

Curriculum Vitae

ROBERT T. CLEMEN

4/26/2012

CONTACT INFORMATION

Fuqua School of Business
Duke University, Box 90120
Durham, NC 27708-0120
E-mail: clemen -at- duke -dot- edu
WWW: <http://www.duke.edu/~clemen>

EDUCATION

PhD in Business: Indiana University, Bloomington, IN
Major Field: Quantitative Business Analysis
Dissertation: *Modeling Dependent Information: A Bayesian Approach*
Advisor: Robert L. Winkler
Degree awarded: August, 1984

MBA: University of Colorado, Colorado Springs, CO
Major Field: Finance
Degree awarded: August, 1981

University of Alaska, Fairbanks, AK
Major Field: Anthropology
Graduate Study, 1974-1975

BA: Stanford University, Palo Alto, CA
Major Field: Anthropology
Degree awarded: June, 1973

PROFESSIONAL EXPERIENCE

Professor Emeritus of Decision Sciences, Duke University.
(Member of Duke faculty since 1995, tenure granted in 2000)

Previous positions:

1994-1997. Senior Scientist, Applied Decision Analysis, Inc., Menlo Park, CA 94025
1993-1995. Senior Researcher, Decision Research, Eugene, OR 97401
1990-1995. Associate Professor of Decision Sciences (with tenure) and Robert C. Braddock
Research Associate, University of Oregon
1989-1990. Visiting Associate Professor, Fuqua School of Business, Duke University
1989-1990. Associate Professor of Decision Sciences (with tenure), University of Oregon
1984-1989. Assistant Professor of Decision Sciences, University of Oregon
1981-1983. Associate Instructor, School of Business, Indiana University
1981. Research Assistant, University of Colorado, Colorado Springs
1976-1980. Holubar Mountaineering, Ltd., Boulder, CO. Retail Sales and Retail Store
Management

AWARDS AND HONORS

PUBLICATION AWARDS

Award for Best Decision Analysis Publication in 2005. Awarded by the Decision Analysis Society (INFORMS), for Fox, C. R., & Clemen, R. T. (2005). Subjective probability assessment in decision analysis: Partition dependence and bias toward the ignorance prior. *Management Science* 51, 1417-1432.

Award for Best Decision Analysis Publication in 1991. Awarded by the Operations Research Society of America, Decision Analysis Special Interest Group, for *Making Hard Decisions: An Introduction to Decision Analysis*, Boston, MA: PWS-Kent, 1991

Award for Best Decision Analysis Publication in 1990. Awarded by the Operations Research Society of America, Decision Analysis Special Interest Group, for Clemen, R. T., & Winkler, R. L. (1990). Unanimity and compromise among probability forecasters. *Management Science* 36, 767-779.

Award for Best Forecasting Publication in *International Journal of Forecasting*, 1985-1991. Awarded by the International Institute of Forecasting for Clemen, R. T. (1989). Combining forecasts: A review and annotated bibliography (with discussion). *International Journal of Forecasting* 5, 559-583.

TEACHING AWARDS

Page Prize for Sustainability Curriculum, Honorable Mention, 2010

Outstanding Professor, Fuqua Global Executive MBA, 2000

Outstanding Professor, Honorable Mention, Fuqua Global Executive MBA, 1997, 2001.

Outstanding Teacher Award, MBA Program, U. of Oregon, 1987

OTHER AWARDS

John Edwards Fellowship, Indiana University, 1983-1984

Outstanding Finance Graduate, University of Colorado, Colorado Springs, 1981-1982

Outstanding MBA Graduate, University of Colorado, Colorado Springs, 1981-1982

Outstanding Alumnus, University of Colorado, Colorado Springs, 1997

RESEARCH AND SCHOLARSHIP

GRANTS

Grant for \$78,518 from the National Science Foundation for research on “Model-based Methods for Debiasing Individual Probability Assessments: Theory and Experiments,” with Benjamin Hobbs and Melissa Kenney, 2010-2012.

Grant for \$114,741 from the National Science Foundation for research on “Method vs. Preference Learning in Decision Analytic Preference Assessment,” with Richard Anderson, 2009-2011.

Grant for \$217,000 from the National Science Foundation for research on “Prescriptive Models for Improving Subjective Probability Judgments,” 2003-2007.

- Grant for \$85,000 from National Science Foundation for research on “Combining Expert Judgments for Environmental Risk Analysis,” 2000-2003. In collaboration with R. Cooke, J. Evans, A. Gelman, and J. Hammitt.
- Grant for \$10,000 from Water Resources Research Institute for decision analytic modeling of the Neuse River, 1997-1998, with Kenneth Reckhow.
- Grant for \$98,000 from National Science Foundation for continued research on “Dependence Assessment for Decision and Risk Analysis,” 1995-1997. In collaboration with R.L. Winkler.
- Grant for \$47,000 from the National Science Foundation for research on “Dependence Assessment for Decision and Risk Analysis,” 1994-1995. In collaboration with R.L. Winkler.
- Grant for \$287,000 from the National Science Foundation for research on “Decision-Making Curriculum Materials for Secondary Education,” 1992-1994, with Robin Gregory and Don MacGregor.
- Grant for \$133,693 from the National Science Foundation for research on “Flexible Modeling and Analysis for Information Aggregation,” 1991-1994. In collaboration with R.L. Winkler.
- Grant for \$7500 from National Institute of Dispute Resolution for development of case materials on international negotiations, 1991-1992, with Richard M. Steers.
- Grant for \$6,540 from the National Science Foundation for doctoral dissertation research by William J. Burns on the structural modeling of risk perception, 1989, with W.J. Burns.
- Development grant from the University of Oregon for research on group decision making, 1988, with J. Orbell and R. Mauro.
- Grant for \$268,000 from the National Science Foundation for research on “Information Aggregation: Models and Issues,” 1986-1989, with R.L. Winkler.

