

EXHIBIT D

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
TYLER DIVISION**

ALOFT MEDIA, LLC,	§	
Plaintiff,	§	Civil Action No. 6:09-CV-304
v.	§	JURY TRIAL DEMANDED
ORACLE CORPORATION, ET AL.,	§	
Defendants.	§	
	§	

**DECLARATION OF DR. JAMES S. DYER IN SUPPORT OF
DEFENDANTS' MOTION FOR SUMMARY JUDGMENT OF INVALIDITY OF
UNITED STATES PATENT NOS. 7,499,898 AND 7,593,910 FOR INDEFINITENESS**

I, James S. Dyer, hereby declare and state:

Background

1. I am over the age of twenty-one (21) years, have never been convicted of a felony, and am fully competent to make this declaration. I have personal knowledge of matters set forth herein and know them to be true and correct.
2. I hold the Fondren Centennial Chair in Business at the University of Texas at Austin, and I served as chair of the Department of Information, Risk, and Operations Management for nine years (1988-97). I am the former Chair of the Decision Analysis Society of the Operations Research Society of America (now INFORMS). My main research interests are in the area of decision analysis, and I have published three books and more than sixty articles.
3. I have a B.A. with honors, Phi Beta Kappa, in physics (1965), with minors in mathematics and philosophy from The University of Texas at Austin, and I have a Ph.D. in business administration (1969), with major field in statistics and minor fields in quantitative methods and management, also from The University of Texas at Austin.

4. My curriculum vitae is attached as Exhibit 1, and my expert testimony experience before various tribunals during the past four years is listed in Exhibit 2.
5. I have been retained by Fair Isaac Corporation to provide technical assistance in this case. My compensation for that assistance is not contingent upon the outcome of this litigation.
6. The statements in this declaration are based on my educational background and on my 40 years of professional experience in the area of decision analysis, as well as on my study of the Aloft patents.

Level of Ordinary Skill in the Art

7. I have been asked to express an opinion in the case concerning the level of ordinary skill in the art relevant to the patents at issue, which are U.S. Patent No. 7,499,898 (“the ‘898 Patent”) and U.S. Patent No. 7,593,910 (“the ‘910 Patent”) (collectively, the “Aloft Patents”). I understand that the Aloft patents both claim priority to a provisional application that was filed on November 8, 1999.
8. I understand that factors such as the educational level of those working in the field, the sophistication of the technology, the types of problems encountered in the art, the prior art solutions to those problems, and the speed at which innovations are made may help establish the level of skill in the art.
9. In my opinion, a person of ordinary skill in the art would have a bachelor’s degree in engineering or computer science with some work experience in software development, and having some knowledge of decision analysis.

“Potential Feasible Hybrid Theme”

10. I have been asked to consider how the term “potential feasible hybrid theme” would have been understood by a person of ordinary skill in the art in 1999 and in the context of the Aloft patents, including the context of the claims in which the term appears.
11. The word “theme” is not defined in the Aloft patents. Other than in the claims, the word “theme” occurs only in Figure 4A, which provides no assistance in understanding what the word means in the claims. A person of ordinary skill in the art would not have known what was meant by “theme,” and, more particularly, would not have known how a “theme” differs from other terms used in the Aloft patents such as “strategy,” “policy,” or “tactic” (which, unlike “theme,” are defined in the patent specification).
12. As the patent itself explains, the term “hybrid” is a wholly subjective concept: “The purpose of Connection is for **the users to develop a new, more valuable ‘hybrid’ strategy** 602 combining the most valuable decisions in each of the initially defined alternative strategies. During Connection, **the users’ insight into the sources of risk and value 129** interacts with new decision relevant information from the database 126 and the decision structure provided by the decision application 124 to output an evaluation of the hybrid strategy 602.” (‘898 Patent, Column 12, Lines 51-60, emphasis added) This description from the patent agrees with my own understanding of the term – it is developed by the users and is based on their own insights. A person of ordinary skill in the art would have had no objective basis by which to implement a process for creating a “hybrid.”

13. The phrase “potential feasible hybrid theme” would have been understood as a “hybrid theme” that might work or might not work. The Aloft patents provide no guidance regarding how that subjective determination is or could be made.

The Decision Terms

14. I have also been asked to consider how the terms “decision logic” and “logic related to decision making” (collectively, the “decision terms”) would have been understood by a person of ordinary skill in the art in 1999 and in the context of the Aloft patents, including the context of the claims in which the terms appear.

15. A person of ordinary skill in the art could view the decision terms broadly or narrowly. If they are viewed broadly, then they are unbounded and could include virtually anything and everything related to decision making. See, for example, the Summary in the ‘898 Patent at Column 2, Lines 7-14 (“Initially, an application **capable of performing decision logic** is executed. Information is then received from a database **in accordance with the decision logic**. Information is also exchanged with the users **in accordance with the decision logic** using a user interface. The information is then processed **using the decision logic**.”) (emphasis added). In that situation, a person of ordinary skill in the art would have no basis for determining any bounds for these claim elements.

16. A person of ordinary skill in the art could view the decision terms narrowly. If the decision terms are viewed narrowly, then, in the context of the Aloft patents, a person of ordinary skill in the art would view the decision terms as referring to the Dialogue Decision Process (“DDP”) that is discussed throughout the patent specification and the figures. In fact, such a person would have understood the expressed motivation behind the Aloft patents to have been “a need for a computer-implemented method which may

be utilized for implementing DDP in different environments in a universal manner.”
(‘898 Patent, Column 2, Lines 1-3)

17. The DDP process has four steps—Framing, Alternatives, Analysis, and Connection—each of which is subjective, with the final step, the Connection step, being wholly subjective. Many aspects of the DDP process depend on the unrestrained subjective opinions of the person or persons practicing the process. In fact, the first “D” in “DDP” stands for dialogue, which recognizes the subjective nature of the discussions that guide the DDP process.
18. The Framing Step of the DDP process requires the users to identify subjectively various levels of decisions (policies, decisions, and tactics) which are input into the Decision Hierarchy as short, verbal descriptions. This step also requires the users to identify subjectively an influence diagram to highlight values, uncertainties, and decisions in a “box and arrow” diagram. A person of ordinary skill in the art would have no basis for actually implementing these steps as they require judgments obtained subjectively from the users.
19. The Alternatives Step of the DDP process requires the users to develop a strategy table that provides choices within defined and related decisions, and then to define coherent strategies by selecting one choice for each decision based on the decision application-structure for this application. A person of ordinary skill would have no basis for determining the inputs to this structure as it requires the subjective involvement of the users and the definition of the decision application.

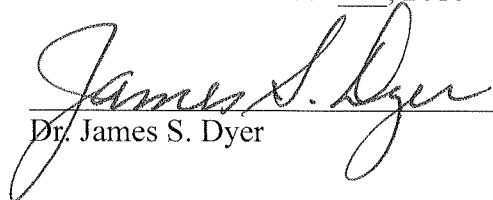
20. The Analysis Step of the DDP process requires the users to develop uncertainty ranges for each alternative, and to calculate the total value of each alternative choice for each decision in the strategy using a computer code for processing decision logic. The “computer code for processing” limitation is discussed below in Paragraphs 22-23.
21. The Connection Step of the DDP process requires the determination of a “hybrid” strategy. The “hybrid” limitation is discussed above in Paragraph 12.

“Computer Code for Processing”

22. Finally, I have also been asked to consider how the term “computer code for processing” would have been understood by a person of ordinary skill in the art in 1999 and in the context of the Aloft patents, including the context of the claims in which the term appears.
23. The Aloft patents provide no discussion of how the “computer code for processing ... utilizing the decision logic” operates. One of skill in the art would not understand “processing” as a specific function within the context of the claims. From the disclosure in the Aloft patents, one of ordinary skill in the art would not have been able to derive a specific algorithm for performing the “processing” function, and thus would not have been able to determine any bounds for this element of the claims.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on December 6, 2010



Dr. James S. Dyer

Vita
January, 2010

PROFESSOR JAMES S. DYER, Ph.D.

