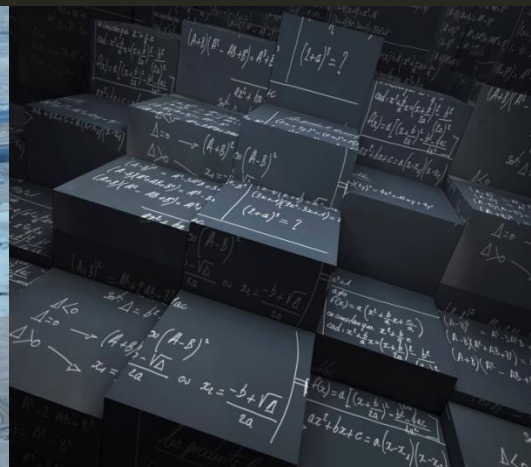
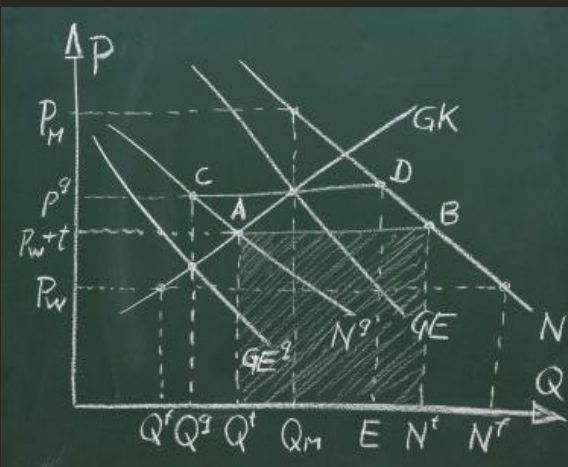


# ENVIRONMENTAL DAMAGES



***AREAS OF ECONOMIC DAMAGE ANALYSIS***

Advanced Analytical Consulting Group Inc. (“AACG”) provides economists, statisticians, accountants, environmental experts and advanced technology to determine the scope of economic damage from chemical exposures. Our economists have served as experts in environmental matters and have a strong understanding of the types of analysis required to measure the extent of environmental damage. In broad categories, our experience and expertise include the following:

- a. Direct economic impact to businesses
  - i. Short-run or immediate impacts to existing businesses
  - ii. Tax-related impacts associated with these losses
- b. Indirect economic impacts to businesses that support those directly impacted
  - i. Short-run or immediate impacts to existing businesses
  - ii. Tax-related impacts
- c. Long-run economic impacts
  - i. Reduced future development
  - ii. Even after environmental damage is completely remediated, economic damage may linger or in some cases never recover.
  - iii. Tax-related impacts.
- d. Potential health-related impacts due to any environmental exposure
  - i. These can be either short-run or long-run
  - ii. There can be state-related costs associated
- e. Use value of the natural amenities, including degradation of recreational use. Use value damage is the diminution of value people place on the use of an amenity that has been degraded.
  - i. Even though people may still use a natural resource, the value of the resource can be degraded by environmental changes.
  - ii. Tax-related impacts may also follow here.
- f. NON-use value or existence value

- i. Degradation of particular natural resources may create damage simply because people value the existence of the resource, even if they do not have direct exposure to the environmental resource. Analysis of this type of damage was a significant issue in the Exxon Valdez matter.

***COORDINATION OF ECONOMIC ANALYSIS AND EXPERTS.***

We offer expertise and deep experience in the management of large-scale economic damages investigations. We can assist you with the following coordination and administrative tasks among others.

- a. Developing a central economic impact study for various industries and regions, including a broad economic impact study for the region or sub-regions.
- b. Coordinating economic impact studies used for various sub-regions or sub-industries to monitor and improve consistency across studies and experts.
- c. Assisting in identification and vetting of experts in various sub-industries and sub-geographies.
- d. Assisting experts with model development and modifications that are specific to their analysis.
- e. Monitoring of assumptions in reports, deposition, and court testimony by team of experts to determine whether new issues arise across legal venues or experts.

***EXPERTS IN ENVIRONMENTAL DAMAGE, ECONOMIC IMPACT ANALYSIS, AND BUSINESS INTERRUPTION***

*Academic Experts:* We know that the choice of experts is an important and complex matter. Because of our extensive experience with experts and our knowledge of the economic and environmental literature, we often assist counsel with identifying appropriate experts. We provide the names of three well-known academic experts whom we think you will find of great value and who have agreed to work with AACG on this matter.

Prof. George Tolley, Emeritus Prof. of Economics at The University of Chicago: Professor Tolley has extensive experience in environmental issues and economic impact modeling among other topics. He received his Ph.D. from The University of Chicago. (See Appendix A for more details)

Prof. Don Coursey, Prof. at the Harris School of Public Policy at The University of Chicago. Professor Coursey developed some of the leading analyses in environmental damage valuation. He has served both government and private clients. Professor Coursey received his Ph.D. from the University of Arizona. (See Appendix A for more details)

Prof. Dennis J. Aigner, Prof. of business and environmental studies. Professor Aigner has performed extensive work about the economic impact of environmental issues. He received his Ph.D. from the University of California at Berkeley. (See Appendix A for more details)

Prof. Barton Smith, Prof. of Economics at University of Houston: Professor Smith has extensive experience modeling economic performance of the Gulf Coast economy. He is currently the Director of the Institute for Regional Forecasting at the University of Houston. A significant portion of his economic research involves the interaction between environmental pollution, regulations and economic performance. Professor Smith received his Ph.D. from The University of Chicago. (See Appendix A for more details)

*Consulting Experts:* In addition to academic experts, we have a team of consulting experts, many of whom have testified and have extensive experience in economic impact studies, and environmental issues.

Daniel S. Levy, PhD: Dr. Levy has experience in environmental damages, regional economic impact studies, coordination of large complex data sets, teams of experts, and supporting consultants. He has published research in environmental law and economics. Dr. Levy's work includes an article on environmental damages in *The University of Chicago Law Review*. He received his Ph.D. from The University of Chicago. Dr. Levy is National Managing Director of Advanced Analytical Consulting Group, Inc.

Constantijn (Stan) Panis, PhD: Dr. Panis has performed economic analysis and significant project management for large academic research projects, government related research projects, and litigation related work. He has extensive experience in economic and data modeling. He received his Ph.D. from the University of Southern California. Dr. Panis is with Advanced Analytical Consulting Group, Inc.

