:255-275. (with J.H. May, W. E. Spangler, and D. P. Strum).

“Computer-based operational and decision support for surgical services,” *International Journal of Healthcare Technology Management*, Vol. 2, Nos.1/2/3/4 (2000) pp:15-36 (with May JH, Spangler W and Strum DP).

"A Minimal Cost Analysis Model for Utilization and Capacity Planning in Surgical Services," *International Journal of Healthcare Technology Management*, Vol. 2, Nos.1/2/3/4 (2000) pp:56-70. (with J.H. May, W. E. Spangler, and D. P. Strum).

"Surgeon and Type of Anesthesia Predicts Surgical Variability and Affects the Scheduling of Surgery," *Anesthesiology* 92(5):1454-66, 2000. (with J.H. May, A.. R. Sampson, and D. P. Strum).

"Fitting the Lognormal Distribution to Surgical Procedure Times," *Decision Sciences* 31, 1, (Winter 2000) pp:129-148. (with J.H. and D. P. Strum).

"Computer Assisted Operational and Decision Support for Surgical Services," *International Journal of Healthcare Technology Management* vol. 1, no.1/2, 1999. (with W. E. Spangler, D. P. Strum, L. G. Vargas).

“Individual Surgeon Variability Is A Multiplicative Function Of Surgical Time.” *Anesthesia & Analgesia* 88(2S) Supplement:48S, February 1999. (with Strum, D.P. Sampson, A.R. May, J.H.)

“Type Of Anesthesia Affects The Duration And Scheduling Of Surgical Procedures.” *Anesthesia & Analgesia* 88(2S) Supplement:47S, February 1999. (with Strum, D.P. Sampson, A.R. May, J.H.)

"A Data Mining Approach to Multiple Classification," *Journal of MIS*, 16:1 (Summer, 1999), (with J.H. May, W. E. Spangler, and D. P. Strum).

“Surgical Subspecialty Block Utilization and Capacity Planning: A Minimal Cost Analysis Model,” Anesthesiology 90, 4 (1999) 1176-85. (with J.H. May, and D.P. Strum.

“Improved utilization measures applied to the management of surgical subspecialty block time.” Anesthesia & Analgesia 86:S48, 1998. (with Strum DP and May JH)

“Diagnosis with Dependent Symptoms: Bayes Theorem and the Analytic Hierarchy Process,” with T.L. Saaty. Operations Research 46, 4 (1998) 491-502.

“Surgical Suite Utilization and Capacity Planning: A Minimal Cost Analysis Model,” with D.P. Strum, J.H. May and G. Bashein. Journal of Medical Systems 21, 5 (1997) 309-322

"Implementing Neural Firing: Towards a New Technology," with T.L. Saaty (Accepted for publication in the Mathematical and Computer Modeling 26, 4 (1997) 113-124.

“Design of RCSS: Resource Coordination Systems for Surgical Services using distributed communications,” with D.P. Strum and J.H. May. Journal of the American Medical Informatics Association (JAMIA) 4, 2 (1997) 125-135.

“A Neural Network Model for the Free-Ranging AGV Planning Problem,” with G. Hao and J.S. Shang. Journal of Intelligent Manufacturing 7, 3(1996), 217-227.

“SIMPSON: An Intelligent Assistant for Short-term Manufacturing Scheduling,” with J.H. May, European Journal of Operational Research 88 (1996) pp. 269-286.

“Modeling Shop Floor Expectations: A Multivariate Analysis Approach,” with J.H. May. Chapter 9 on The Impact of Emerging Technologies on Computer Science and Operations Research, S.G. Nash and A. Sofer (Eds.). Kluwer Academic Pub. 1995.

“A Neural Network Model for On-line Control of Flexible Manufacturing Systems,” with G. Hao and J.S. Shang. Int’l J’l of Production Research 33, 10 (1995) pp. 2835-2854.

“Representation of Visual Response to Neural Firing” with T.L. Saaty. Mathematical and Computer Modelling 18 (1993) pp. 17-23.