**Department of Information, Risk, and Operations Management
College of Business Administration
and
The Fondren Centennial Chair in Business**

MAIL

Dr. James S. Dyer
IROM Department
CBA 5.202 (B6500)
The University of Texas
Austin, TX 78712

ELECTRONIC

Phone: (512) 471-5278

Fax: (512) 471-0587

e-mail j.dyer@bus.utexas.edu

HOME

3601 Murillo Circle
Austin, TX 78703

Phone: (512) 472-6776

PERSONAL

Born: May 7, 1943, Brownsboro, Texas

Married: Kathryn A. Dyer

Children: James P. Dyer (b.1972)

Jeffrey H. Dyer (b.1975)

EDUCATION

B.A. with honors, Phi Beta Kappa, in physics (1965), minors in mathematics and philosophy, The University of Texas at Austin

Ph.D. in business administration (1969), major field in statistics and minor fields in quantitative methods and management, The University of Texas at Austin

RESEARCH AND SCHOLARLY INTERESTS

Area of expertise is in decision analysis and strategic management in the private and public sectors as it concerns risky capital investments, environmental restoration, and oil exploration.

TEACHING AND ADMINISTRATIVE POSITIONS

**I. College of Business Administration, Department of Management Science and Information Systems,
The University of Texas at Austin:**

1988-97	Chair, Department of Management Science/Information Systems
1998-	Holder of the Fondren Centennial Chair in Business
1985-98	Holder of the Foster Parker Centennial Professorship in Management and Finance
1994-96	Holder of the Jack S. Josey Professorship in Energy Studies
1986-88	Director, Operations Management Center
1982-86	Chair, Department of Management
1981-85	Holder of the Jack G. Taylor Professorship in Business
1979-	Professor of Management
1978-79	Visiting Professor of Management

II. University of California, Los Angeles

1978-79 Professor of Management
1973-78 Associate Professor of Management
1969-73 Assistant Professor of Management

III. Darden Graduate Business School, University of Virginia

Spring, 1999 Phillip J. Rust Visiting Professor of Business Education

COURSES TAUGHT

University of California, Los Angeles

MGT 203A Economics of Decision, Winter 1975, Fall 1976, Fall 1977
MGT 240A Deterministic Methods of Operational Systems, Fall 1969, Fall 1976
MGT 240B Nonlinear and Dynamic Models of Operational Systems, Winter 1972, Fall 1972,
Winter 1973, Winter 1974
MGT 240C Synthesis of Operational Systems, Winter 1972, Fall 1972
MGT 244B Project Management, Fall 1969, Fall 1971
MGT 292C Comprehensive Planning in the Public Sector, Fall 1970
MGT 407 Managerial Model Building, Winter 1977,
MGT 410 Operations Management, Spring 1971
MGT 431 Model Building, Fall 1971
MGT 443 Complex Systems: Methods of Identification and Solution, Spring 1973, Spring 1974,
Spring 1976, Spring 1977
MGT 482 Operational Systems (Plan A), Winter 1970, (Subsequently divided into MGT 482A, B, and C)
MGT 482B Operational Systems (Plan A), Winter 1971
MGT 556J Multi-Criteria Decision Making, Summer 1970
MGT 596J Project Management, Fall 1970, Summer 1971
MGT 196J Production Scheduling and Control, Fall 1971

The University of Texas, Austin

MAN 386 Strategic Decision Making, Spring 1980, Fall 1980, Fall 1981, Summer 1987, Spring 1991,
Spring 1992, Spring 1993, Spring 1995, Spring 1997
MAN 385 Managing Decisions with Risk and Multiple Objectives, Fall 1978, Fall 1979, Spring 1981,
Spring 1982, Spring 1983, Spring 1984, Spring 1985, Spring 1986, Spring 1987,
Spring 1988, Spring 1989, Spring 1990, Spring 1994, Spring 2001, Spring 2002
BA 380M Applied Mathematical Analysis and Computer Methods I, Spring 1979, Fall 1979, Spring 1980,
Fall 1980, Spring 1981
BA 380N Applied Mathematical Analysis and Computer Methods II, Fall 1978, Fall 1981, Spring 1982, Fall
1982, Fall 1983, Fall 1984, Fall 1985, Fall 1986, Fall 1987, Fall 1989, Fall 1990, Fall 1991, Fall
1992, Fall 1993, Fall 1994, Fall 1996, Fall 1997, Fall 1998, Fall 1999, Fall 2000, Fall 2001, Fall
2002, Spring 2006
MAN 335 Operations Management, Spring 1979
BA 386T Statistical Methods, Fall 1998, Fall 1999, Fall 2003
MIS 383N Valuation of Real Options, Spring 2000, Spring 2001, Spring 2002, Spring 2007
MSC 371H Management Science, Fall 2004, Fall 2005, Fall 2006, Fall 2007, Fall 2008
STA 287 Business Analytics and Decision Modeling, Spring 2010

The University of Virginia

QA Methods of Quantitative Analysis, Spring 1999

DOCTORAL COMMITTEE CHAIRMAN

Degrees Granted and Current Status

Abraham Feinberg, 1972, Full Professor and Former Chairman of the Department of Management Science, California State University, Northridge, California.
John M. Mulvey, 1975, Professor, School of Engineering, Princeton University (prize winner in the 1975 Doctoral Dissertation Competition sponsored by the American Institute of Decision Sciences).
Rakesh Sarin, 1975, Professor, Graduate School of Management, UCLA (prize winner in the 1975 Doctoral Dissertation Competition sponsored by the American Institute of Decision Sciences).
Robert Millen, 1976, Professor, School of Business Administration, Northeastern University.
William Webster, 1986, Associate Professor, School of Business Administration, University of Florida.
H.V. Ravinder, 1986, Associate Professor, School of Business Administration, University of New Mexico.
John B. Larsen, 1989, Associate Professor, School of Business Administration, Florida State University.
Peter C. Anselmo, 1991, Associate Professor, New Mexico Mining and Mechanical University.
M. Keith Wright, 1992, IBM, Austin.
Michael Walls, 1992, Associate Professor, Colorado School of Mines.
Jianmin Jia, 1995, Professor, The Chinese University of Hong Kong (prize winner in the 1994 ORSA Decision Analysis Special Interest Group student paper competition, and 1996 honorable mention-dissertation award, The University of Texas at Austin).
John C. Butler, 1998, Clinical Professor, McCombs School
Rex Pereira, 1999, Assistant Professor, Drake University
James Ritchie-Dunham, 2001, The Institute of Strategic Clarity, Boston, Massachusetts
Warren J. Hahn, 2005, Assistant Professor, Pepperdine University, Malibu, Calif.
Min Chen, 2006, Research Fellow, Princeton University.
Saurabh Bansal, 2010, Assistant Professor, Pennsylvania State University

MBA THESES SUPERVISION

Kwang Min Yang, 1978, On Academic Resource Scheduling
James Bishop, 1979, An Overview of Policy Capturing
Charlene Kruiuzenga, 1980, The Product Portfolio Approach as a Planning Tool
David Schkade, 1980, Toward a Synthesis of Rationalities
Karen Noer, 1981, Ashland Oil Company: Heresey or Wisdom
Joe Smith, 1981, A Review of Decision Analysis Software
Bryan Deaton, 1981, A Policy Analysis of CETA Programs
James O. Tubbs, 1981, Multiple Objective Optimization: Theory and Practice
Milan Dahlquist, 1982, NOVAQUIST: Decision Tree Software
John W. Richman, 1982, A Strategic Analysis of the Microcomputer Industry
Peter Anselmo, 1982, The South Texas Nuclear Project: Nuclear Risks and Risk Equity
Artie Novacek, 1982, A User's Manual for Decision Tree Software
Larry Leibrock, 1983, An Adventure in Decision Analysis: A Pilot Decision Support System Employing Cardinal Utility Hueristics for Multiple Criteria Problems
Mary Allyn Watson, 1983, A Scheduling Model for Scarce Personnel With Inclusive Skill Levels
Diane Dahlberg, 1983, Selecting an Integrated Computer System
Rand Turner, 1985, Strategic Planning for a Real Estate Firm
Gary Kittrell, 1987, Building Selector
Gary L. Underwood, 1990, Risk Management in Electric Utility Generation Planning (winner of Second Prize in the 1991 Mineral Economics Student Paper Competition)

COMMITTEES AND ADMINISTRATIVE DUTIES

University of California, Los Angeles

Professional Masters Program Design Committee (1970-71): This committee designed the Professional Masters Program now offered by the Graduate School of Management. The program includes a relatively standardized first year, and a very flexible second year.