BOOKS

- Clemen, R. T., & Reilly, T. (2001). *Making hard decisions with DecisionTools*. Pacific Grove, CA: Duxbury Press.
- Clemen, R. T. (1996). *Making hard decisions: An introduction to decision analysis, 2nd Edition*. Belmont, CA: Duxbury Press.
- Gregory, R., Clemen, R. T., Satterfield, T., & Stone, T. (1996). *Creative Decisionmaking: A Curriculum Materials Guide for Secondary-School Educators*. Eugene, OR: Decision Research.
- Clemen, R. T. (1991). *Making hard decisions: An introduction to decision analysis*. Boston, MA: PWS-Kent Publishing Co.

REFEREED JOURNAL ARTICLES AND BOOK CHAPTERS

- Page, L., Clemen, R. (2012). Do prediction markets produce well calibrated probability forecasts? *Economic Journal*, forthcoming.
- Clemen, R. T., & Smith, J. (2009). On the choice of baselines in multiattribute portfolio analysis: A cautionary note. *Decision Analysis* 6, 256-262.

- Poland, B., Hodge, F. L., Khan, A., Clemen, R. T., Wagner, J. A., Dykstra, K., Krishna, R. (2009). The clinical utility index as a practical multiattribute approach to drug development decisions. *Clinical Pharmacology and Therapeutics* 86, 105-108.
- Clemen, R. T. (2008). Improving and measuring the effectiveness of decision analysis: Linking decision analysis and behavioral decision research. Book chapter, In: T. Kugler, J. C. Smith, T. Connolly, and Y.-J. Son (Eds.) *Decision modeling and behavior in complex and uncertain environments*. New York: Springer, 3-31.
- Clemen, R. T. (2008). Comment on Cooke's classical method. *Reliability Engineering and System Safety* 93, 760-765.
- Clemen, R. T., & Ulu, C. (2008). Interior additivity and subjective probability assessment of continuous variables. *Management Science* 54, 835-851.
- Clemen, R. T., & Winkler, R. L. (2007). Aggregating probability distributions. In: W. Edwards, R. Miles, & D. von Winterfeldt (Eds.) *Advances in Decision Analysis* (pp. 154-176). Cambridge, UK: Cambridge University Press.
- Fox, C. R., & Clemen, R. T. (2005). Subjective probability assessment in decision analysis: Partition dependence and bias toward the ignorance prior. *Management Science* 51, 1417-1432.
- Winkler, R. L., & Clemen, R. T. (2004). Multiple experts vs. multiple methods: Combining correlation assessments. *Decision Analysis* 1, 167-176.
- Clemen, R. T. (2002). Incentive contracts and strictly proper scoring rules. *Test* 11, 195-217.
- Clemen, R. T. (2001). Naturalistic decision making and decision analysis, *Journal of Behavioral Decision Making* 14, 359-361.
- Clemen, R. T., & Kwit, R. (2001). The value of decision analysis at Eastman Kodak Company, 1990-1999. *Interfaces* 31 (Sept-Oct), 74-92.
- Clemen, R. T. (2001). Simple versus complex methods. *International Journal of Forecasting* 17, 549-550.
- Clemen, R. T., & Lacke, C. J. (2001). Analysis of colorectal cancer screening regimens. *Health Care Management Science* 4, 257-267.
- Borsuk, M., Clemen, R. T., Maguire, L., & Reckhow, K. (2001). Stakeholder values and scientific modeling in the Neuse River watershed. *Group Decision and Negotiation* 10, 355-373.
- Clemen, R. T., Fischer, G. W., & Winkler, R. L. (2000). Assessing dependence: Some experimental results. *Management Science* 46, 1100-1115.
- Clemen, R., Gregory, R. (2000) Preparing adult students to be better decision makers. In: I. Gal (Ed.) *Adult numeracy education: Theory, research, practice* (pp. 73-86). Cresskill, NJ: Hampton Press.
- Sendi, P. P., & Clemen, R. T. (1999). Sensitivity analysis on a chance node with more than two branches. *Medical Decision Making* 19, 499-502.
- Clemen, R. T., & Winkler, R. L. (1999). Combining probability distributions from experts in risk analysis. *Risk Analysis* 19, 187-203.