Stephen Graham: Mr. Graham has performed and coordinated multi-geography models to promote consistency across regions and over time. He has developed and coordinated multi-million dollar modeling efforts lasting multiple years. He completed all doctoral coursework for a Ph.D. at Texas A & M University. Mr. Graham is with Advanced Analytical Consulting Group, Inc.

Daniel Wetzel, CPA: Mr. Wetzel has significant experience in financial modeling and economic impact analysis. He received his M.B.A. from St. Louis University. Mr. Wetzel is with Alix Partners.

Brett Brandenburg, CPA: Mr. Brandenburg has performed financial analysis in complex litigation settings. He received his M.B.A. from Washington University in St. Louis. Mr. Brandenburg is with Alix Partners.

Peter Bernstein, MBA: Mr. Bernstein has performed economic litigation involving environmental matters. He completed his M.B.A. and all doctoral coursework for a Ph.D. at The University of Chicago. Mr. Bernstein is with RCF.

Donald Jones, PhD : Dr Jones' published work and research includes economic impact analysis and policy evaluations. Dr. Jones has also taught at major universities and held research positions at some of the Nation's leading research institutes. Dr. Jones received his Ph.D. from The University of Chicago.

Sabina L. Shaikh, PhD: Dr. Shaikh has performed economic analysis and cost-benefit analysis of public policy related to water contamination. She received her Ph.D. from the University of California at Davis. Dr. Shaikh is with RCF.

## Appendix A: Index of Experts

### Academic Economists

<b>Dennis J. Aigner, PhD Professor Emeritus Of Management And Economics And Former Dean Of The Paul Merage School Of Business At The University Of California, Irvine.</b>	<b>5</b>
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### Consulting Economists

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### Certified Public Accountants

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**ACADEMIC ECONOMISTS**

**DENNIS J. AIGNER, PHD PROFESSOR EMERITUS OF MANAGEMENT AND ECONOMICS AND FORMER DEAN OF THE PAUL MERAGE SCHOOL OF BUSINESS AT THE UNIVERSITY OF CALIFORNIA, IRVINE.**

Dennis J. Aigner is Professor Emeritus of Management and Economics and former Dean of The Paul Merage School of Business at the University of California, Irvine (UCI). From 2000 to 2005 he held the position of Dean and Bren Fellow in the Bren School of Environmental Science and Management at the University of California, Santa Barbara. He came to UC Irvine in August of 1988. Before that, he was Professor of Economics and Chairman of the Department of Economics at the University of Southern California (USC) in Los Angeles. He received his B.S. and Ph.D. degrees in Agricultural Economics from the University of California, Berkeley and holds an M.A. in Applied Statistics from that same institution. He was on the teaching faculties at the University of Illinois and the University of Wisconsin-Madison prior to his appointment at USC in 1976.

Professor Aigner's publication record includes several books and numerous articles on statistical and econometric methodology. He was founding editor of the *Journal of Econometrics*, and co-edited the journal for 20 years. His research interests include corporate environmental management, international economics, and trade and environment.

Aigner has served on many boards of directors of business and arts organizations in Orange County. For many years he directed the Orange County Executive Survey on behalf of GSM, a longitudinal study of business performance and attitudes. Since 2003, Aigner has been a member of the National Advisory Council to the USEPA Administrator on environmental issues relating to NAFTA.

**Present Position:**

Professor Emeritus of Economics, Paul Merage School of Business, University of California, Irvine

UCLA 1955-58, Engineering-Mathematics, No degree

UC Berkeley 1958-63: (1) Agricultural Economics, B.S. (1959); (2) Statistics, M.A. (1962); (3) Agricultural Economics, Ph.D. (1963)

**Relevant Work Experience:**

1960-62 Mathematical Statistician, USDA, Forest Service, Berkeley

1962-66 Assistant Professor of Economics, University of Illinois

1964-66 Director, Computer Lab, College of Business Administration, University of Illinois

1966-67 Associate Professor of Economics, University of Illinois

- 1967-70 Associate Professor of Economics, University of Wisconsin- Madison
- 1967-73 Director, Programming and Computation Service, Data and Computation Center for the Social Sciences, University of Wisconsin-Madison
- 1970-76 Professor of Economics, University of Wisconsin-Madison,
- 1970 Summer, Visiting Professor of Economics, University of Hawaii
- 1970-71 Visiting Professor, Center for Operations Research and Econometrics (CORE), Universite Catholique de Louvain (Belgium)
- 1971-76 Chairman, Social Systems Research Institute, University of Wisconsin-Madison
- 1976 Spring, Resident Consultant, The Rand Corporation, Santa Monica, California
- 1976-88 Professor of Economics, University of Southern California (USC)
- 1976-79 Co-Director, Modelling Research Group, USC
- 1978-79 Acting Chairman, Department of Economics, USC
- 1979-87 Chairman, Department of Economics, USC
- 1982 Fall, Visiting Professor, Department of Economics, University of Wisconsin-Madison
- 1985 Spring, Visiting Professor, Departments of Econometrics, University of Amsterdam and University of Geneva
- 1986 Fall, Visiting Professor, Department of Econometrics, University of Sydney
- 1988-97 Dean, Graduate School of Management, University of California, Irvine
- 1988-07 Professor of Economics, Graduate School of Management, University of California, Irvine
- 1997 Fall, Faculty Associate, Harvard Institute for International Development, Harvard University
- 1998-04 Associate Dean for Business Management, Donald Bren School of Environmental Science and Management, University of California, Santa Barbara
- 2000-01 Acting Dean, Donald Bren School of Environmental Science and Management, University of California, Santa Barbara
- 2001-05 Dean, Donald Bren School of Environmental Science and Management, University of California, Santa Barbara
- 2005-07 Adjunct Professor, Donald Bren School of Environmental Science and Management, University of California, Santa Barbara

**Teaching Areas:**

*ECONOMETRICS, STATISTICS, INTERNATIONAL ECONOMICS*

**Honors:**

Fulbright Scholar, Belgium, 1970-71

Fellow, Econometric Society (elected 1972)

H.I. Romnes Faculty Fellow, University of Wisconsin, 1976

American Statistical Association Visiting Lecturer in Statistics, 1980-1983

Fulbright Scholar, Israel, May 1983

Cited in: Who's Who in Economics (MIT Press) 1982, 1984; (Edward Elgar) 1999. Who's Who in America (Marquis Who's Who, Inc.) 1984- .

Albert S. Raubenheimer Award for Excellence in Scholarship, Teaching and Service, USC, 1985.