Chair, Subcommittee on Ventures with Other Schools of the Professional Master's Program (PMP) Committee (1972-73): Developed concentration in management in education for the PMP involving cooperation with the School of Education. Developed joint MBA-JD degree program with the School of Law.

Interdepartmental Committee Granting a Masters of Science Degree in Comprehensive Health Planning (1971-73): Members were from the Schools of Management, Public Health, Political Science, and Architecture and Urban Planning.

Vice-Chair, Department of Management (1973-74): Primary responsibilities were faculty and course scheduling, and recruiting.

Director, Operations Research Study Center (1974-75): Responsible for curriculum design and course scheduling in management science.

Chair, Management Science Curriculum Committee (1977-78): responsible for curriculum design and course scheduling in management science.

Chair, Executive MBA Committee (1977-1978): Responsible for the design of an Executive MBA Program to be offered by the Graduate School of Management to mid-career managers.

The University of Texas at Austin

Chair, Planning and Control Committee (1979-1980): Responsible for the design of a curriculum and a research program in strategic planning and control.

Chair, Graduate School of Business Committee (1980-1982): Responsible for core course review for the MBA program.

Executive Committee, Department of Management (1980-1982): Elected committee with authority of departmental budget council. Area Coordinator, Operations Management Area (1980-1981): Responsible for recruiting, curriculum design, and course scheduling in the operations management area.

Chair, Seminar Series on Decision Analysis (1980-1984): Responsible for establishing a biweekly seminar series in decision analysis with a University-wide mailing list.

Member, Dean's Search Committee, School of Business Administration (1982-83)

Chair, Department of Management (1982-1986)

Member, Construction Industry Institute Steering Committee, College of Engineering (1983-present)

Chair, Department of Management Science and Information Systems (1988-97)

Member, Steering Committee, MBA Program Design, Fall 1992

Member, Task Force, MBA Program Design, Fall 1992

Chair, Research Committee of the General Faculty, The University of Texas at Austin (1993-95)

Member, Vice President of Research Search Committee, The University of Texas at Austin (1994)

Co-Chair, Financial Trading Room Committee, College of Business Administration, The University of Texas at Austin (1994-95)

Member, Dean's Search Committee, College of Business Administration, (1995-96)

Member, TI-EMBA Steering Committee, (1998-99)

Member, Faculty Research Committee, (1999-01, 2009-2010)

Chair, Faculty Research Committee, (2001-2002, 2002-2003, 2003-2004)

Member, Dean's Promotion Committee, (2001-2003, 2008-2009)

Member, McCombs Strategic Planning Committee, (2002-2003)

Member, Research Policy Committee (Campus-wide, 2003-2005)

McCombs School Representative, Center for Petroleum Risk and Asset Management (joint research center involving the McCombs School, Petroleum Engineering, and the Bureau of Economic Geology, 2003-8)

Member, Energy and Mineral Resources Program Recruiting Committee (2003-2005)
Member, Ad-hoc Committee on Energy Research with Sandia Laboratories
Member, Endowment Committee of the Jackson School (2004-10, named by Jaun Sanchez)
Member, Faculty Research Committee of the University (FRA and SRA evaluation, 2004-2005, 2005-2006, 2006-2007)
Member, Energy Summit Committee of The University of Texas at Austin chaired by Dean Eric Barron of the Jackson School
Member, Faculty Committee, Bridging Disciplines Program (interdisciplinary undergraduate programs)

SERVICE TO THE STAFF OR EDITORIAL BOARD OF SCHOLARLY PUBLICATIONS

Operations Research, Referee, 1973-present, Area Editor for Decision Analysis, 2000-2006
Management Science, Referee, 1972, Associate Editor, 1977-1999
Decision Analysis Journal (INFORMS), Editorial Board, 2001-present
Decision Sciences, Referee, 1971-present
Mathematical Programming, Referee, 1973-present
The Engineering Economist, Referee, 1976-present
Canadian Journal of Operations Research and Information Processing, Referee, 1977-present
IEEE Transactions on Systems, Man, and Cybernetics, Referee, 1979-present
Socio-Economic Planning Sciences, Referee, 1980-present
The Journal of Risk and Insurance, Referee, 1981-present
Omega, Referee, 1982-present
Large-Scale Systems, Referee, 1982-present
SPE Economics & Management, Editorial Board, 2009-present

PROFESSIONAL SOCIETIES AND OFFICES

Member, Strategic Planning Committee, INFORMS (2008)
Chair, Publication Award Committee, Decision Analysis Society, INFORMS (2008)
Chair, Ramsey Award Committee, Decision Analysis Society, INFORMS (2004, 2005, 2006)
Member, Ramsey Award Committee, Decision Analysis Society, INFORMS (2007, 2009, 2010)
Member, Teaching Award Committee, INFORMS (2000-2002)
Decision Analysis, (INFORMS journal), Member, Editor Search Committee (2001), Editorial Board (2001-2010)
Management Science, Member, Editor Search Committee (1999)
Management Science, Member, Editor Search Committee (1995-1996)
Chair, Decision Analysis Special Interest Group of the Operations Research Society of America (1992-94)
Chair, Combined Publication Committee of The Institute of Management Science and the Operations Research Society of America (1987-88)
Vice-President, Publications, The Institute of Management Science (1985-88)
Nominated for Council of The Institute of Management Science (1983)
Chair, The Institute of Management Science Publication Committee (1983-88)
Advisory Council, Southern California Chapter of the Institute of Management Science (1973-74)
Director, OR/MS Employment Program, ORSA/TIMS National Meeting, Las Vegas, 1975
Full Member of the Operations Research Society of America
Chair (1978-79) and Vice-Chair (1976-77) of the Educational Sciences Section of the Operations Research Society of America
Sponsored Session Coordinator (1983) for the Decision Analysis Special Interest Group of the Operations Research Society of America
Council Member (1983) of the Decision Analysis Special Interest Group of the Operations Research Society of America
Track Chair, Statistics and Decision Theory for the 1983 National Meeting of the American Institute for Decision Sciences
Charter Member of the Mathematical Programming Society

AWARDS AND HONORS

Phi Eta Sigma, 1962

Sigma Pi Sigma (physics honorary fraternity), 1965

Phi Beta Kappa, 1965

Beta Gamma Sigma, 1967

Phi Kappa Phi, 1967

The paper "Tinker Toys and Christmas Trees: Opening a New Merchandising Package for Amoco Oil Company" won a Management Science Achievement Finalist Award for 1982.

College of Business Administration Foundation Advisory Council Award for Outstanding Research Contributions, 1998-99.

Honorable Mention, Decision Analysis Society Competition for the Best Application of Decision Analysis for the paper: Dyer, J., Butler, J., Edmunds, T., and Jia, J., "A Methodology for the Evaluation of Alternatives for the Disposition of Weapons-Grade Plutonium," Operations Research, Vol. 46, No. 6, 1998

Senior Fellow, Center for Decisions Under Uncertainty of the Chinese Academy of Sciences (CAS), Beijing, China, 2002

Ramsey Award, Decision Analysis Section of INFORMS, 2002

Finalist, 2004 Franz Edelman Award Competition, "The Adoption of Multittribute Utility Theory for the Evaluation of Plutonium Disposition Options in the United States and Russia"

Winner, Decision Analysis Society 2004 Student Paper Competition, "A Discrete-Time Approach for Valuing Real Options with Underlying Mean-Reverting Stochastic Processes", with Warren Hahn (IROM PhD student)

Edgeworth-Pareto Award, International Society on Multiple Criteria Decision Making, 2006

Fellow, INFORMS, 2006

FELLOWSHIPS, GRANTS, AND CONTRACTS

1. Ford Foundation Fellowship, \$8,000, Doctoral Support, 1966-68.
2. Association of Governing Boards of Universities and Colleges, \$25,000, plan development for an Advanced Management Program for Educational Institutions, 1976-77.
3. Office of Naval Research, \$11,080.05, "The Role of Decision Analysis in Determining Occupational Safety and Health Policies," 1978.
4. Office of Naval Research, \$44,380, "Applications of Decision Analysis to the Evaluation of Asbestos Hazard Abatement Alternatives," 1979.
5. Office of Naval Research, \$45,852, "Applications of Decision Analysis to Hazard Management Problems," 1980.
6. Office of Naval Research, \$25,000, "Decision Analysis of Hazard Management Problems," 1981.
7. National Science Foundation, \$56,146, "A Theoretical and Empirical Investigation of the Effects of Risk on Decision Making," 1983.
8. Office of Naval Research, \$50,000, "Decision Making Under Uncertainty: Risk Attitudes and Complex Tasks," 1984.
9. Office of Naval Research, \$53,389, "Decision Making Under Uncertainty in Complex Tasks," 1985.
10. Amarillo National Plutonium Research Center, \$500,000, "A Methodology for the Analysis and Selection of Alternatives for the Disposition of Surplus Weapons-usable Fissile Materials," 1995-98.
11. National Science Foundation, \$210,000, "Empirical Studies of Risk-Value Theory", 1999-2001.
12. IBM Center for Advanced Studies, "Risk Management in New Product Development Decisions", \$40,000, 2005-2006.