- Clemen, R. T., & Reilly, T. (1999). Correlations and copulas for decision and risk analysis. *Management Science* 45, 208-224.
- Clemen, R. T. (1998). System models for decision making. In: R. C. Dorf (Ed.) *The Technology Management Handbook* (p 9-6 through 9-11). CRC Press, Boca Raton, FL.
- Jouini, M. N., & Clemen, R. T. (1996). Copula models for aggregating expert opinions. *Operations Research* 44, 444-457.
- Clemen, R. T., Jones, S. K., & Winkler, R. L. (1996). Aggregating forecasts: An empirical evaluation of some Bayesian methods. In: D. Berry, K. Chaloner, & J. Geweke (Eds.) *Bayesian Statistics and Econometrics: Essays in Honor of Arnold Zellner* (pp. 3-13). New York: Wiley.
- Clemen, R. T., Murphy, A. H., & Winkler, R. L. (1995). Screening probability forecasts: Contrasts between choosing and combining. *International Journal of Forecasting* 11, 133-146.
- Miklas, M., Norwine, J., DeWispelare, A., Herren, L., & Clemen, R. (1995). Future climate at Yucca Mountain, Nevada proposed high-level radioactive waste repository. *Global Environmental Change* 5, 221-234.
- DeWispelare, A., Herren, L., & Clemen, R. T. (1995). The use of probability elicitation in the high-level nuclear waste regulation program. *International Journal of Forecasting* 11, 5-24.
- Frisch, D., & Clemen, R. T. (1994). Beyond expected utility: Rethinking behavioral decision research. *Psychological Bulletin* 116, 46-54.
- Burns, W. J., & Clemen, R. T. (1993). Covariance structure models and influence diagrams. *Management Science* 39, 816-834.
- Clemen, R. T. (1993). Comment on 'A randomization rule for selecting forecasts.' *Operations Research* 41, 801-802.
- Clemen, R. T., & Winkler, R. L. (1993). Aggregating point estimates: A flexible modeling approach. *Management Science* 39, 501-515.
- Miller, C. M., Clemen, R. T., & Winkler, R. L. (1992). The effect of nonstationarity on combined forecasts. *International Journal of Forecasting* 7, 515-529.
- Winkler, R. L., & Clemen, R. T. (1992). Sensitivity of weights in combining forecasts. *Operations Research* 40, 609-614.
- Clemen, R. T., & Winkler, R. L. (1990). Unanimity and compromise among probability forecasters. *Management Science* 36, 767-779.
- Clemen, R. T., & Murphy, A. H. (1990). The expected value of frequency calibration. *Organizational Behavior and Human Decision Processes* 46, 102-117.
- Clemen, R. T. (1989). Combining forecasts: A review and annotated bibliography (with discussion). *International Journal of Forecasting* 5, 559-583.
- Clemen, R. T., & Guerard, J. B. (1989). Econometric GNP forecasts: Incremental information relative to naive extrapolation. *International Journal of Forecasting* 5, 417-426.
- Guerard, J. B., & Clemen, R. T. (1989). Collinearity and the use of latent root regression for combining GNP forecasts. *Journal of Forecasting* 8, 231-238.

- Murphy, A. H., Chen, Y.-S., & Clemen, R. T. (1988). Statistical analysis of interrelationships between objective and subjective temperature forecasts. *Monthly Weather Review* 116, 2121-2131.
- Clemen, R. T., & Winkler, R. L. (1987). Calibrating and combining precipitation probability forecasts. In: R. Viertl (Ed.) *Probability and Bayesian Statistics* (pp. 97-110). New York: Plenum.
- Clemen, R. T. (1987). Combining overlapping information. *Management Science* 33, 373-380.
- Clemen, R. T. (1986b). Linear constraints and the efficiency of combined forecasts. *Journal of Forecasting* 5, 31-38.
- Clemen, R. T., & Murphy, A. H. (1986b). Objective and subjective precipitation probability forecasts: Statistical analysis of some interrelationships. *Weather and Forecasting* 1, 56-65.
- Clemen, R. T., & Murphy, A. H. (1986a). Objective and subjective precipitation probability forecasts: Some methods for improving forecast quality. *Weather and Forecasting* 1, 213-218.
- Clemen, Robert T. (1986a). Calibration and the aggregation of probabilities. *Management Science* 32, 312-314.
- Clemen, R. T., & Winkler, R. L. (1986). Combining economic forecasts. *Journal of Business and Economic Statistics* 4, 39-46.
- Clemen, R. T. (1985). Extraneous expert information. *Journal of Forecasting* 4, 329-348.
- Clemen, R. T., & R. L. Winkler. (1985). Limits for the precision and value of information from dependent sources. *Operations Research* 33, 427-442.

WORKING PAPERS AND RESEARCH IN PROGRESS

- Kenney, M., & Clemen, R. T., Keeney, R. L., Reckhow, K. H. (2010). Choosing criteria for lake pollution mitigation decisions. Draft.
- Kenny, M., Reckhow, K., Allen, T., Arhonditsis, G. B., Clemen, R. T. (2007). Use of predictive models to select nutrient criteria variables for North Carolina lakes and reservoirs. Draft.
- See, K. E., & Clemen, R. T. (2006). Psychological and organizational factors influencing decision process innovation: The role of perceived threat to managerial power. Draft.
- Clemen, R. T., & Lichtendahl, K. C. (2002). Debiasing expert overconfidence: A Bayesian calibration model. Draft.

OTHER PUBLICATIONS

- National Research Council (2007). *Models in Environmental Regulatory Decision Making*. Washington, DC: National Academies Press.
- Clemen, R. T. (2004). Assessing risk tolerance. *Decision Analysis Society Newsletter* 23 (March), 4-5.
- Clemen, R. T. (2001). Assessing 10-50-90s: A surprise. *Decision Analysis Society Newsletter* 20, (April), 2,15.