Award for Teaching Excellence, Division of Social Sciences and Communications, USC, 1986.

*Studies in Econometrics in Honor of Dennis J. Aigner*, a special issue of the *Journal of Econometrics*, 1993

Daniel G. Aldrich, Jr. Award for University Service, UCI, 1996

Bren Fellow in Business Management, UC Santa Barbara, 1998-2005

Distinguished Research Award, Argyros School of Business & Economics, Chapman University, 1999

International Professor in Environmental Management and Strategy, Graduate School of Business Administration and Leadership, Monterrey Institute of Technology (Mexico), 2001-08

Distinguished Research Fellow, UCLA Institute for the Environment, 2004-05

Alumnus of the Year, College of Natural Resources, Department of Agricultural & Resource Economics, UC Berkeley, 2010



**Publications:**

BOOKS, MONOGRAPHS, REPORTS:

*Principles of Statistical Decision-Making*, Macmillan, 1968.

*Basic Econometrics*, Prentice-Hall, 1971. Prentice-Hall series in International Management and series in Mathematical Economics.

*Latent Variables in Socioeconomic Models*, edited (with A.S. Goldberger), North-Holland Publishing Co., 1977.

*Modelling and Forecasting Time-of-Day and Seasonal Electricity Demands*, edited (with A. Lawrence), *Journal of Econometrics (Annals 1979-1)*, North-Holland Publishing Co., January 1979.

*Experimental Design in Econometrics*, edited (with C. Morris), *Journal of Econometrics (Annals 1979-2)*, North-Holland Publishing Co., September 1979.

*Modelling and Analysis of Electricity Demand by Time-of-Day*, edited, Report EPRI EA-1304, Electric Power Research Institute, Palo Alto, CA, December 1979.

*Electricity Demand and Consumption by Time-of-Use: A Survey* (with D. Poirier), Report EPRI EA-1294, Electric Power Research Institute, Palo Alto, CA, December 1979.

*Specification and Estimation of Frontier Production, Profit and Cost Functions*, edited (with P. Schmidt), *Journal of Econometrics (Annals 1980-2)*, North-Holland Publishing Co., May 1980.

*Welfare Econometrics of Peak-Load Pricing for Electricity*, edited, *Journal of Econometrics (Annals 1984-3)*, North-Holland Publishing Co., September 1984.

*Topics in Applied Regression and Time Series Analysis*, edited, *Journal of Econometrics (Annals 1987)*, North-Holland Publishing Co., May 1987.

*Causality*, edited (with A. Zellner), *Journal of Econometrics (Annals 1988)*, North-Holland Publishing Co., September/October 1988.

*Latent Variables Models*, edited (with M. Deistler), *Journal of Econometrics (Annals 1989)*, North-Holland Publishing Co., May 1989.

*Contributions to Econometric Methodology in Honor of T. W. Anderson*, edited, *Journal of Econometrics (Annals 1990)*, North-Holland Publishing Co., April/May 1990.

ARTICLES:

"An Estimation Procedure for Range Composition Problems," *Journal of the American Statistical Association*, Vol. 60 (March 1965) pp. 308-19.

"Errors of Measurement and Least Squares Estimation in a Simple Recursive Model of Dynamic Equilibrium," *Econometrica*, Vol. 34 (April 1966), pp. 424-32.

"An Interpretive Input Routine for Linear Programming," *Communications of the Association for Computer Machinery*, Vol. 10 (January 1967), pp. 23-26.

"On the Determinants of Income Equality" (with A.J. Heins), *American Economic Review*, Vol. LVII (March 1967), pp. 12-25.

"On the Measurement of Income Equality" (with A.J. Heins), *Review of Income and Wealth*, Series 13 (March 1967), pp. 12-25.

"A Simple Model of Information and Lending" (with C.M. Sprenkle), *Journal of Finance*, Vol. XXIII (March 1968), pp. 151-66.

"On Estimating the Industry Production Function" (with S. Chu), *American Economic Review*, Vol. LVIII (September 1968), pp. 826-39.

"A Linear Approximator for the Class Marks of a Grouped Frequency Distribution with Especial Reference to the Unequal Interval Case," *Technometrics*, Vol. 10 (November 1968), pp. 793-809.

"The Determinants of Member Bank Borrowing: A Critique" (with W.R. Bryan), *Journal of Finance*, Vol. XXIII (December 1968), pp. 832-7.

"Problems in Making Inferences from the Coleman Report: Comment," *American Sociological Review*, Vol. 35 (April 1970), pp. 249-52.

"Estimation of Pareto's Law from Grouped Observations" (with A.S. Goldberger), *Journal of the American Statistical Association*, Vol. 65 (June 1970), pp. 341-51.

"Cross-Section and Time Series Tests of the Permanent Income Hypothesis" (with J. Simon), *American Economic Review*, Vol. LX (June 1970), pp. 712-23.

"The Estimation of Moments for a Pareto Distribution Subject to Both Sampling and Grouping Errors," *Review of the International Statistical Institute*, Vol. 38, No. 2 (1970), pp. 210-20.

"A Specification Bias Interpretation of Cross-Section vs. Time Series Parameter Estimates" (with J. Simon), *Western Economic Journal*, Vol. 8 (June 1970), pp. 144-61.

"On the Log-Quadratic Law of Production" (with S.F. Chu and M. Frankel), *Southern Economic Journal*, Vol. XXXVI (July 1970), pp. 32-9.

"On the Specification Bias for k-Class Estimators" (with S.F. Chu), *Econometric Annual of the Indian Economic Journal*, Vol. 17 (1970), pp. 671-89.

"A Model of Short-Run Bank Behavior" (with W.R. Bryan), *Quarterly Journal of Economics*, Vol. 85 (February 1971), pp. 97-118.

"Safety Margins and Profit Maximization in the Theory of the Firm" (with R.H. Day and K.R. Smith), *Journal of Political Economy*, Vol. 79 (November/December 1971), pp. 1293-1301.

"A Compendium on Estimation of the Autoregressive-Moving Average Model from Time Series Data," *International Economic Review*, Vol. 12 (October 1971), pp. 348-371.

"Bounding Constraints in Certain Linear Programming Problems and the Principle of Safety First," *European Economic Review*, Vol. 3 (April 1972), pp. 71-81.

"A Note on Verification of Computer Simulation Models," *Management Science: Theory*, Vol. 18 (July 1972), pp. 615-19.

"An Errors-in-Variables Model in Which Least Squares is Consistent," *International Economic Review*, Vol. 14 (February 1973), pp. 256-7.