PROFESSIONAL ACTIVITIES

Consultation or Service to Civic, State, or National Government Agencies

1. Faculty Consultant, Engineering and Applied Science ITTE Driver Training Evaluation Study, 1970-71. Supervision of Cost Analysis.
2. Member of Staff, Center for the Study of Evaluation in Education, UCLA, 1970-79.
3. Research Fellow, Institute of Government and Public Affairs, UCLA, 1973-74.
4. Reviewer, National Science Foundation, 1977-present.
5. Participant, Workshop sponsored by the Committee on Risk and Decision Making of the National Academy of Sciences.
6. Consultant, Texas Energy and National Resources Advisory Council, 1981.
7. Participant, US-FRG Conference on Managing Risk sponsored by the National Science Foundation and the Brookings Institute, April 1983.
8. Member, Governor's State Executive Development Advisory Council and Chairman, Subcommittee on Executive Development Curriculum, 1984.
9. Chair, Technical Review Group for the Resource Allocation System of the Office of Waste Management of the U.S. Department of Energy, 1994.
10. Member, Review Panel, Program in Decision, Risk, and Management Science, National Science Foundation, 1998-2000.
11. Member, Steering Committee, Homeland Security: New Challenges for Decision Making Under Uncertainty, A Department of Homeland Security Workshop, Washington, D.C., November 13-14, 2003.
12. Member, National Science Foundation Review Committee, Small Business Innovation Research Program, Optimization and Engineering Analysis, September 2004.
13. Member, Technical Review Committee, The Critical Infrastructure Protection Decision Support System (CIP/DSS) project with the Department of Homeland Security Office of Science and Technology (DHS S&T). Argonne, Los Alamos, and Sandia National Labs, Washington, DC, March 2006.
14. Member, Technical Review Committee, Inference Technologies for Detection of State Weaponization Activities, Lawrence Livermore Laboratories, August, 2010.

Other Consultative or Professional Activity

1. Consultant, The Rand Corporation, 1969-1975.
2. Consultant to Hawthorne, Centinela Community, and Daniel Freeman Hospitals, Summer 1971.
3. Consultant, The Jet Propulsion Laboratory, 1973-74.
4. Consultant, National Center for Higher Educational Management Systems, The Western Interstate Commission on Higher Education (WICHE).
5. Consultant, Alcohol Safety Action Project, County of Los Angeles, 1974.
6. Representative of the National Academy of Sciences at the Workshop on Decision Making with Multiple Objectives at the International Institute of Applied Systems Analysis, Austria, October 20-24, 1975.
7. Consultant, Standard Oil Company (Indiana), 1975-1984.
8. Consultant, RMC Corporation, Review Panel for Cost Analysis of Follow Through Projects, a project funded by the U.S. Office of education, 1977.
9. Consultant, Integrated Sciences Corporation, Santa Monica, 1978.
10. Consultant, Los Alamos Laboratories, Los Alamos, New Mexico, 1979.
11. Consultant, Tenneco, Inc., Houston, Texas, 1980.
12. Consultant, Woodward-Clyde, Inc., San Francisco, California, 1981.
13. Consultant, Fletcher Challenge, Auckland, New Zealand, 1982.
14. Consultant, Lockheed Missiles and Space Company, Inc., Austin, Texas, 1983.
15. Consultant, Texas Instruments, Inc., Austin, Texas, 1984.
16. Consultant, Kleberg, Dyer, Redford, and Weil, Corpus Christi, Texas, 1987-90.
17. Consultant, Cardwell and Hart, Austin, Texas, 1990.
18. Consultant, Texaco, Inc., Houston, Texas, 1991, 1995-1997.
19. Consultant, Department of Energy Environmental Restoration Prioritization System Technical Review Group, 1991.

20. Consultant, Broyles and Pratt, Austin, Texas, 1993-94, 1996.
21. Consultant, Vinson and Elkins, Austin, Texas, 1994-96.
22. Consultant, Lower Colorado River Authority, Austin, Texas, 1993-96.
23. Consultant, Ikard and Golden, Austin, Texas, 1997.
24. Consultant, Schlumberger, Austin, Texas, 1998.
25. Consultant, Texas Utilities, Dallas, Texas, 1998.
26. Consultant, Broyles and Pratt, Austin, Texas, 1999.
27. Consultant, Clark, Thomas, and Winters, Austin, Texas, 2001, 2008.
28. Consultant, GPU Energy, 2001.
29. Consultant, AEP Energy, 2003-2005, 2007.
30. Consultant, Public Service of Oklahoma, 2010.

PARTICIPATION IN PUBLIC LECTURES OR FORUMS

1. "Linear Programming for Educational Systems," Interstate Project for Planning and Program Consolidation, April 21, 1970, with John Burt. (Invited)
2. "R and D Project Selection," Nippon Office Management Association, August 1970. (Invited)
3. "Preliminary Application of a New Approach for Multi-Criterion Optimization to the Operation of an Academic Department," (with A Geoffrion and A. Feinberg). Analytical Planning Models Workshop sponsored by the Western Interstate Commission on Higher Education and the Ford Foundation Research Program in Higher Education, Berkeley, March 1971.
4. Seminar in Project Management for Employees of the City of Inglewood, California, May 1972.
5. Participant, Statewide Planning and Analysis Workshop, National Center for Higher Education Management Systems, Denver, Colorado, September 1973.
6. Participant, Sixth Annual Conference on Human Judgment, University of Colorado, Boulder, Colorado, June 1973.
7. Participant, Twenty-eighth All-University Faculty Conference, March 26-28, 1974, University of California, June 1973.
8. "Trajectory Selection for the Mariner Jupiter/Saturn 1977 Project," Twelfth Bayesian Research Conference, Los Angeles, February 1974 (with Ralph A. Miles, Jr.).
9. Participant, Seventh Annual Conference on Human Judgment, University of Colorado, June 1974.
10. "Alternative Formulations of the Trajectory Selection Problem for the Mariner Jupiter/Saturn 1977 Project," Workshop in Decision Making with Multiple Conflicting Objectives, International Institute for Applied Systems Analysis, Schloss Laxenburg, Austria, October 20-24, 1975 (with Ralph A. Miles, Jr.).
11. "Alternative Formulations of the Trajectory Selection Problem for The Mariner Jupiter/Saturn 1977 Project," Southern California Chapter of the Institute of Management Sciences, May 6, 1976 (with Ralph A. Miles).
12. "Alternative Formulations of the Trajectory Selection Problem for the Mariner Jupiter/Saturn 1977 Project," Social Science Research Institute, University of Southern California, March 7, 1977 (with Ralph A. Miles).
13. "The Implication of an Integrated Optimization/Information System for Academic Departmental Planning," Invited Lecture to the Management Sciences Symposium, College of Administrative Science, The Ohio State University, Columbus, Ohio, March 8, 1977 (with J. Mulvey).
14. Participant in Service Sector Panel, Conference on the Disaggregation Problem, The Ohio State University, Columbus, Ohio, March 9, 1977.
15. "Recent Advances in Multiattribute Utility Theory," Invited Lecture, The Rand Corporation, Santa Monica, California, April 18, 1977.
16. "Cardinal Social Welfare Functions for Choices Among Certain Consequences," Conference on Multiple Criteria Problem Solving--Theory, Methodology, and Practice, State University of New York at Buffalo, August 22-26, 1977 (with R. Sarin).
17. "Managing with Multiple Objectives: Applications of Multi-attribute Utility Theory," combined Chicago chapters of TIMS/ORSA, Chicago, Illinois, November 16, 1977, invited seminar.