- A. DeWispelare, Clemen, R., Herren, L., & Bonano, E. (1994). Background report on the use and elicitation of expert judgment. San Antonio, TX: Center for Nuclear Waste Regulatory Analyses. Report CNWRA 94-019.
- Clemen, R. T. (1994). On value-focused thinking. *Sloan Management Review* 36 (1), 5.
- Clemen, R. T. (1993). Class seeks decision-based solutions to homelessness. *Eugene Register-Guard*, April 22, 1993.
- Clemen, R. T. (1993). Combining forecasts: Progress since 1989. *The Forum, Newsletter of the International Association of Business Forecasting and the International Institute of Forecasters* 6(3), 11.
- A. DeWispelare, Clemen, R., Herren, L., & Miklas, M. (1993). Expert elicitation of future climate in the Yucca Mountain vicinity: Iterative performance assessment phase 2.5. San Antonio, TX: Center for Nuclear Waste Regulatory Analyses. Report CNWRA 93-016.
- Clemen, R. T., Murphy, A. H., & Winkler, R. L. (1992). Combining versus choosing: Implications for forecast evaluation." *Preprints of the Twelfth Conference on Probability and Statistics in the Atmospheric Sciences*. Boston: American Meteorological Society, 1992, J50-J57. Also in *Preprints of the Fifth International Meeting on Statistical Climatology*. Toronto, 1992, J50-J57.
- Clemen, R. T. (1992). Combining forecasts: An overview. *Preprints of the Twelfth Conference on Probability and Statistics in the Atmospheric Sciences*. Boston: American Meteorological Society, 1992, J43-J44. Also in *Preprints of the Fifth International Meeting on Statistical Climatology*. Toronto, 1992, J43-J44.
- Clemen, R. T. (1989). Decision making with the Macintosh. *Wheels for the Mind*, 5(1), 48-52.
- Clemen, R. T. (1976). Prehistoric social organization on Black Mesa. In: G. Gumerman, R. Euler (Eds.) *Papers on the Archaeology of Black Mesa, Arizona* (pp. 113-136). Carbondale, IL: SIU Press.

TEACHING

COURSES DEVELOPED AND TAUGHT

Duke University

- Modeling and Analysis for Environmental Sustainability* (MBA). Addresses analytical and modeling tools that managers can use to evaluate investments in environmentally-related activities. (Page Prize for Sustainability Curriculum, Honorable Mention, 2010)
- Decision Analysis* (MBA). Redesigned course to emphasize Excel modeling skills. Covers model construction and design, analysis strategies, model critique. Modeling assignments include analysis of probabilities, optimal arbitrage of probability forecasts, multiple objectives, negotiation analysis, competitive modeling and analysis, real options.
- Prescriptive Models for Decision Analysis* (PhD). A course on basic tools, concepts, and mathematics of decision analysis.
- Decision Models* (Cross-Continent, Global Executive, and Weekend Executive MBA). An introductory survey course on quantitative methods for executive MBA students. Two versions of this course were developed specifically for Fuqua's Global Executive and Cross-Continent MBA programs, each one involving intense in-residence instruction and distance

learning. The course covers basics of decision analysis, risk analysis, and optimization, and focuses on using Excel and a variety of analytical add-ins as the calculation environment.

University of Oregon

Applied Decision Analysis (Undergraduate and MBA). Covers fundamentals of modern decision analysis. problem structuring, multiple objectives, uncertainty in decision making, results from behavioral decision theory, creativity. Emphasizes application of techniques to real-world problems, including a term project in which students analyze a personal decision.

Bayesian Inference and Decision Theory (PhD). Subjective probability, Bayesian statistics, natural conjugate distributions, expected utility, sequential decision problems. Emphasis is on tools for constructing formal models of decision making to be used as a normative basis in research.

Advanced Topics in Decision Analysis (PhD). Current topics in decision analysis and decision theory. Covers a wide variety of topics such as generalized utility, numerical methods in decision analysis, decision problem structuring, issues in probabilistic risk analysis, aggregation of expert information.

Decision Analysis for Negotiations (MBA). A decision-analysis approach to negotiations. Emphasizes understanding values and objectives of parties in multiple-stakeholder negotiations and the use of values as a basis for creating Pareto-superior agreements. Uses cases and role-play simulations to provide students with hands-on negotiation experience. Issues in international negotiations and the use of information from experts in multiple-stakeholder decision making.

Forecasting for Management and Decision Making (MBA). Survey of forecasting methods. Covers use of regression approaches, simple extrapolation techniques (including a brief exposure to ARIMA models), judgmental forecasting, combining forecasts, scenarios, and the use of forecasts in decision-making situations.

Statistics for Research (PhD). Introductory course on statistical fundamentals for PhD students. Emphasizes selection of appropriate statistical procedures and interpretation of results for research purposes.

Other courses taught: *Basic Statistics* (Undergraduate and MBA)

EXECUTIVE EDUCATION

Duke University

Academic Program Director and Instructor for OSRAM/Sylvania Manufacturing Management Institute. 1997.

On-Site Academic Program Director and Instructor for Siemens S3 Program, 1998.

PHD COMMITTEES

*Committee Chair or Co-Chair

Kenney, Melissa A. (2007) Which Nutrient Criteria Should States and Tribes Choose to Determine Waterbody Impairment? Using Science and Judgments to Inform Decision Making. Nicholas School of Environment, Duke University.