"Simulation and Aggregation: A Reconsideration" (with S.M. Goldfeld), *Review of Economics and Statistics*, Vol. LV (February 1973), pp. 49-60.

"Regression with A Binary Independent Variable Subject to Errors of Observation," *Journal of Econometrics*, Vol. 1 (March 1973), pp. 49-60.

"On the Estimation of an Econometric Model of Short-Run Bank Behavior," *Journal of Econometrics*, Vol. 1 (September 1973), pp. 201-208.

"On Optimal Financing of Cyclical Cash Needs" (with C.M. Sprenkle), *Journal of Finance*, Vol. 28 (December 1973), pp. 1249-53.

"Estimation and Prediction from Aggregate Data when Aggregates are Measured More Accurately Than Their Components" (with S.M. Goldfeld), *Econometrica*, Vol. 42 (January 1974), pp. 113-134.

"Parameter Estimation from Cross-Section Observations on an Elementary Queueing System," *Operations Research*, Vol. 22 (March-April 1974), pp. 422-28.

"An Appropriate Econometric Framework for Estimating a Labor Supply Function from the SEO File," *International Economic Review*, Vol. 15 (February 1974), pp. 59-68.

"Asymptotic Minimum-MSE Prediction in the Cobb-Douglas Model with a Multiplicative Disturbance Term," *Econometrica*, Vol. 42 (July 1974), pp. 737-48.

"MSE Dominance of Least Squares with Errors of Observation," *Journal of Econometrics*, Vol. 2 (December 1974), pp. 365-72.

"Identification and Normalization: A Note" (with T. Sawa), *Journal of Econometrics*, Vol. 2 (December 1974), pp. 389-92.

"On the Explanatory Power of Dummy Variable Regression" (with A.S. Goldberger and G. Kalton), *International Economic Review*, Vol. 16 (June 1975), pp. 503-10.

"On the Estimation of Production Frontiers" (with T. Amemiya and D.J. Poirier), *International Economic Review*, Vol. 16 (June 1975), pp. 377-96.

"Identification and Estimation of Dynamic Shock-Error Models" (with A. Maravall), in *Latent Variables in Socioeconomic Models*, D.J. Aigner and A.S. Goldberger (eds.), North-Holland Publishing Co., 1977, pp. 349-63.

"Statistical Theories of Discrimination in Labor Markets" (with G. Cain), *Industrial and Labor Relations Review*, Vol. 30 (January 1977), pp. 175-87. (Reprinted in O. Ashenfelter and K. Hallock (eds.), *The International Library of Critical Writings in Economics: Labor Economics*, Edward Elgar Publishing Ltd., 1995.)

"Application of Pre-Test and Stein Estimators to Economic Data" (with G. Judge), *Econometrica*, Vol. 45 (July 1977), pp. 1279-88.

"Formulation and Estimation of Stochastic Frontier Production Functions" (with C.A.K. Lovell and P. Schmidt), *Journal of Econometrics*, Vol. 6 (July 1977), pp. 21-38.

"Bayesian Analysis of Optimal Sample Size and a Best Decision Rule for Experiments in Direct Load Control," *Journal of Econometrics (Annals 1979-1)*, Vol. 9 (January 1979), pp. 209-21.

"A Brief Introduction to the Methodology of Optimal Experimental Design," *Journal of Econometrics (Annals 1979-2)*, Vol. 11 (September 1979), pp. 7-26.

"Sample Design for Electricity Pricing Experiments: Anticipated Precision for a Time-of-Day Pricing Experiment," *Journal of Econometrics (Annals 1979-2)*, Vol. 11 (September 1979), pp. 195-205.

"Correcting for Truncation Bias in the Analysis of Experiments in Time-of-Day Pricing of Electricity" (with Jerry A. Hausman), *The Bell Journal of Economics*, Vol. 11 (Spring 1980), pp. 131-42. (Reprinted in E. Stromsdorfer and G. Farkas (eds.), *Evaluation Studies Review Annual*, Vol. 5, Sage Publications, Inc., 1980).

"Industrial and Commercial Demand for Electricity by Time-of-Day: A California Case Study" (with C. Chung), *The Energy Journal*, Vol. 2 (July 1981), pp. 91-110.

"Testing the Joint Billing Effect Hypothesis" (with D. Keane), *The Energy Journal*, Vol. 3 (July 1982), pp. 113-28.

"Southern California Edison's Domestic Time-of-Use Experiment" (with L. Lillard), *Award Papers in Public Utility Economics and Regulation*, Institute of Public Utilities, Michigan State University, 1982, pp. 181-233.

"An Analysis of Commercial and Industrial Response to Time-of-Use Rates" (with J. Hirschberg), *The Energy Journal*, Vol. 4 (1983), pp. 103-26.

"Econometric Modelling with Latent Variables" (with A. Kapteyn, C. Hsiao, and T. Wansbeek), *Handbook of Econometrics*, Vol. 2, edited by Zvi Griliches and Michael Intriligator, North-Holland Publishing Co., 1984, pp. 1321-93.

"Time-of-Day Electricity Consumption Response to Temperature and the Ownership of Air Conditioning Appliances" (with L. Lillard), *Journal of Business and Economic Statistics*, Vol. 2 (January 1984), pp. 40-53.

"Measuring Peak-Load Response from Experimental Data" (with L. Lillard), *Journal of Business and Economic Statistics*, Vol. 2 (January 1984), pp. 21-39.

"Conditional Demand Analysis for Estimating Residential End-Use Load Profiles: A Preliminary Analysis" (with C. Sorooshian and P. Kerwin), *The Energy Journal*, Vol. 5 (July 1984), pp. 81-98.

"Estimation of Time-of-Use Pricing Response in the Absence of Experimental Data: An Application of the Methodology of Data Transferability" (with E. Leamer), *Journal of Econometrics (Annals 1984-3)*, Vol. 26 (September/October 1984), pp. 205-28.

"The Welfare Econometrics of Peak-Load Pricing for Electricity," *Journal of Econometrics (Annals 1984-3)*, Vol. 26 (September/October 1984), pp. 1-16.

"The Residential Time-of-Use Pricing Experiments: What Have We Learned?" Chapter 1 in *Social Experimentation*, edited by Jerry A. Hausman and David Wise, University of Chicago Press, 1985, pp. 11-48.

"Commercial/Industrial Customer Response to Time-of-Use Electricity Prices: Some Experimental Results" (with J.G. Hirschberg), *The Rand Journal of Economics*, Vol. 16 (Autumn 1985), pp. 341-55.