18. "Public Program Evaluation: Application of Decision Analysis," Lectures presented at the Graduate School of Management, UCLA, February 6-10, 1978 (with Ralph Keeney and Ward Edwards).
19. "Applying the Theories of Public Choice," Risk/Benefit Decisions and the Public Health, Third FDA Office of Science Symposium, Air Force Academy, Colorado Springs, Colorado, February 15-17, 1978. (Invited)
20. "High Technology Project Management," Lectures presented at UCLA, November 6-10, 1978.
21. "Managing with Multiple Decision Makers," Tutorial presented at the TIMS XXIV International Meeting, Hawaii, June 18-22, 1979 (with R. Keeney).
22. "Methods of Assessing Value and Uncertainty in Long Range Forecasts," Invited Lecture, Los Alamos Laboratories, Fall 1979.
23. "Relative Risk Aversion," invited lecture, School of Business Administration, University of Kentucky, May 3, 1980.
24. "Measurable Multi-attribute Value Functions," Decision and Control Seminar, Engineering, University of Texas, November 1980.
25. "Relative Risk Aversion: Extensions and Areas for Further Research," Principal Investigators Conference sponsored by the Technology and Risk Assessment Division of the National Science Foundation, San Francisco, January 20-21, 1982.
26. "The Effects of Risk on Preferences," invited lecture, The Wharton School, University of Pennsylvania, April 18, 1984.
27. "Decision Analysis and Artificial Intelligence," invited lecture, School of Business Administration, The University of Colorado, October 3, 1984.
28. "Recent Advances in Decision Analysis Software," invited lecture, School of Business Administration, The University of North Carolina, April 1985.
29. "The Effects of Risks on Preferences," invited lecture, Duke University, October 1985.
30. "The Effects of Risks on Decision Making," invited lecture, The University of New Mexico, March 1987.
31. "Applications of Risk Analysis in Project Management," lectures presented at the Kuwait Regency Palace, Kuwait, April 18-19, 1987 (with David Ashley).
32. "Incorporating Risks into Preferences," lecture presented at the NATO Advanced Study Institute, Turkey, June 28 - July 8, 1987.
33. "Legal Approach to Market Dominance: Comments on a Paper by Professor Herbert Hovencamp," Current Issues in Telephone Regulation: Dominance and Cost Allocation in Telephone Regulation, Austin, Texas, October 4-6, 1987.
34. "Decision Analysis on a Micro-Computer," lecture presented at the Third International Summer School on Multiple Criteria Decision Aids, Lisbon, Portugal, July 27, 1988.
35. "Probabilistic Causal Reasoning in Decision Support Systems," invited lecture, N.A.T.O. Advanced Study Institute on Recent Developments in Decision Support Systems, Il Ciocco, Italy, June 16-28, 1991.
36. "The New Electronic World of Non-Banking: Has the 'Net' Opened the Gates to the Banking Arena for Non-Banks?" INSIG, Paris, France, December 7-8, 1995.
37. "A Proposed Methodology for the Analysis and Selection of Alternatives for the Disposition of Surplus Plutonium," International Conference on Military Conversion and Science, Utilization/Disposal of the Excess Weapon Plutonium: Scientific, Technological and Socio-Economical Aspects. Villa Como, Italy, March 18-20, 1996.
38. "A Proposed Methodology for the Analysis and Selection of Alternatives for the Disposition of Surplus Plutonium," invited lecture, University of California, Berkeley, November 5, 1996.
39. "Generalized Disappointment Models", invited lecture, Darden School of Business, University of Virginia, April 1999.
40. "Generalized Disappointment Models", invited lecture, Fuqua School of Business, Duke University, April 1999.
41. "Teaching MS/OR with Spreadsheets", INFORMS Meeting, Salt Lake City, May 2000.
42. "Investment Decision Making and Risk Management", Houston Association of Professional Landmen Spring Seminar, March 8, 2003.
43. "Monetize Existing Assets—Role of Portfolio Management in Extracting Value", Portfolio Optimization for Oil & Gas, Houston, Texas, October 23-24, 2003

44. "Real Options and Decision Analysis", Meeting of Austin Energy Economists, Lower Colorado River Authority, Austin, Texas, November 11, 2003.
45. "Modeling Corporate Risk Attitudes", Panel Discussion, INFORMS National Meeting, October 2004.
46. "Attributes and Objectives", Helsinki University of Technology, Invited Lecture, August 31, 2005.
47. "Decision Analysis: Foundations in Mathematics, Science, and Engineering", Panel Discussion, INFORMS National Meeting, October 2006.

PAPERS PRESENTED AT PROFESSIONAL SOCIETIES

1. "Measures of Effectiveness in Higher Education: Interactions and Implications," TIMS Sixteenth International Meeting, New York City, March 20, 1969.
2. "The Evaluation of Decision-Relevant Attributes of a Public System of Higher Education," 11th Annual Meeting of TIMS, Los Angeles, October 20, 1970.
3. "Allocating Resources by Subject Area," American Educational Research Association Annual Convention, New York, February 1971.
4. "A Decision Model for Evaluating Potential Change in Instructional Program," Thirty-Ninth National Meeting of the Operations Research Society of America, Dallas, May 1971.
5. Discussant, Contributed Paper Session, Third Annual Meeting of the American Institute for Decision Sciences, St. Louis, October 1971.
6. "Utility Functions for Test Performance," American Educational Research Association Annual Convention, Chicago, April 1972 (with William Farrell and Paul Bradley).
7. Discussant, Contributed Paper Session, American Educational Research Association Annual Convention, Chicago, April 1972.
8. "Interactive Goal Programming," TIMS Nineteenth International Meeting, Houston, April 1972.
9. Discussant, Session on Goal Programming, American Institute for Decision Sciences Western Regional Meeting, San Diego, March 1973.
10. "Trajectory Selection for the Mariner Jupiter/Saturn 1977 Project," ORSA/TIMS Joint National Meeting, San Juan, Puerto Rico, October 1974 (with Ralph A. Miles, Jr.).
11. "The Implementation of an Integrated Optimization/Information System for Academic Departmental Planning," ORSA/TIMS Joint National Meeting, San Juan, Puerto Rico, October 1974 (with John M. Mulvey).
12. "The Evaluation of Alternative Projects in Criminal Justice Planning," ORSA/TIMS Joint National Meeting, San Juan, Puerto Rico, October 1974 (with B. Lientz and R. Sarin).
13. "A Guide to the Choice and Estimation of Multi-attribute Utility Models," ORSA/TIMS Joint National Meeting, Las Vegas, November 17-19, 1975 (with R. Sarin).
14. "Planning and Scheduling for Academic Departments," Association for Institutional Research 1976 Forum, Los Angeles, May 4, 1976 (with John M. Mulvey).
15. Chairman, Session on Applications of Management Science in Education, ORSA/TIMS Joint National Meeting, San Francisco, May 9, 1976.
16. "An Axiomatization of Cardinal Additive Conjoint Measurement Theory," ORSA/TIMS Joint National Meeting, Atlanta, November 7-9, 1977 (with R. Sarin).
17. "Cardinal Preference Aggregation Rules for the Case of Certainty," Public Choice Society Meeting, New Orleans, March 3-5, 1978 (with R. Sarin).
18. "A Critical Evaluation of Applications of Multiple Objective Mathematical Programming Methods," TIMS/ORSA Joint National Meeting, New Orleans, May 2, 1979.
19. Chairman, Session on Applying Decision Analysis to Regulatory Decisions, TIMS/ORSA Joint National Meeting, New Orleans, May, 1979.
20. Chairman, Session on Corporate and Public Applications of Decision Analysis, TIMS XXIV International Meeting, Hawaii, June 18-22, 1979.
21. "A Comparative Evaluation of Three Procedures for Assessing Preference Functions," TIMS XXIV International Meeting, Hawaii, June 18-22, 1979 (with R. Sarin and K. Nair).
22. "Relative Risk Aversion," ORSA/TIMS National Meeting, Washington, D.C., May 5, 1980.