"A Model of Neural Impulse Firing and Synthesis," with T.L. Saaty. J'l. of Mathematical Psychology 37 (1993) pp. 200-219.

"Preference Programming and Preference Simulation: Robustness Issues in the AHP," with A. Arbel. European Journal of Operational Research 69 (1993) pp. 220-209.

"A Probabilistic Study of Preference Structures in the Analytic Hierarchy Process with Interval Judgments," with J. Moreno-Jimenez. Math. and Computer Modelling 17, 4-5 (1993).

"Why the AHP is not Like MultiAttribute Utility Theory," in Multiple Criteria Decision Support, P. Korhonen, A. Lewandowski, and J. Wallenius (eds.), Springer-Verlag #365, 1991.

"An Overview of the Analytic Hierarchy Process," EJOR 48, 1 (1990).

"Dirac Distributions and Threshold Firing in Neural Networks," with T.L. Saaty. Applied Mathematics Letters, April 1989.

"Formulation of Business Strategy for a Financial Institution in a Developing Country," with J. Bernat Roura-Agusti. in The Analytic Hierarchy Process: Applications and Studies, B.L. Golden, E.A. Wasil and P.T. Harker (eds.), pp. 251-265. Springer-Verlag, 1989.

"The Theory of Ratio Scale Estimation: Saaty's Analytic Hierarchy Process," with P.T. Harker, Management Science 33, 11 (1987) pp. 1383-1403.

"Nuclear Balance and The Parity Index: The Role of Intangibles in Decisions," with A. Arbel and T.L. Saaty. IEEE Transactions in Systems, Man and Cybernetics. September 1987. Also a chapter in Conflict Resolution by T.L. Saaty and J.M. Alexander, Plenum Press, 1989.

"The Analytic Hierarchy Process: Theoretical Developments and Some Applications," Guest Editor with R.W. Saaty. Mathematical Modelling 9, No. 3-5, 1987.

"Priority Theory and Utility Theory," Mathematical Modelling 9, No. 5, 1987.

"Uncertainty and Rank Order in the Analytic Hierarchy Process," with T.L. Saaty, European Journal of Operational Research 32 (1987) 107-117.

"Stimulus-Response with Reciprocal Kernels: A Model of Neural Networks," with T.L. Saaty, Journal of Mathematical Psychology 31, 1 (1987) 93-103.

"Utility Theory and Reciprocal Pairwise Comparisons: The Eigenvector Method," Journal of Socio-Economic Planning Sciences 20, 6 (1986) 387-391.

"Reply to Belton's and Gear's Comments on The Legitimacy of Rank Reversal," OMEGA 13, 4 (1985).

"Modeling Behavior in Competition: The Analytic Hierarchy Process," with T.L. Saaty, Mathematical Modelling 16 (1985) 49-92.

"Inconsistency and Rank Preservation," with T.L. Saaty. Journal of Mathematical Psychology 28, 2 (1984) 205-214.

"The Legitimacy of Rank Reversal," with T.L. Saaty. OMEGA 12, 5 (1985) 513-516.

"Comparison of Eigenvalue, Logarithmic Least Squares and Least Squares Methods in Estimating Ratios," with T.L. Saaty. Mathematical Modeling 5, 2 (1984).

"Analysis of Sensitivity of Reciprocal Matrices," Applied Mathematics and Computation 12 (1983) 301-320.

"Assessing Attribute Weights by Ratios," with T.L. Saaty and R.E. Wendell. OMEGA 11, 1 (1983) 9-13.

"Prediction and the Analytic Hierarchy Process," Special Section on Modeling and Social Decision Problems in Mathematics and Computers in Simulation 25 (1983) 156-167.

"Prospects for the Middle East: Is a Peaceful Settlement Attainable?" The European Journal of Operational Research 14 (1983) 169-192. Also a chapter in Conflict Resolution by T.L. Saaty and J.M. Alexander, Plenum Press, 1989.

"Reciprocal Matrices with Random Coefficients," Mathematical Modelling 3 (1982) 69-81.