"On Student Evaluation of Teaching Ability" (with F. Thum), *Journal of Economic Education*, Vol. 17 (Fall 1986), pp. 243-66.

"Optimal Experimental Design for Error Components Models" (with P. Balestra), *Econometrica*, Vol. 56 (July 1988), pp. 955-71.

"Me and My Shadow: Estimating the Size of the U.S. Underground Economy from Time Series Data" (with F. Schneider and D. Ghosh), Chapter 14 in W. Barnett, et al. (eds.), *Dynamic Econometric Modelling*, Cambridge University Press, 1988, pp. 297-334. Reprinted in: *The Economics of the Hidden Economy*, edited by Friedrich Schneider, Edward Elgar, 2008.

"On Econometric Methodology and the Search for Causal Laws", *The Economic Record*, Vol. 64 (December 1988), pp. 323-26.

"Self-Selection in the Residential Electricity Time-of-Use Pricing Experiments" (with K. Ghali), *Journal of Applied Econometrics*, Vol. 4 (December 1989), pp. S131-S144.

"Latent Variables", in J. Eatwell, et al. (eds.), *The New Palgrave: Econometrics*, Macmillan, 1990, pp. 118-122.

"Sample Design Considerations for Telephone Time-of-Use Pricing Experiments with an Application to OCT-Australia" (with D. Fiebig), in A. deFontenay, et al. (eds.), *Telecommunications Demand Modelling*, North-Holland Publishing Co., 1990, pp. 279-298.

"Experimental Design for Direct Metering of Residential Electricity End-Uses" (with P. Schonfeld), Chapter 14 in J. Gabszewicz, et al. (eds.), *Economic Decision-Making: Games, Econometrics and Optimization*, Elsevier North-Holland, 1990, pp. 303-325.

"A Random Coefficient Approach to the Estimation of Residential End-Use Load Profiles" (with D. Fiebig and R. Bartels), *Journal of Econometrics*, Vol. 50 (December 1991), pp. 297-327.

"Data Pooling and Self-Selection: A Mixed Effects Hierarchical Approach" (with K. Ghali), Chapter 5 in W.E. Griffiths, et al. (eds.), *Readings in Econometric Theory and Practice*, North-Holland Publishing Co., 1992, pp. 103-42.

"The Response of Small and Medium-Size Business Customers to Time-of-Use (TOU) Rates in Israel" (with J. Newman and A. Tishler), *Journal of Applied Econometrics*, Vol. 9 (1994), pp. 283-304.

"The Response to Residential Time-of-Use Electricity Rates in Israel" (with M. Amit and A. Tishler), Chapter 35 in D. Berry, et al. (eds.), *Bayesian Analysis in Statistics and Econometrics: Essays in Honor of Arnold Zellner*, John Wiley & Sons, 1996, pp. 409-22.

"Statistical Sampling and Analysis in Litigation", Chapter 14 in D. Slottje (ed.), *The Role of the Academic Economist in Litigation Support*, Elsevier Science Publishers, 1999, pp. 229-40.

"Beyond Compliance: Sustainable Business Practices and the Bottom Line" (with J. Hopkins and R. Johansson), *American Journal of Agricultural Economics*, Vol. 85 (2003), pp. 1126-39.

"Does Corporate Social Responsibility Have to Be Unprofitable?", in B. Hay, R. Stavins and R. Vietor (eds.), *Environmental Protection and the Social Responsibility of Firms*, RFF Press, 2005, pp. 132-36.

#### WORK IN PROGRESS

"Residue Cover and Chemical Use on U.S. Corn Farms" (with R. Johansson and J. Hopkins), 2008.

#### **Grant History:**

NSF "The Computation and Data Library Capabilities for Research in the Social Sciences" (with Richard Day), April 1, 1968 to March 31, 1970. \$232,900.

NSF "An Econometric Investigation of Short-Run Bank Behavior," February 1, 1970 to July 31, 1972. \$62,500.

NSF "Computation and Data Library Capabilities for Social Science Research," January 1, 1971 to December 31, 1972. \$110,000.

NSF "Structural Modelling with Unobserved Variables" (with Arthur S. Goldberger), September 1, 1973 to August 31, 1976. \$146,000.

NSF "The Role of Linear Hierarchical Models in Applied Econometrics"  
(with Yoel Haitovsky), July 1, 1979 to April 30, 1981. \$115,951.

NSF "Development of a Generic Econometric Model for Assessing the  
Welfare Implications of Time-of-Day Pricing for Households," March  
1, 1984 to February 28, 1986. \$75,187. Extension to August 31,  
1986: \$19,454.

EPA "Workshop on Capital Markets and Environmental Performance", September 1, 1998 to August 31,  
1999. \$18,020. Extension to August 31, 2000. Renewal to 6/30/01. \$19,876.

Packard Foundation, "Biennial Survey of California Firms' Environmental Compliance & Performance,"  
January 1, 2000 to March 15, 2001. \$50,000.

EPA "Workshops on Capital Markets and Environmental Performance", September 15,  
2001 to September 14, 2006. \$443,571.

UC-MEXUS "Research on Sustainability and Competitiveness in Mexico", October 1, 2009 to March 31,  
2011, \$24,900.

**Conferences & Presentations (recent):**

"Making Effective Use of Faculty in Developing a Strategic Plan," AACSB Annual Meeting, Los  
Angeles, April 1996 (session co-leader).

"Measuring Performance in Higher Education," UC Management Institute, July 1996.

"The Elusive Notion of Leadership," Graduate School of Business Administration and Leadership,  
Monterrey Institute of Technology (Mexico), March 1997.

"Business and the Environment: Toward a New Relationship," Graduate School of Business  
Administration and Leadership, Monterrey Institute of Technology (Mexico), May 1999.

"Business and the Environment: Toward a New Relationship," Central American Institute of Business  
Administration (Costa Rica), May 1999.

"Business and the Environment: Toward a New Relationship," Korea Advanced Institute of Science &  
Technology, May 2000.

"Research Roundtable: Finance," BELL Conference, Nashville, TN, July 2000. (Session designer and  
facilitator.)

"The Business Case for Sustainability", Graduate School of Business Administration and Leadership,  
Monterrey Institute of Technology (Mexico), May 2002.