23. "A Hazard Management System for Asbestos Exposure," ORSA/TIMS National Meeting, Washington, D.C., May 5, 1980.
24. "Application of Decision Analysis to Hazard Management Problems," (with William F. Webster), TIMS/ORSA Colorado Springs Joint National Meeting, November 1980.
25. Chairman, Session on the Interface Between Behavioral and Normative Decision Theory, TIMS/ORSA Houston Joint National Meeting, October 1981.
26. "An Application of Measurable Multiattribute Value Functions to the Evaluation of Program Planning Contractors," TIMS/ORSA Joint National Meeting, October 1981 (with W. Lorber).
27. "Tinker Toys and Christmas Trees: Opening a New Merchandising Package for Amoco Oil Company," Finalist in the 1982 Competition of the College for the Practice of Management Science, TIMS/ORSA Joint National Meeting, Detroit, April 1982 (with R. N. Lund).
28. "A Theoretical and Empirical Investigation of Relative Risk Aversion," TIMS/ORSA Joint National Meeting, Chicago, April 25, 1982 (with William Webster).
29. "Models of Risk and Risk Preference," TIMS/ORSA Joint National Meeting, San Francisco, May 1984 (with R. K. Sarin).
30. "Review of Interactive Approaches for Optimization with Multiple Criteria," TIMS/ORSA Joint National Meeting, Dallas, Texas, November 1984.
31. Chairman, Session on Recent Advances in Decision Analysis Software, TIMS/ORSA Joint National Meeting, Dallas, Texas, November 1984.
32. "A Micro-Computer Based Paradigm for Studying Maintenance Decisions," TIMS/ORSA Joint National Meeting, Dallas, Texas, November 1984 (with D. Kleinmuntz).
33. "A Tutorial on Decision Analysis Software," TIMS/ORSA Joint National Meeting, Boston, Massachusetts, May 1985.
34. Chairman, Session on Recent Applications of Decision Analysis Software, TIMS/ORSA Joint National Meeting, Dallas, Texas, November 1985.
35. "Determining the Value of Information in Decision Analysis Software," TIMS/ORSA Joint National Meeting, Los Angeles, California, April 1986 (with David W. Franke and Jannelle Imken).
36. "Sampling Issues and Biases in Utility Function Assessment," TIMS/ORSA Joint National Meeting, Los Angeles, California, April 1986 (with Peter C. Anselmo and Toshiyuki Sueyoshi).
37. "Solution Strategies for Large Decision Trees," TIMS/ORSA Joint National Meeting, Miami Beach, October 27-29, 1986 (with John B. Larsen and Don N. Kleinmuntz).
38. "A Synthesis of Decision Analysis and the CAPM," TIMS/ORSA Joint National Meeting, Miami Beach, October 27-29, 1986 (with Peter C. Anselmo).
39. "Decomposition in Subjective Probability Assessment -- Conditional Elicitation's" TIMS/ORSA Joint National Meeting, Miami Beach, October 27-29, 1986 (with H.V. Ravinder and Don N. Kleinmuntz).
40. "A Rationale for Structuring a Hierarchy of Objectives," TIMS/ORSA Joint National Meeting, New Orleans, Louisiana, May 4-6, 1987 (with Don N. Kleinmuntz and H. V. Ravinder).
41. "Teaching MCDM: Experiences, Deceptions and Future," panel discussion with E. Jacquet-Lagrange (France), A. Pearman (U.K.), B. Roy (France), and Ph. Vincke (Belgium), Third ESIGMA Meeting, Paris, France, July 4, 1988.
42. "Capital Budgeting Based on a Synthesis of the CAPM and Decision Analysis" EURO IX-TIMS XXVIII International Meeting, Paris, France, July 6, 1988 (with Peter C. Anselmo).
43. Panel Discussion on Multiple Criteria Decision-Making and Multi-attribute Utility Theory, ORSA/TIMS Joint National Meeting, NYC, Oct. 16-19, 1989 (with P. Fishburn, R. Steuer, J. Wallenius, and S. Zionts).
44. "Estimating the Value of Information Provided by Oil and Gas Exploration," ORSA/TIMS Joint National Meeting, New York, Oct. 16-18, 1989 (with R. Lund, J. Larsen, V. Kumar, and R. Leone).
45. "Why the AHP is like the MAUT!" ORSA/TIMS Joint National Meeting, New York, Oct. 16-18, 1989.
46. "Design Considerations in ARBORIST," TIMS/ORSA Joint National Meeting, Philadelphia, Oct. 29-31, 1990.
47. "A Preference-Dependent Measure of Risk," ORSA/TIMS Joint National Meeting, Phoenix, October 31-November 3, 1993 (with Jianmin Jia).
48. "A Risk-Value Theory and Applications," INFORMS National Meeting, Los Angeles, April 23-26, 1995 (with Jianmin Jia).

49. "Advances in Risk-Value Studies," INFORMS National Meeting, New Orleans, October 29-November 1, 1995 (with Jianmin Jia).
50. "A Methodology for the Evaluation of Alternatives for the Disposition of Weapons-Grade Plutonium," American Nuclear Society Winter Meeting, San Francisco, October 29-31, 1995 (with J. Butler and J. Jia).
51. "A Proposed Methodology for the Analysis and Selection of Alternatives for the Disposition of Surplus Plutonium," International Meeting on Military Conversion and Science: Utilization of the Excess Weapons Plutonium: Scientific, Technological, and Socio-Economic Aspects, Villa Como, Como, Italy, March 20 (with J. Butler, J. Jia, and T. Edmunds).
52. Panelist: Pitfalls of Governmental Applications of Decision Analysis, INFORMS, Washington, D.C., May 5-6, 1996.
53. "A Decision Analysis for the Selection of Alternatives for the Disposition of Surplus Plutonium," American Nuclear Society Annual Meeting, Reno, Nevada, June 16-20, 1996 (with J. Butler, T. Edmunds, and J. Jia).
55. "Choice Based on Risk-Value Tradeoffs," 14th World Conference on Operational Research - IFORS 1996, Vancouver, B.C., July 8-12, 1996 (with Jianmin Jia).
56. "A Market-Based Exponential Utility Function for a Firm," INFORMS National Meeting, Atlanta, November 3-6, 1996 (with Peter C. Anselmo).
57. "Measures of Perceived Risk," INFORMS, San Diego, Calif., May 1997 (with J. Jia and J. Butler).
58. "Reducing the Cognitive Load and Recognizing Judgmental Error in Applications of Multiattribute Utility Theory using Simulation," INFORMS National Meeting, San Diego, May 4-7, 1997 (with J.C. Butler and J. Jia).
59. "Measures of Perceived Risk," INFORMS National Meeting, San Diego, May 4-7, 1997 (with J. Jia and J.C. Butler).
60. "Generalized Disappointment Models," FUR VII 8th International Conference on the Foundations & Applications of Utility, Risk, and Decision Theory, Mons, Belgium, July 1997 (with J. Jia and J. Butler).
61. "The Analysis and Selection of Alternatives for the Disposition of Surplus Weapons-grade Plutonium," International Workshop on Decision Analysis Applications, Madrid, Spain, July 1997 (with J. Butler, T. Edmunds, and J. Jia).
62. "A Multiattribute Utility Analysis of Alternatives for Plutonium Disposition," INFORMS Decision Analysis Cluster, Dallas, Texas, October 1997 (with J. Butler)
63. "Too Much of a Good Thing", INFORMS National Meeting, San Diego, May 4-6, 1997, (with D. Clyman and M. Walls)
64. "Perceived Risk", INFORMS National Meeting, San Diego, May 4-6, 1997,(with J. Butler and J. Jia).
65. "The IM Program", INFORMS National Meeting, San Diego, May 4-6, 1997.
66. "The Analysis and Selection of Alternatives for the Disposition of Surplus Weapons-grade Plutonium", International Workshop on Decision Analysis Applications, Real Academia de Ciencias Exactas, Fisicas y Naturales, Madrid, Spain, July 11-12, 1997.(with J. Butler).
67. "Generalized Disappointment Models", FUCAM, FUR VIII, Mons, Belgium, July 2-5.(with J. Jia and J. Butler)
68. "Value of Information as the Basis for Allocating Exploration Manpower," Oil and Gas Decision and Risk Analysis Symposium, November 20, 1998, Schlumberger and The University of Texas, Austin, Texas (with R. Lund).
69. "The Techno-MBA at The University of Texas," AACSB Annual Meeting, Atlanta, Georgia, March 1999.
70. "Dynamic Configuration of Business Processes Using Mobile Agents", INFORMS National Meeting, Maui, Hawaii, July 2001 (with Kerem Tomak).
71. "An Empirical Investigation of the Assumptions of Risk-Value Models", INFORMS National Meeting, Miami, November 2001 (with John Butler and Jianmin Jia).
72. "Valuation of Real Assets", Keynote Speaker, International Workshop on Decision-Making Under Uncertainty, Beijing, May 27 - 28, 2002.
73. "Valuation of Risky Assets", Invited Speaker, INFORMS Conference on Practice, Montreal, May 19-21, 2002.
74. "You Write the First Draft: A Tribute to my Colleagues", Frank P. Ramsey Award Lecture, INFORMS Meeting, San Jose, California, October 2002.