"High Level Decisions: A Lesson from the Iran Hostage Rescue Operation," with T.L. Saaty and A. Barzilai. Decision Sciences 13 (1982) 185-206.

"The Analytic Hierarchy Process and Multicriterion Decision Making," with J.J. Dougherty III. American Journal of Mathematical and Management Sciences 2 (1982).

"Financial versus Intangible Factors in Vehicle Fleet Buying/Leasing Decisions," with T.L. Saaty. Industrial Marketing Management 10 (1981) 1-10.

"A Note on the Eigenvalue Consistency Index," Applied Mathematics and Computation 7 (1980) 195-203.

"Hierarchical Analysis of Behavior in Competition: Prediction in Chess," with T.L. Saaty. Behavioral Science 25 (1980) 180-191.

"Estimating Technological Coefficients by the Analytic Hierarchy Process," with T.L. Saaty. Socio-Economic Planning Sciences 13 (1979) 333-336.

PROCEEDINGS

Dispersion of Group Judgments: The geometric Expected value operator, with T.L. Saaty. Proceedings of the Ninth INFORMS Computing (ICS) Society conference, January 5-7, 2005. (Not all papers presented here were published. This was a refereed proceedings).

Geometric Expected Value Operator: A measure of Dispersion for the Judgments of a Group, with T.L. Saaty. Proceedings of the MultiCriteria Decision Making Conference, Whistler, B.C. Canada, August 6-11, 2004.

"Probabilistic Considerations of the Consistency Index in Reciprocal Matrices," Proceedings of the 6th International Symposium on the AHP, August 2-4, 2001, Berne, Switzerland.

"Using Data Mining Techniques to Characterize Diagnostic and Procedural Patterns" (with J. May, D. Strum and L. Vargas), Association for Information Systems 2001 Americas Conference, Boston, Mass., August 3-5, 2001.

"Discovering change in time series with neural nets." (with AM Martinez and JH May) *Proceedings of the Production and Operations Management Society International Conference*, Sevilla, Spain, August, 2000.

“The impact of data characteristics on the selection of data mining methods for predictive classification.” (with May JH, Spangler WF and Strum DP). Proceedings of the Association for Information Services Conference, Long Beach, California, August 10-12, 2000.

“Identifying and modeling relationships between diagnostic and procedure codes,” Proceedings of the Fourth Americas Conference on Information Systems, Baltimore, MD, August 1998, 220-222 (with May, JH, Spangler, WE, and Strum, DP)

“A Model to Deal with Uncertainty in Ellsberg's Paradox,” with J.M. Moreno-Jimenez. Proceedings of the 4th Int'l Symposium on the AHP, Vancouver, July 1996.

"A Neural Network Approach for the Real Time Control of A FMS," with Gang Hao and Jan Shang. Proceedings of the 27th Annual Hawaii Int'l Conference in System Sciences, 1994

"MULTEX: A Multiple Expert/DSS System for Shop Floor Scheduling - One Year Later," with J. H. May, T. Morton and D. Pentico. Proceedings of the Northeast DSI Conference, Boston, MA, April 1992, 356-358.

"MULTEX: A Multiple Expert/DSS System for Shop Floor Scheduling," with J. H. May. Proceedings of the Northeast DSI Conference, April 1991, 372-374.

"The Analytic Hierarchy Process with Interval Judgments," with A. Arbel. Proceedings of the Int'l Symposium on Multicriteria Decision Making, (August 5-8, 1990)

"Non-Transitive Priority Theory," Proceedings of the Modeling and Simulation Conference, University of Pittsburgh, April 23-24, 1987.

"Preference Relations, Transitivity and the Reciprocal Property," Mathematical Modelling in Science and Technology, Proceedings of the Fifth ICM, July 29-31, 1985. University of California, Berkeley. X.J.R. Avula, G. Leitmann, C.D. Mote, Jr. and E.Y. Rodin (Eds.). Pergamon Press, New York, 1986.