- *Lichtendahl, Kenneth C., Jr. (2005) Bayesian Nonparametric Combination of Multivariate Expert Forecasts. Fuqua School of Business, Duke University.
- Borsuk, Mark. (2001) A Bayesian Hierarchical Model to Predict Benthic Oxygen Demand from Organic Matter Loading in Estuaries and Coastal Zones. Nicholas School of Environment, Duke University.
- Tardella, Luca. (1998) Some Topics in Bayesian Methodology. Institute of Statistics and Decision Sciences, Duke University.
- Huerta-Gomez, Gabriel. (1998) Bayesian Analysis of Latent Structure in Time Series Models. Institute of Statistics and Decision Sciences, Duke University.
- Lacke, Chris. (1998). Decision Analytic Modeling of Colorectal Cancer Screening Policies. Operations Research Program, North Carolina State University.
- *Reilly, Terrence B. (1995). Identification Rules for the Measurement Portion of Structural Equation Models. Department of Decision Sciences, University of Oregon.
- Richardson, Keith W. (1995). Study I: Investigation of Ambiguity and Risk Preferences and Study II: The Effect of Public Versus Private Decision Environment on the Use of the Present Value Investment Criterion. Department of Accounting, University of Oregon.
- *MacKenzie, George R. (1994). Approximately Maximum-Entropy Multivariate Distributions with Specified Marginals and Pairwise Correlations. Department of Decision Sciences, University of Oregon.
- Kropp, Frederic G. (1994). Changing Values: Forecasting Long-Term Discontinuous Changes in Values and the Implications for Marketing. Department of Marketing, University of Oregon.
- Robinson, William N. (1993). Automating Negotiated Design Integration: Formal Representations and Algorithms for Collaborative Design. Department of Computer and Information Sciences, University of Oregon.
- Bowie, Susan W. (1992). The Effects of Functional Integration, Comprehensiveness, and Agreement on the Strategic Performance of Crossfunctional Groups in High-Velocity Environments. Department of Management, University of Oregon.
- Brozovsky, Paul V. (1992). A Comparison of Procedures for the Analysis of the Pretest-Posttest Experimental Design Involving Intact Groups. Department of Decision Sciences, University of Oregon.
- Jones, Steven K. (1992). Evaluating the Structure and Process of Real-Life Decision Making: a Comparison of Decisions with Good versus Bad Outcomes. Department of Psychology, University of Oregon.
- *Jouini, Mohamed N. (1992). Combining Experts' Opinions: A Nonparametric Approach Using Copulas. Department of Decision Sciences, University of Oregon.
- Yovanoff, Paul (1992). Chapter 1 Student Eligibility Classification Based on the Oregon Statewide Assessment of Essential Learning Skills. College of Education, University of Oregon.
- Kim, Seung Chul (1991). The Integrated Shop Floor Control for a Dynamic Job Shop with Sequence-Dependent Setup Times. Department of Decision Sciences, University of Oregon.

- Lippmann, Ellen J. (1991). An Investigation of the Effects of Load, Format, and Expertise on Decision Quality and Decision Processing Strategies. Department of Accounting, University of Oregon.
- Miller, Christopher M. (1991). Accuracy of Strategic Choice. Department of Marketing, Transportation, and Business Environment, University of Oregon.
- Westort, Peter J. (1990). Investments in Human Capital by Accountants in Public Practice. Department of Accounting, University of Oregon.
- *Burns, William J. (1990). Introducing Structural Models and Influence Diagrams into Risk Perception Research: Their Value for theory Construction and Decision Making. Department of Decision Sciences, University of Oregon.
- *Paulson, Richard A. (1989). The Efficiency of Gambling Markets and Its Relationship to Modeling Bookmaker Behavior. Department of Decision Sciences, University of Oregon.
- Press, Eric G. (1988). The Role of Accounting-Based Contractual Provisions and Financial Statement Effects in Explaining a Debt Extinguishment: The Case of In- Substance Defeasance. Department of Accounting, University of Oregon.
- Yoshimoto, Gary A. (1987). The Effect on the Estimation of Coefficients by the Degree of Censoring for the Singly and Doubly Censored Regression Model. Department of Decision Sciences, University of Oregon.

SERVICE

PROFESSIONAL ORGANIZATIONS AND ACTIVITIES

- Editorial Board member, *European Journal on Decision Processes*. 2012-present.
- Fellow, Society of Decision Professionals. 2011-present.
- National Biodiesel Board Sustainability Task Force, Advisory Committee member. 2008-2009.
- Editorial Board Member, *Decision Analysis*, 2007-present.
- National Academy of Sciences Committee on Model Use for Regulatory Decision Making, 2004-2007.
- Founding Co-Editor, *Decision Analysis* (co-editor with Don Kleinmuntz), 2001-2006.
- Member, Chemical Manufacturing Association Risk Analysis Advisory Committee, 2000.
- Member, Harvard Center for Risk Analysis Advisory Committee, Harvard University 1999-2001.
- Panel Member: Decision, Risk, and Management Science Program, (National Science Foundation), 1996-1998.
- Cluster Organizer, Decision Analysis track, INFORMS national meeting, Atlanta, November, 1996.
- Co-Editor (with B. Abramson) for special issue of *International Journal of Forecasting* on probability forecasting, 1995.
- Associate Editor, *International Journal of Forecasting*, 1992-1996.
- Departmental Editor (Decision Analysis), *Management Science*, 1992-1995.

Panel Member, ORSA Decision Analysis Special Interest Group Best Publication Award, 1990-1991

Decision Analysis Society Student Paper Competition, Panel member 1988, Chair 1989, 2008.

Associate Editor, *Management Science*, 1987-1991.

Council Member, Decision Analysis Society, Institute for Operations Research and Management Science (formerly Decision Analysis Special Interest Group, Operations Research Society of America), 1986-1989, 1994-1997.

Member, Decision Analysis Society, Institute for Management Science and Operations Research (INFORMS), Society for Judgment and Decision Making

Former Member, Society for Risk Analysis, International Institute of Forecasters, International Society for Bayesian Analysis

Peer Reviewer for National Research Council, Army Corps of Engineers

Reviewer of grant proposals for National Science Foundation

Ad hoc reviewer for *Annals of Statistics*, *Canadian Journal of Statistics*, *Decision Sciences*, *IEEE Transactions on Systems, Man, & Cybernetics*, *International Journal of Forecasting*, *Journal of the American Statistical Association*, *Journal of Business and Economic Statistics*, *Journal of Forecasting*, *Journal of Operations Management*, *Management Science*, *Mathematical Social Sciences*, *OMEGA*, *Operations Research*, *Operations Research Letters*, *Organizational Behavior and Human Decision Processes*, *Risk Analysis*, *Decision Analysis*