75. "Robust Simulation Methods for Valuation of Real Options", INFORMS National Meeting, Atlanta, October 20-21, 2003 (with Luiz Brandao).
76. "Separation of Market-Correlated and Private Uncertainties in Real Options Valuation", INFORMS National Meeting, October 20-21, 2003 (with Luiz Brandao and Joe Hahn).
77. "The Adoption of Multi-attribute Utility Theory for the Evaluation of Plutonium Disposition Options in the United States and Russia", INFORMS Edelman Competition, April 2004 (with John Butler, Alexander Chebeskov, Tom Edmunds, Jianmin Jia and Vladimir Oussanov)
78. "A Discrete-Time Approach for Valuing Real Options with Underlying Mean-Reverting Stochastic Processes", INFORMS National Meeting, October 24-25, 2004 (with Joe Hahn) Winner of student paper competition of the Decision Analysis Society for 2004.
79. "Using attributes to predict objectives in preference models", (with J.C. Butler and J. Jia), MCDM International Meeting, Chania, Greece, July 2006.
80. "Decision Analysis: Foundations in Mathematics, Science, and Engineering", Panel Discussion, INFORMS National Meeting, October 2006.
81. M. Chen and J. Dyer, "Inevitable Disappointment in Projects Selected Based on Forecasts", SPE Hydrocarbon Economics and Evaluation Symposium, Dallas, Texas, April 1-3 2007.
82. J. Dyer, "Risk Analysis as Decision Support", Society of Exploration Geophysicists, San Antonio, TX, September 23-28, 2007.

PUBLICATIONS

Books

- Buffa, E.S. and Dyer, J.S., Management Science/Operations Research: Model Formulations and Solutions Methods, Wiley/Hamilton Press, 718 pp., Second Edition, 1981.
- Buffa, E. and Dyer, J., Essentials of Management Science/Operations Research, Wiley/Hamilton Press, 525 pp., 1978.
- Dyer, J. and Shapiro, R., Management Science/Operations Research: Cases and Readings, John Wiley, Inc., 388 pp., 1982.

Chapters in Books

- Dyer, J.S., "An Empirical Investigation of a Man-Machine Interactive Approach to the Solution of the Multiple Criteria Problem," in Multiple Criteria Decision Making, Cochrane, J.L. and Zeleny, M. (eds.), University of South Carolina Press, 1973.
- Dyer, J.S., "Academic Resource Allocation Models at UCLA," 109-120, in Decision Models in Academic Administration, Heinlein, A.C. (ed.), Kent State University Press, 1974.
- Dyer, J.S. and Hoffenberg, M., "Evaluating the Quality of Working Life: Some Reflections on Production and Cost, and a Method for Problem Definition," 134-149. Quality of Working Life: Problems, Prospects and State of Art, Vol. I, Davis, L.E., Cherns, A.B. (eds.), Free Press: New York, 1975.
- Dyer, J.S. and Miles, R.F., "Alternative Formulations for a Trajectory Selection Problem for the Mariner Jupiter/Saturn 1977 Project," in Conflicting Objectives, Bell, D.A. Keeney, R.L., and Raiffa, H. (eds.), John Wiley, 1978.
- Dyer, J.S. and Sarin, R.K., "Cardinal Preference Aggregation Rules for the Case of Certainty," in Multiple Criteria Problem Solving: Theory, Methodology, and Practice, Zionts, S. (ed.), Springer-Verlag, 1978.
- Dyer, J.S. and Sarin, R.K., "Multicriteria Decision Making: An Expository Survey," in Encyclopedia of Computer Science and Technology, Belzer, J., Holzman, A.G., and Kent, A. (eds.), Marcel Dekker, Inc., 1978. Reprinted in Mathematical Programming, Holzman (ed.), Marcel Dekker, Inc., 1981.

- Articles on "Industrial Management," "Systems Engineering," and "Time and Motion Study," in a new, general encyclopedia published by Arete Publishing Company.
- Dyer, J. and Lory, E., "Risk Estimation," in Management Procedure for Assessment of Friable Asbestos Insulating Material, Office of the Chief of Naval Operations, Department of the Navy, Washington, D.C., 1981.
- Dyer, J.S. and Mulvey, J.M., "The Design of Integrated Optimization/Information Systems for Decision Support," In Building Decision Support System, J.L. Bennet (ed.), Addison-Wesley, 1982.
- Dyer, J.S., "An Asbestos Hazard Index for Managing Friable Asbestos Insulating Material," in V. Covello, J. Mumpower, P. Stallen, and V. Uppuluri (eds.), Environmental Impact Assessment, Technology Assessment, and Risk Analysis, Springer-Verlag, 1985.
- Dyer, J.S., and Larsen, J., "Using Multiple Objectives to Approximate Normative Models," in Thrall and Thompson (eds.), Normative Models in Economic Theory, 1985.
- Dyer, J.S., and Sarin, R.K., "Measuring Risk Attitudes in Risk Analysis," in V. Covello, J. Menkes, and J. Mumpower (eds.), Risk Evaluation and Management, Plenum Press, 1986.
- Dyer, J.S., "The Effects of Risk on Decision Making," in S. Zionts and B. Karpak (eds.), Multiple Criteria Decision Making and Risk Analysis Using Microcomputers, Springer - Verlag, New York, 1989.
- Dyer, J.S., "Decision Analysis in Contemporary Organizations: Comments and Conclusions," in I. Horowitz (ed.), Organization and Decision Theory, Kluwer Academic Publishers, Norwell, Mass., 1990.
- Larsen, J.B., and Dyer, J., "Dynamic Control of Operating Systems," in R.K. Sarin (ed.), Perspectives on Operations Management, Kluwer Academic Publishers, Norwell, Mass., 1992.
- Dyer, J.S., and Jia, J., "Preference Theory," Encyclopedia of Operations Research and Management Science, edited by S. Gass and C. Harris, Kluwer Academic Publishers, 1996.
- Jia, J., Dyer, J. S., and Guo, Y., "Decision Making Under Risk: A Mean-Variance Approach and Portfolio Selection," in Optimization Techniques and Applications, ICOTA '95, Vol. 2, edited by G. Liu, et al., World Scientific Publishing, Singapore, 1995.
- Dyer, J. S., "MAUT-Multiattribute Utility Theory", in Multiple Criteria Decision Analysis: State of the Art Surveys, edited by J. Figueira, S. Greco, and M. Ehrgott, Kluwer Academic Publishers, 2005
- Dyer, J. S., "Fundamental Uncertainty in Business: Real Options", in Reuben R. McDaniel, Jr. and Dean J Driebe, Eds Uncertainty and Surprise in Complex Systems, Springer-Verlag, Berlin, 2006.
- Butler, J. C., Chebeskov, A. N., Dyer, J. S., Edmunds, T. A., Jia, J., and Oussanov, V. I., "The United States and Russia Evaluate Plutonium Disposition Alternatives with Multittribute Utility Theory", in Ward Edwards, Ralph F. Miles, and Detlof von Winterfeldt, Eds., Advances in Decision Analysis, Cambridge University Press, 2007.
- Jia, J., and Dyer, J. S., "Decision Making Based on Risk-value Theory", in The Mathematics of Preference, Choice and Order: Essays in Honor of Peter C. Fishburn (Edited by Steven Brams, William V. Gehrlein and Fred S. Roberts). Published by Springer Publishing, 2008.
- Jia, J., J. S. Dyer, and J. Butler, "Axiomatic Definitions and Measures of Risk", in E. Melnick and B. Evertt, eds., Encyclopedia of Quantitative Risk Assessment, John Wiley and Sons, in press, 2008.