“The Business Case for Sustainability and Some Implications for Public Policy”, State Legislative Leaders Foundation Conference, Santa Barbara CA, March 2003

“Beyond Compliance: Sustainable Business Practices and the Bottom Line”, Waugh Memorial Lecture, American Agricultural Economics Association, Montreal, Canada, July 2003.

“Aspects of Corporate Sustainable Development and Their Linkage to Financial Performance”, International Seminar on Corporate Social and Environmental Responsibility, Mexico City, November 2003.

“Corporate Social Responsibility and the Bottom Line”, Institute of Economic Policy Research, University of Southern California, March 2005.

“Corporate Social Responsibility and the Bottom Line”, Graduate School of Business Administration and Leadership, Monterrey Institute of Technology (Mexico), May 2005.

“The Empirical Relationship Between Corporate Environmental and Financial Performance: A Synthesis” Luigi Solari Memorial Lecture, Department of Econometrics, University of Geneva, November 2006.

“The Empirical Relationship Between Corporate Environmental and Financial Performance: A Synthesis”, Center for Operations Research & Econometrics, Catholic University of Louvain, Belgium, December 2006.

“Business and the Environment”, Saddleback College Emeritus Institute, February 2008.

“Corporate Social Responsibility and the Bottom Line”, Instituto Tecnológico Autónomo de México (ITAM) School of Business, February 2008.

“Corporate Social Responsibility and the Bottom Line”, Department of Agricultural & Resource Economics, UC Berkeley, April 2010.

**Professional Service (recent):**

Academic Program Review Team, College of Business, Arizona State University, 1996.

Panel to Study the Research Program of the Economic Research Service, Committee on National Statistics, National Research Council, 1997-1998.

American Assembly of Collegiate Schools of Business, Accreditation Site Visit Team (Chair), Simon School of Business, University of Rochester, 1998.

Study Co-Director, Orange County Executive Survey, University of California Irvine, 1994-98; Director, 1999-2004.

Study Director, Orange County Executive Survey, Chapman University, 2005-06



National Advisory Committee to the U. S. Representative to the North American Commission for Environmental Cooperation, 2003-09.

**Other Service (recent):**

Design Team, California Virtual University Initiative, 1997-98.

Director, Green Coast Foundation, 2005-2008.

**Community Service (recent):**

Jr. Achievement of Southern California, Board of Governors, 1993-1998.

Association for Corporate Growth, Advisory Board, 1992-1997.

Board of Trustees, World Affairs Council of Orange County, 1995-2001.

Board of Trustees, South Coast Repertory, 1996-1999.

Board of Directors, Community Environmental Council of Santa Barbara, 2004-05.

**DON L. COURSEY, PHD AMERITECH PROFESSOR OF PUBLIC POLICY STUDIES, HARRIS SCHOOL AND THE COLLEGE, THE UNIVERSITY OF CHICAGO**

Don L. Coursey is the Ameritech Professor of Public Policy Studies in the Harris School and the College at The University of Chicago and served as dean of the Harris School from 1996 to 1998. He is an experimental economist whose research elicits reliable measures of preferences and monetary values for public goods, such as environmental quality. Coursey's research has focused on demand for international environmental quality, environmental legislation in the United States, and public preferences for environmental outcomes relative to other social and economic goals.

Coursey led an investigation of environmental equity in Chicago, documenting the prevalence of hazardous industrial sites in poor, minority neighborhoods. He has examined public expenditures on endangered species. He has also consulted with the National Oceanic and Atmospheric Administration in the wake of the Exxon Valdez oil spill to develop federal response guidelines for environmental disasters.

He received both a B.A. in mathematics and a Ph.D. in economics from the University of Arizona and has previously taught at the University of Wyoming and Washington University in St. Louis, MO. He has received the Burlington-Northern Foundation Award for Distinguished Achievement in Teaching; Greater St. Louis Award for Excellence in University Teaching; John M. Olin School of Business Teacher of the Year Award in 1989 and 1990; and has been named Professor of the Year for six consecutive years by Harris School students.

**BARTON A. SMITH, PHD, INSTITUTE FOR REGIONAL FORECASTING UNIVERSITY OF HOUSTON DEPARTMENT OF ECONOMICS**

**EDUCATION**

University of Chicago, Economics, Ph.D., 1974  
University of Chicago, Economics, M.A., 1971  
Brigham Young University, Political Science, B.A., 1969

**PROFESSIONAL MEMBERSHIPS**

American Economics Association  
Western Economics Association  
Southern Economics Association  
Texas Economic and Demographic Association

**ACADEMIC AND PROFESSIONAL EXPERIENCE**

1999-present Director, Institute for Regional Forecasting, University of Houston  
1989-present Professor, Department of Economics, University of Houston  
1987-present Senior Research Economist, Center for Public Policy, University of Houston  
1991 Visiting Professor of Economics, Madrid Business School, Madrid, Spain  
1987-1990 Chairman, Department of Economics, University of Houston  
1984-1987 Director, Center for Public Policy, University of Houston  
1982-1983 Visiting Associate Professor, Economics Department, Brigham Young University, Provo, Utah  
1979-1988 Associate Professor, Economics Department, University of Houston  
1978-1981 Program Director, Socioeconomic Program, Southwest Center for Urban Research  
1973-1979 Assistant Professor, Economics Department, University of Houston  
1973-1977 Research Associate, Institute for Urban Studies, University of Houston  
1971-1973 Associate Faculty, Indiana University Northwest, Teaching Part-time, Money/Banking, Principles  
1969 Research Assistant, Columbia Region Association of Governments, Portland, Oregon  
1968-1969 Teaching Assistant, Economics Department, Brigham Young University

**PUBLICATIONS**

**Books**

- Clearing Houston's Air: An Economic Evaluation of Clean Air Act Compliance, Strategies and Alternatives, Texas Public Policy Foundation, San Antonio, Texas, 2001.
- Handbook on the Houston Economy, Center for Public Policy, University of Houston, Houston, Texas, 1989.
- Handbook on the Houston Economy, Center for Public Policy, University of Houston, Houston, Texas, 1986.