UNIVERSITY SERVICE

Duke University

Fuqua School of Business

Strategy Review Committee, 2009

Executive MBA Advisory Committee, 2000-2001

CCMBA Admissions Committee, 2000-2001

CCMBA Design Committee, 1999

Next Generation Client Computing Project Committee, 1999

FuquaWorld Steering Committee, 1998

PhD Committee (1998-2005)

Curriculum Committee, 1996-1997, 2000-2002, 2007-2008

Executive Education Committee, 1995-1999

GEMBA Design Committee, 1995-1996, 2008-2009

Ad Hoc Personnel Committees 1997 (Chair), 2000, 2001, 2003, 2004, 2005, 2006, 2007 (Chair)

University

Corporate Sustainability Initiative Faculty Search Committee (Chair), 2009-2010

Faculty Director, Corporate Sustainability Initiative, 2008-2010

Duke Water Initiative, 2008-2009

University Sustainability Committee, 2007-present

Energy and Environment Working Group, 2008-present

Advisory Committee for the University Bookstore, 2006, 2007 (Chair)

Campus Institutional Review Board, 2003-2005
Executive Committee, Center for Environmental Solutions, 2001-2002
Committee on Facilities and Environment, 1998-2004
Academic Council, 1996-1998, 2010-2011

University of Oregon

Faculty Search Committees

College of Business

Decision Sciences 1985-86, 86-87, 87-88 (Chair)

Accounting 1986-87

Institute of Cognitive and Decision Sciences 1987-88, 88-89, 90-91, 91-92

Curriculum Committees and Task Forces, College of Business

CBA Task Force (Strategic Planning) 1990-91

Undergraduate Semester Conversion 1987-88

PhD Task Force 1985-86

Miscellaneous Committees

College of Business

Research Advisory Committee 1993-94

Teaching Effectiveness Committee 1986-87

Computer Committee 1985-86

Cognitive and Decision Sciences Institute

Executive Committee 1992-92

University

Library Committee 1990-91

Apple Computer Support Council 1987-88

Parking Structure Feasibility Group 1987-88

Campus Planning Committee 1985-86, 86-87

CONSULTING

2011. Omaha Foreign Exchange Corporation. Risk assessment of trading strategy.

2010. BC Hydro. Probability forecasting for customer response to demand-side management programs.

2009. Environmental Protection Agency. Multiattribute decision making for research proposal funding.

2008. Pharsight. Practical multiattribute preference methods for drug development decisions.

2007. Army Corps of Engineers. Reviewer for Louisiana Coastal Protection and Restoration project.

1999. Cadmus Group. Decision analysis support for USEPA procedures.

1999. Glaxo-Wellcome. Advisory role in knowledge-structuring project.

1998. EC/R Inc. Advisory role in EPA risk assessment project.

1997. Alceon Corporation. Mathematical statistics consultant for risk analysis project.

1996. The Nature Conservancy. Provided support in a negotiation regarding dam relicensing. Pro bono.
1995. Eli Lilly & Co. Provided a 2-day workshop on structuring decision models.
1994. Eugene Water and Electric Board. Provided a 2-day workshop on fundamentals of decision analysis.
- 1993-1994. University of Utah, Economics Department. Consultant on study of avalanche forecasting in Little Cottonwood Canyon (Alta and Snowbird ski areas). Provided advice on the use and modeling of expert avalanche forecasts for the purpose of generating probabilistic avalanche forecasts and decisions to close the highway for avalanche control activity.
- 1992-1994. Southwest Research Institute, San Antonio, TX. Project involved the development and execution of probabilistic risk assessment regarding future climatological change at Yucca Mountain, Nevada. Subsequent work on development of procedures for eliciting, using, and combining judgments from experts.
1992. Lawrence-Livermore National Laboratory, Livermore, CA. Participated in workshop on the use of expert judgment in seismic risk assessment.
1991. Minerals Management Service, Anchorage, AK. Provided a 3-day workshop on negotiation basics as part of a larger project to improve decision-making procedures in the agency.
1990. Bureau of Land Management. Studied value structures of stakeholder groups in dispute over logging in the Pacific Northwest.
1987. OreAqua of Springfield, OR. Project focused on statistical analysis to determine the impact of OreAqua's salmon-ranching operations on native salmon populations.