Jia, J., J. S. Dyer, and J. Butler, "Axiomatic Models of Perceived Risk", in E. Melnick and B. Evertt, eds., Encyclopedia of Quantitative Risk Assessment, John Wiley and Sons, in press, 2007.

Refereed Articles

Dyer, J.S. and Glover, F., "A Barge Scheduling Heuristic," Transportation Science, 3, 281-292
August 1970.

Dyer, J.S., "The Use of PPBS in a Public System of Higher Education: "Is It Cost-effective?"" Academy of Management Journal, 1, 3, 285-299, (September 1970). Reprinted in Planning - Programming - Budgeting, Lyden, F. and Miller, E. (eds.), Second Edition, Chicago.

Dyer, J.S., "Assessing the Effects of Changes in the Cost of Higher Education to Students," Socio-Economic Planning Sciences, 5, 307-316 (1971).

Burt, J., and Dyer, J.S., "Estimation of Travel Times in Multiple Mode Systems, Operational Research Quarterly, 22, 155-163 (1971).

Dyer, J.S., "Interactive Goal Programming", Management Science, 19, 1, 62-70 (1971).

Geoffrion, A., Dyer, J.S., and Feinberg, A., "An Interactive Approach for Multi-Criterion Optimization with an Application to the Operation of an Academic Department," Management Science, 19, 4, 357-368 (1972).

Dyer, J.S., "A Time-Sharing Computer Program for the Solution of the Multiple Criteria Problem," Management Science, 19, 12, 1379-1383 (1973).

Dyer, J.S., "A Procedure for Selecting Educational Goal Areas for Emphasis," Operations Research, 21, 3, 835-845 (1973).

Dyer, J.S., Farrel, W., and Bradley, P., "Utility Functions for Test Performance," Management Science, 20, 4, 507-519 (1973).

Dyer, J.S., "The Effects of Errors in the Estimation of the Gradient on the Frank-Wolfe Algorithm, with Implications for Interactive Programming," Operations Research, 22, 1, 160-174 (1974).

Bonnardeaux, J., Dolait, J., and Dyer, J.S., "The Use of the Nash Bargaining Model in Trajectory Selection," Management Science, 22, 7, 766-777 (1976).

Dyer, J.S. and Miles, R.F., "An Actual Application of Collective Choice Theory to the Selection of Trajectories for the Mariner Jupiter/Saturn 1977 Project," Operations Research, 24, 2, 220-224 (1976).

Dyer, J.S. and Mulvey, J.M., "An Integrated Optimization/Information System for Academic Departmental Planning," Management Science, 22, 12, 1332-1341 (1976).

Buffa, E.S. and Dyer, J.S., "Managerial Use of Dynamic Structural Models," Decision Sciences, 8, 73-94 (1977).

Dyer, J.S. and Mulvey, J.M. "Computerized Scheduling and Planning," New Directions for Institutional Research. Special Issue on Applying Analytic Methods to Planning and Management, Hopkins, D. and Schroeder, R. (eds.), 13, 67-86 (1977).

Dyer, J.S., Millen, R.A., and Morse, J.J., "A Framework for the Study of Work Settings," Management Science, 24, 13, 1393-1403 (1978).

- Dyer, J.S. and Sarin, R., "A Note on the Relationship Between Additive Conjoint and Difference Measurement," Journal of Mathematical Psychology, 18, 3, 270-272 (1978).
- Dyer, J.S. and Sarin, R., "Measurable Multiattribute Value Functions," Operations Research, 27, 4, 810-822 (1979).
- Dyer, J.S. and Sarin, R., "Group Preference Aggregate Rules Based on Strength of Preference," Management Science, 24, 9, 822-832 (1979).
- Dyer, J.S. and Sarin, R., "Relative Risk Aversion," Management Science, 28, 875-886 (1982).
- Dyer, J.S. and Lorber, W., "An Application of Measurable Multiattribute Value Functions to the Evaluation of Program Planning Contractors," OMEGA, 10, 6, 673-678 (1982).
- Dyer, J.S. and Lund, R.N., "Tinker Toys and Christmas Trees: Opening a New Merchandising Package for Amoco Oil Company," Interfaces, 12, 6, 38-52 (1982).
- Ravinder, H.V., Kleinmuntz, D.N., and Dyer, J.S. "The Reliability of Subjective Probability Assessments Obtained Through Decomposition." Management Science, 34, 2, 186-199 (1988).
- Dyer, J.S., "Remarks on the Analytic Hierarchy Process," Management Science, Vol. 35, No. 3, March 1990.
- Dyer, J.S., "A Clarification of Remarks on the Analytic Hierarchy Process," Management Science, Vol. 36, No. 3, March 1990.
- Dyer, J.S., Lund, R., Larsen, J., Kumar, V., and Leone, R., "A Manpower Allocation Model for Prioritizing Oil and Gas Exploration," Operations Research, Vol. 38, No. 3, May-June 1990.
- Dyer, J.S., Fishburn, P.C., Steuer, R.E., Wallenius, J., Zionts, S., Multiple Criteria Decision Making, Multiattribute Theory: The Next Ten Years," Management Science, Vol. 58, No. 5, May 1992. To be reprinted in The History of Management Thought: Management Science Volumes III, S. Eilon (ed), Dartmouth Publishing Company Limited (in press).
- Bowker, R.M., Dyer, J.S., Fitzsimmons, J.A., and Sinha, K.K., "A Strategic Planning Model for Oilfield Development Companies," International Journal of Production Economics, Vol. 27, 221-231, (1992).
- Wright, M.K., Stokes, L., and Dyer, J.S., "Reliability and Coherence of Causal, Diagnostic, and Joint Subjective Probabilities," Decision Sciences, Vol. 25, No. 516, September-December 1994.
- Walls, M.R., Dyer, J.S., and Morahan, T., "Decision Analysis of Exploration Opportunities in the Onshore U.S. at Phillips Petroleum Company," Interfaces, 25: 6 November-December 1995 (pp. 39-56).
- Walls, M.R. and Dyer, J.S., "Risk Propensity and Firm Performance: A Study of the Petroleum Exploration Industry," Management Science, Vol. 42, No. 7, July 1996.
- Jia, J. and Dyer, J.S., "A Standard Measure of Risk and Risk-Value Models," Management Science, Vol. 42, No. 12, December 1996.
- Dyer, J.S. and Jia, J., "Relative Risk-Value Models," European Journal of Operational Research, Vol.103, No. 1, pp. 170-185, 1997.
- Butler, J., Jia, J., and Dyer, J.S., "Simulation Techniques for the Sensitivity Analysis on Multi-criteria Decision Models," European Journal of Operational Research, Vol.103, No. 3, pp. 531-546, 1997.

- Inman, J.J., Dyer, J.S., and Jia, J., "A Generalized Utility Model of Disappointment and Regret Effects on Post-Choice Valuation," Marketing Science, Vol. 16, No. 2, 1997.
- Jia, J., Fischer, G.W., and Dyer, J.S., "Evaluating Multi-attribute Decision Quality: A Simulation Study," Journal of Behavioral Decision Making, Vol. 11, No. 2, 1998.
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EXHIBIT 2

Participation as an Expert Witness by James S. Dyer since January 1, 2006

Provided testimony for Electric Transmission, LLC in PUC Docket No. 33672 regarding the Commission Staff's Petition for designation of competitive transmission zones, April 2007.

Provided testimony for the Joint CREZ Transmission Plan of AEP Texas Central Company, AEP Texas North Company, Electric Transmission Texas, LLC, LCRA Transmission Services Corporation, Oncor Electric Delivery Company, LLC, Sharyland Utilities, LP, South Texas Electric Cooperative, and Trans-New Mexico Power Company in PUC Docket No. 35665 regarding the Commission Staff's Petition for the Selection of Utilities Responsible for the Transmission Improvements Necessary to Deliver Renewable Energy from the Competitive Transmission Zones, October 2008.

Provided expert witness service for Longfellow Exploration Partners, Limited and Longfellow Drilling Fund 1 Limited in the United States District Court for the Western District of Texas, Pecos Division, Case No. 4:09-CV-00045-RAJ, October 2010.