"Prediction and the Analytic Hierarchy Process," Proceedings of the 10th IMACS World Congress, August, 1982.

JOURNALS EDITED

Mathematical Modeling 9, No. 3-5, 1987. Guest Editor with R.W. Saaty.
European Journal of Operational Research 48, 1, 1990. Guest Editor with R.Wittaker.
Mathematical and Computer Modeling 17, 1993. Guest editor with F. Zahedi.
Mathematical and Computer Modeling, 2007. Guest Editor with R. Whitaker.

EDITORIAL POSITIONS

Area Editor. Journal of Multicriteria Decision Analysis

DOCTORAL STUDENT DISSERTATIONS

Chaired:

Gang Hao (1993)
Susan Johnson (1997)
Alia Stanciu (2009)
Tammy Tjader (2009)
Yazan Roumani (2013)
Gabriela Sava (2016)

Major Supervision:

Aman Kahn, GSPIA (1979)
Geoff Egekwu, University of Nebraska, Ind. Eng. (1992)
Gary Gilbert (1993)
Sid Snitkin (1996)

Committee Member:

Jose Arreola-Contreras (1986)
S. Raghunathan (1990)
Dolphi Abraham (1993)
Terry Huston (1993)
Atishprasad Sinha (1993)
Rahul De (1994)
Mordechai Gal-Or (1996)

Jose Cruz (1997)
Stanko Racic (2005)
Marcel Minutolo (2009)
Shannon Harris (2016)

GRANTS AND CONTRACTS

- MULTEX a (Multiple Expert)/DSS Prototype for Nuclear Fuel Tube Shop Floor Scheduling. Westinghouse Specialty Metals, Phase I: \$60K (with T.E. Morton, S. Kekre - GSIA/CMU, J.H. May - KGSB) Phase II: \$30K (with J.H. May - KGSB)
- "Same Day Surgical Service Simulation," Glaxo Pharmaceuticals, \$10K (with J.H. May).
- Artificial Intelligence Applications Research for Global Grid Telemedicine, Intelligent Electronic Mail Processor and Intelligent Image Analysis. Dept. of the Army, TATRC, DAMD17-98-M-9012, \$89.5K (with J.H. May – KGSB).
- Global Grid Telemedicine System: Expert Consult Manager. Dept. of the Army, TATRC, DAMD17-99-1-9575, \$300K (with J.H. May – KGSB).
- Constraint-based Surgical Scheduling: Modeling the Effect of Constraints on Schedule and Institutional Outcomes (with David P. Strum). The Physicians' Services Incorporated Foundation, Grant# 04-27, \$54,500, 2004-2006.

MEMBERSHIPS

AAAI: American Association for Artificial Intelligence
INFORMS: The Institute for Operations Research and
Management Science

HONORS & ACTIVITIES

Outstanding Professor of the Year Award, July 1984, Joseph M. Katz Graduate School of Business, University of Pittsburgh.

Juan March Foundation Scholarship, Madrid, Spain (1976-1978) to the Wharton School, University of Pennsylvania.

Chairman of the 2nd International Symposium on the Analytic Hierarchy Process (ISAHP-II) held in Pittsburgh, August 11-14, 1991 at the Joseph M. Katz Graduate School of Business.

COURSES TAUGHT

Doctoral: Stochastic Processes, Statistical Decision Theory, Knowledge-based Expert Systems, Artificial Intelligence, Advanced Topics in AI, Graph Theory, Multivariate Statistics, Decision Theory.

MBA: Statistical Analysis, Uncertainty, Prediction and Quality Control, Operations Management, Optimization, Applied Probability Models, Intelligent Management Systems, Introduction to AI Programming (Lisp), Expert Systems, Forecasting.

EMBA: Statistical Analysis, Uncertainty, Prediction and Quality Control; Decision Technologies in Manufacturing and Service Industry; Forecasting.

Undergraduate: Probability and Statistics for Management, Management Science, Operations Management, Revenue Management.

REFERENCES

Furnished upon request.