PRESENTATIONS

- “Decision Analysis, Expert Judgment, and Environmental Models.” Invited presentation at Johns Hopkins University, November, 2010.
- “Environmental Science, Policy Making, and Decision Analysis.” Invited presentation at National Center for Earth-surface Dynamics (NCED), Baton Rouge, LA, January, 2010.
- “Making Decision Analysis Work: Improving the Connection Between Behavioral Decision Research and Decision Analysis.” Invited presentation at University of Illinois, September, 2008.
- Panel member, “Presentation and Panel Discussion of the National Research Council’s Report on the Use of Models in Regulatory Decision Making. International Society for Exposure Analysis, Durham, NC, October, 2007.
- Discussant for “Experts and Decisions” session. SAMSI Workshop on Risk Analysis, Extreme Events, and Decision Theory, Durham, NC, September, 2007.
- “Tutorial: Linking Decision Analysis and Behavioral Decision Research.” INFORMS International, Puerto Rico, July, 2007.
- “Evaluating Models for Regulatory Use.” INFORMS International, Puerto Rico, July, 2007.
- “Subjective Probability Assessment, Partition Dependence, and Interior Additivity.” Fuqua School of Business, July, 2006.
- “Who Uses Decision Analysis, and Why?” Presentation at the Decision Analysis Affinity Group meeting, Baltimore, March, 2006.
- “Making Decision Analysis Work: Improving the Connection Between Behavioral Decision Research and Decision Analysis,” Workshop on Decision Modeling and Behavior in Uncertain and Complex Environments, Tucson, AZ, February, 2006.
- “Recent Results in the Psychology of Probability Judgment and Implications for Practice,” INFORMS national meeting, San Francisco, November, 2005.
- Panel member for “Research in Decision Analysis,” INFORMS national meeting, San Francisco, November, 2005.
- “A model of subjective probability judgment.” Presentation at the IFORS international meeting, Honolulu, July, 2005.
- “Partition Dependence in Subjective Probabilities: What it is and what you can do about it.” Invited presentation at the Decision Analysis Affinity Group meeting, Philadelphia, April, 2005.
- “Probability Assessments in Decision Analysis.” Invited presentation at Decision Research, Eugene, OR, April, 2004.
- “Prescriptive Models for Adjusting Subjective Probability Judgments.” Invited presentation at University of Arizona, April, 2003.
- “Prescriptive Models for Adjusting Subjective Probability Judgments.” Invited presentation at UCLA, April, 2003.
- “Interior Additivity and Subjective Probability.” With C. Ulu. Presentation at JDM national meeting, Kansas City, November, 2002.
- “Debiasing Expert Overconfidence: A Bayesian Calibration Model.” With K. Lichtendahl, Jr. Presentation at PSAM6, San Juan, Puerto Rico, June, 2002.

- “Interior Additivity and Subjective Probability.” With C. Ulu. Presentation at Fuqua School of Business, June, 2002.
- “Combining Correlation Assessments: Multiple Experts vs. Multiple Methods.” With R. Winkler. Presentation at INFORMS international meeting, Hawaii, June, 2001.
- “Subjective Probability Judgment: Partition Dependence.” With Craig Fox. Presentation at INFORMS national meeting, San Antonio, TX, November, 2000.
- “Does Decision Analysis Work?” Presentation at the Decision Analysis Affinity Group meeting, Alberta, May, 2000.
- “The Value of Decision Analysis.” Invited Presentation at the Naval Postgraduate School, Monterey, CA, October, 1999.
- “Making Hard Decisions.” Invited Presentation at the Naval War College, Newport, RI, September, 1999.
- “Assessing Dependence Measures for Decision & Risk Analysis Models,” with G. Fischer and R. Winkler. Presentation at INFORMS national meeting, Cincinnati, OH, May, 1999.
- “Does Decision Analysis Work?” Presentation at the Decision Analysis Affinity Group meeting, Orlando, January, 1999.
- “Does Decision Analysis Work? Evidence and a Research Agenda,” Presentation at the Seminar on Risk and Decision Sciences, Harvard Center for Risk Analysis, Harvard University, November, 1998.
- “Copulas and Correlations in Decision and Risk Analysis,” Presentation at the Decision Analysis Working Group (DAWG), Department of Engineering-Economic Systems and Operations Research, Stanford University, October, 1998.
- “Copulas and Correlations in Risk Analysis Modeling,” Presentation at the Society for Risk Analysis national meeting, Washington, DC, December, 1997.
- “Predicted vs. Experienced Utility: Implications for Decision Analysis,” Presentation at the INFORMS national meeting, Dallas, TX, October, 1997.
- “Copulas in Decision and Risk Analysis,” Presentation at the INFORMS national meeting, Dallas, TX, October, 1997.
- “Copula-based Probability Models for Decision and Risk Analysis,” Presentation for the Triangle Chapter, Society for Risk Analysis. Durham, NC, April, 1997.
- “Copula-based Probability Models for Decision and Risk Analysis,” Presentation at North Carolina State University. Raleigh, NC, March, 1997.
- “Does Decision Analysis Work? The Effects of Prescriptive Techniques on Judgment and Choice,” Presentation at Duke University, Decision Analysis Workshop. Durham, NC, November, 1996.
- Panel Member for “Balancing Technical Analysis and Public Participation in Environmental Decisions,” INFORMS national meeting, Atlanta, GA, November, 1996.
- “A Dependence-Assessment Approach to Decision Analysis,” INFORMS national meeting, Atlanta, GA, November, 1996.
- “Developing a Global Executive MBA.” Presentation at AACSB Executive MBA Conference, Chicago, IL, October, 1996.