- The Status of Research into Racial Discrimination and Segregation in American Housing Markets. (with J. Yinger, G. Galster, and F. Eggers) Washington, D.C.: U.S. Department of Housing and Urban Development, 1979.
- Principles for Local Environmental Management. (with P.G. Rowe, J. Mixon, G.L. Callaway, J. Blackburn and J.L. Gervirtz) Cambridge, Massachusetts; Ballinger Publishing Co., 1978.
- Articles
- "Clustering in Real Estate Prices: Determinants and Consequences," Journal of Real Estate Research, April-June 2004 (With Oded Palmon)
- "New Evidence of Property Tax Capitalization," Journal of Political Economy, 105,#5, pp. 1099-1108, October, 1998 (With Oded Palmon)
- "A New Approach for Identifying the Parameters of a Tax Capitalization Model," Journal of Urban Economics, 44, pp. 299-316, Fall, 1998 (with Oded Palmon)
- "Tort Reform: Medical Malpractice Liability," in A Mandate for Change: Lawsuit Reform in Texas in 1995, ed. Richard Weekley. Texans for Lawsuit Reform, Houston, Texas.
- "An Integrated Approach to the Evaluation of Commercial Real Estate," (with C. Smith and Z. Saderion). Journal of Real Estate Research, Spring, 1994.
- "Owning a Home in the 1990s," (with Z. Saderion). Society, September/October 1992.
- "A Future for the American Economy." Book review for Society, July/August 1992.
- "The Future of the American Dream: Owning a Home in the Next Decade," (with Z. Saderion). Housing and Community: The American Dream Gone Astray. Edited by N. Dale Wright. BYU Press, Provo, Utah, 1992.
- "House Prices and Regional Real Estate Cycles: Market Adjustment in Houston," (with W.P. Tesarek). Journal of the American Real Estate and Urban Economics Association, Spring 1992.
- "Analyzing Urban Decentralization: The Case of Houston," (with P. Mieszkowski). Regional Science and Urban Economics 21, 183-199, 1991.
- "Regional Economic Cycles and the Texas Economy," Issues of Regional Significance, Federal Reserve Bank of Dallas, Dallas, Texas, Summer 1990.
- "On the Economic Interpretation of Structural Parameters in Implicit Markets" (with R. Ohsfeldt) Journal of Urban Economics. January 1990.
- "Modeling Energy Driven Regional Economies," in Energy Supply in the 1990's, Proceedings of the 11th Annual International Conference of the International Association for Energy Economists, June, 1989.
- "Assessing the Accuracy of Structural Parameter Estimates in Analyses of Implicit Markets" (with R. Ohsfeldt), Land Economics May, 1988.
- "Comparative Site Evaluations for Locating a High-Energy Physics Lab in Texas." (with R. Thompson, F.D. Singleton, Jr., and R. Thrall) Interfaces, Nov.-Dec., 1986.
- "The Texas Economy: Prospects for the Future," Energy and The Southwest Economy." Proceedings of the 1985 Conference on Energy and The Southwest Conference. Federal Reserve Bank of Dallas. Dallas, Texas, 1986.
- "Forecasting the Effects of Higher Education Appropriations on Local Economics" (with S. Prewitt, L. Steen, et.al.), Annual Forum Paper Series. Association for Institutional Research. June, 1986.
- "Simultaneity in the Market for Housing Characteristics." (with D. Diamond) Journal of Urban Economics, May, 1985.
- "Estimating the Demand for Heterogeneous Goods," (with R. Ohsfeldt) Review of Economics and Statistics, February, 1985.

- "Racial Composition as a Neighborhood Amenity," *The Economics of Urban Amenities* edited by G.S. Tolley and D.B. Diamond, Academic Press, 1982.
- "A Study of Racial Discrimination in Housing," *Research in Urban Economics*, 1981.
- "Racial Discrimination: Some New Empirical Evidence," In *Housing Policy for the 80's*, edited by D. Marshall and R. Montgomery, Lexington-Heath Publishing Co., 1980.
- "Housing Price Inflation in Houston: 1970-1976," (with R. Ohsfeldt) *Policy Studies Journal*, 1980.
- "The Status of Research into Racial Discrimination and Segregation in American Housing Markets," (with John Yinger, George Galster, and Fred Eggers), *Occasional Papers for Housing and Community Affairs*, Vol. 6, pp. 55-175, December 1979.
- "Scale Economies, Externalities and City Size," In *Urban Growth Policy in a Market Economy*, Academic Press: Princeton, N.J., 1979.
- "Urban Implication of the Welfare System and Minimum Wage Law," In *Urban Growth Policy in a Market Economy*, Academic Press: Princeton, N.J., 1979.
- "Fiscal Externalities, City Size and Suburbanization," In *Urban Growth Policy in a Market Economy*, Academic Press: Princeton, N.J., 1979.
- "Measuring the Value of Urban Amenities," *The Journal of Urban Economics*, Fall 1978.
- "Aggregation Bias and the Demand for Housing," (with John Campbell) *International Economic Review*, June 1978.
- "Real Wage Differentials Along the United States-Mexico Border," (with Robert Newman) *Economic Inquiry*, January, 1977.
- "Wages in the Border Region: Are They Depressed?" *Texas Policy Notes*, January 1976.
- "The Supply of Urban Housing," *Quarterly Journal of Economics*, August 1976.
- "Social Costs and the Rural-Urban Balance," (with George Tolley) In *Externalities and the Transformation of Agriculture*, Iowa State Press: Ames: 1975

#### OTHER PUBLICATIONS

- *The Aftermath of Katrina: Where Do We Go From Here?* The Institute for Regional Forecasting. University of Houston, November, 2005.
- *The Impact of Rising Interest Rates on Houston's Economy and Real Estate Markets.* The Institute for Regional Forecasting. University of Houston. May, 2005.
- *The Changing Face of Houston: Implications for the Future.* University of Houston, November, 2004.
- *Playing the Waiting Game.* University of Houston, May, 2004.
- *Are We There Yet?.* Institute for Regional Forecasting, University of Houston, November, 2003.
- *Roads, Rail and Real Estate,* The Institute for Regional Forecasting, University of Houston, May, 2003.
- *Charting the Next Five Years: Lessons Learned from the Past,* The Institute for Regional Forecasting, University of Houston, November, 2002.
- *The Houston Real Estate Market: A Rescue on the Horizon?,* The Institute for Regional Forecasting, University of Houston, May, 2002.
- *Which Will Come First, The Energy Slowdown or the Non-Energy Recovery?,* The Institute for Regional Forecasting, University of Houston, November, 2001.
- *The Houston Real Estate Market: Is This The Boom Before Another Bust?,* The Institute for Regional Forecasting, University of Houston, June, 2001.
- *Riding The Riptide - Facing the Cross-Currents of Growth and Stagnation,* The Institute for Regional Forecasting, University of Houston, November, 2000.