- Panel member for “Decision Analysis in the Future MBA Curriculum,” INFORMS national meeting, Washington, DC, May, 1996.
- “Modeling Dependence in Decision Analysis with Copulas.” Presentation at INFORMS national meeting, Washington, DC, May, 1996.
- “Does Decision Analysis Work? A Research Agenda.” Presentation at the University of Texas, Austin, TX, April, 1996.
- “Copulas in Decision Analysis.” Presentation at Duke University, Decision Analysis Workshop. Durham, NC, January, 1995.
- “Copulas in Decision Analysis.” Presentation at UCLA, Decision Sciences Seminar. Los Angeles CA, January, 1995.
- “Copulas in Decision Analysis: An Overview.” Presentation at ORSA/TIMS National Meeting. Detroit MI, October, 1994.
- “Creative Decision Making: A Curriculum for Secondary-School Students.” Presentation at ORSA/TIMS National Meeting. Detroit MI, October, 1994.
- “Group Negotiation Tasks and Decision Analysis.” Presentation at ORSA/TIMS National Meeting. Detroit MI, October, 1994.
- “Decision Skills: What Needs to be Learned?” Presentation at Decision Skills Roundtable. Eugene OR, May, 1994.
- “The Forecast for 11,993 AD at Yucca Mountain: Cooler with a Chance of Showers.” Presentation at Decision Research. Eugene OR, April, 1994.
- “Models for Combining Experts’ Risk Assessments.” Presentation at PSAM II International Meeting on Risk Analysis. San Diego CA, March, 1994.
- “Cooperative Learning and Decision Analysis,” with H. Hampton & R. Gregory. Presentation at the ORSA/TIMS National Meeting. Phoenix AZ, November, 1993.
- “The Forecast for 11,993 AD at Yucca Mountain: Cooler with a Chance of Showers.” Presentation at Applied Decision Analysis. Menlo Park CA, October, 1993.
- “Current Research in the Aggregation of Expert Opinions.” Presentation at Seminar for Bayesian Inference in Econometrics and Statistics. Durham NC, November 1992.
- “Experimental Comparisons of Information-Aggregation Models,” with S.K. Jones and R.L. Winkler. Presentation at the ORSA/TIMS National Meeting. San Francisco, CA, November, 1992.
- “Combining Forecasts: An Overview.” Invited presentation at Twelfth Conference on Probability and Statistics in the Atmospheric Sciences and the Fifth International Meeting on Statistical Climatology. Toronto, June, 1992.
- “Flexible Modeling for Information Aggregation.” Invited seminar at INSEAD. Fontainebleau (France), May, 1992.
- “Aggregating Forecasts: Experimental Results for Some Subjective Aggregation Methods.” Presentation at Decision Sciences Workshop, Institute for Cognitive and Decision Sciences, University of Oregon. Eugene, April, 1992.
- “Influence Diagrams: An Overview.” Presentation at Psychology Proseminar, University of Oregon. Eugene, November, 1991.

- “Preparing Tomorrow’s Decision Makers.” Presentation at Literacy and Work Roundtable. Portland, OR, November, 1991.
- “Aggregating Point Estimates: A Flexible Modeling Approach,” with R. L. Winkler. Presentation at the ORSA/TIMs National Meeting. Anaheim, CA, November, 1991.
- “Flexible Modeling for Information Aggregation.” Presentation at Oregon Chapter, American Statistical Association. Eugene, OR, October, 1991.
- “Cooperation, Altruism, and Equity in Social Dilemmas.” Presentation at Decision Sciences Workshop, Institute for Cognitive and Decision Sciences, University of Oregon. Eugene, September, 1991.
- “Aggregating Point Estimates: A Flexible Modeling Approach,” with R. L. Winkler. Presentation at the International Symposium on Forecasting. New York, June, 1991.
- “Combining Forecasts: Why are Simple Methods Robust?” Presentation at Case Western Reserve University Operations Research Seminar, March, 1991.
- “Causal Models and Influence Diagrams.” Presentation at the ORSA/TIMS national meeting. Philadelphia, October, 1990.
- “What is the 0.05 Level?” Seminar given at Oregon Research Institute. Eugene, August, 1990.
- “The Information Content of Forecasts.” Seminar for the Institute of Statistics and Decision Sciences, Duke University. Durham, NC, April, 1990.
- “Modeling Dependent Information: A Conditional Expectations Approach.” Presentation at the Fuqua Decision Analysis Workshop, Duke University. Durham, NC, January, 1990.
- “Combining Forecasts: A Review.” Paper presented at the International Symposium on Forecasting. Vancouver, BC, June, 1989.
- “Unanimity and Compromise among Probability Forecasters,” with R.L. Winkler. Paper presented at the TIMS/ORSA national meeting. Vancouver, BC, May, 1989.
- “Decision Analysis and the Macintosh.” Workshop at University of Nebraska—Lincoln. Lincoln, NB, March, 1989.
- “Decision Making and the Macintosh.” Invited presentation at the 1988 Conference on Technology in Business and Education. Sponsored by Apple Computer, Inc. and the Stanford Graduate School of Business. San Jose, CA, December, 1988.
- “Teaching Influence Diagrams.” Panel discussion member at the ORSA/TIMS national meeting, Denver, 1988.
- “Modeling Dependent Expert Opinions Using Conditional Distributions.” Presentation at the ORSA/TIMS national meeting, St. Louis, 1987.
- “The Expected Value of Frequency Calibration.” Paper presented at the International Symposium for Forecasting, Boston, 1987.
- “Incremental Knowledge and Combining Forecasts,” with J.B. Guerard. Paper presented at the TIMS/ORSA national meeting, New Orleans, 1987.
- “On the Sensitivity of Weight in Combining Forecasts,” with R.L. Winkler. Presentation at the TIMS/ORSA national meeting, New Orleans, 1987.
- “The Expected Value of Frequency Calibration.” Paper presented at the 1987 Fuqua School of Business Decision Analysis Workshop.

“Combining Probabilities and Probability Distributions.” Panel discussion member, ORSA/TIMS national meeting, Los Angeles, 1986.

“Calibrating and Combining Precipitation Probability Forecasts,” with R.L. Winkler. Paper presented at the Innsbruck International Symposium on Probability and Bayesian Statistics, Innsbruck, 1986.

“How to Ignore Expert Information.” Paper presented at the TIMS/ORSA national meeting, Boston, 1985.

“Incentives for Forecasters: How to Make Your Forecaster Be Honest and Work Hard.” Paper presented at the ORSA/TIMS national meeting, Orlando, 1983.

“Using Prior Information in the Combination of Forecasts,” with R. L. Winkler. Paper presented at the 27th NBER-NSF Seminar on Bayesian Inference in Econometrics, Chicago, 1983.

“The Use of Statistically Dependent Information Sources.” Paper presented at the ORSA/TIMS national meeting, San Diego, 1982.