- The Past Decade/The Next Decade: Differences and Similarities, The Institute for Regional Forecasting, University of Houston, June, 2000.
- Energy and Houston: Are Better Times Ahead?, The Institute for Regional Forecasting, University of Houston, November, 1999.
- The Energy Bust and Real Estate Markets: Has Houston Dodged the Bullet?, The Institute for Regional Forecasting, University of Houston, June, 1999.
- The Oil Bust - Chapter 2: Will It Hurt As Much?, Center for Public Policy, University of Houston, November, 1998.
- Happy Days Are Here Again, Center for Public Policy, University of Houston, May, 1998.
- Welcome Houston to the WEB, The World Economic Boom, Center for Public Policy, University of Houston, November, 1997.
- There is Strength Behind the Slowdown, Center for Public Policy, University of Houston, May, 1997.
- How Different Are the 1990s?, Center for Public Policy, University of Houston, November, 1996.
- The Impact of a Proposed Local Minimum Wage Upon the Houston Economy, Save Houston Jobs, Inc.
- Rents, Rates, and Real Estate, Center for Public Policy, University of Houston, May, 1996.
- The Houston Economy: Welcome to the Soft Landing, Center for Public Policy, University of Houston, November 1995.
- What is Keeping the Lid on Houston's Real Estate Prices and Rents?, Center for Public Policy, University of Houston, May 1995.
- The Houston Economy: Are These The Big City Blues?", Center for Public Policy, University of Houston, November 1994.
- The Return of the Real Estate Market: Will History Repeat Itself?, Center for Public Policy, University of Houston, June 1994.
- Gaining Momentum: Where We Stand Today, Center for Public Policy, University of Houston, November 1993.
- The Real Estate Recovery: Where Do We Go From Here?, Center for Public Policy, University of Houston, June 1993.
- A 10-Year Anniversary: The Fall and Rise of the Houston Real Estate Market, Center for Public Policy, University of Houston, June 1992.
- The Pro-Cyclical Houston Economy in the 1990s, Center for Public Policy, University of Houston, January 1992.
- Houston: The Effects of the International Economy, Center for Public Policy, University of Houston, June 1991.
- Houston's Economy Gains in the National Race: A Survey of the Local Economy and the Real Estate Market, Center for Public Policy, University of Houston, June 1990.
- Modeling Energy Driven Regional Economies, Center for Public Policy, University of Houston, June 1989.
- The Oil Recession: A Tale of Five Regions, Center for Public Policy, University of Houston, June 1989.
- The Future of Houston's Apartment Market, Center for Public Policy, University of Houston, January 1989.
- The Houston Housing Market: Preparing for the Good Times, Center for Public Policy, University of Houston, May 1988.
- Houston Update. Quarterly publication of the Center for Public Policy, University of Houston, Ten Quarterly publications, 1986-1990.

- Houston Housing Market in the 1980's. Published by Horne Financial Corporation. Houston, Texas, 1985.
- Guide to Economic Analysis for Local Government. (with G. Callaway). Austin, Texas: Texas Department of Community Affairs, 1978.
- Houston's Economy: The Road to Recovery. Center for Public Policy, University of Houston, 1987.
- The Houston Housing Market: Have We Turned the Corner?. Center for Public Policy, University of Houston, 1986.
- Recent Developments in Houston Home Prices. Center for Public Policy, University of Houston, 1985.

## **FUNDED RESEARCH**

2004 Principal Investigator, "An Estimate of the Potential Spillover Effects of the Town Center Improvement District of Montgomery County Upon Surrounding Residential Areas", Funded by TCID.

2004 Principal Investigator, "The Impact of the Proposed Bayport Container Terminal Upon the Economic Development Strategies of Seabrook, Texas", Funded by The City of Seabrook.

2002 Principal Investigator, "An Economic Feasibility Study of the Proposed Upgrade of the Houston Southwest Airport", Funded by the Texas Department of Transportation.

2001 Principal Investigator, "Houston Area Forecasts of Economic Variables and Sales Tax Receipts", Funded by The City of Houston.

2001 Principal Investigator, "Estimating Small Area Growth Within the Houston Metropolitan Area". Funded by the Harris County and Fort Bend County Toll Road Authorities.

2000 Co-Principal Investigator, "Estimating the Economic Impact of the Proposed State Implementation Plan to Place Houston in Compliance with the Clean Air Act. Funded by the Business Coalition for Clear Air.

1998 Principal Investigator, "Student Enrollment Projections for Cypress-Fairbanks Independent School District". Funded by CFISD.

1998 Principal Investigator, "Economic Baseline Report for Uptown TIRZ". Funded by Uptown Houston - Harris County Improvement District #1.

1996 Principal Investigator, "The Impact of a Proposed Local Minimum Wage Upon the Houston Economy, funded by Save Houston Jobs, Inc.

1994-96 Principal Investigator, "Small Business Employment Index," funded by Administaff, Inc.

1994 Principal Investigator, "Monitoring the Level of International Trade from Houston," funded by the City of Houston.

1993-94 Principal Investigator, "An Analysis of the Economic Impact of the City of Houston's Neighborhoods to Standard Program," funded by the City of Houston.

- 1993 Principal Investigator, "An Analysis of the Economic Impact of the City of Houston's Neighborhoods to Standard Program," funded by the City of Houston.
- 1991 Principal Investigator, "A Re-examination of Employment Growth Potential in Houston's Major Activity Centers," funded by the Metropolitan Transit Authority of Harris County.
- 1990 Principal Investigator, "The State of the Texas Real Estate Market," funded by First Boston Corporation.
- 1989-90 Principal Investigator, "Development of an Activity Center Data Base for the Metropolitan Transit Authority of Harris County," funded by the Metropolitan Transit Authority of Harris County.
- 1989 Principal Investigator, "Redevelopment of the Houston Industrial Production Index," funded by Houston Lighting and Power.
- 1989 Principal Investigator, "The Future of Houston's Major Activity Centers," funded by the Metropolitan Transit Authority of Harris County.
- 1987-1989 Co-Principal Investigator, "An Analysis of Oil Dependent Economics", funded by Economic Development Administration, U.S. Dept. of Commerce.
- 1986-1987 Principal Investigator, "A Study of New Houston Businesses" funded by Houston Economic Development Council.
- 1979-1982 Co-Principal Investigator, "The Determinants of Urban Residential Location Patterns," funded by Policy Development and Research, U.S. Department of Housing and Urban Development.
- 1978-1979 Co-Principal Investigator, "Lending Practices in the Houston Metropolitan Area," funded by the City of Houston, Division of Fair Housing and Land Office of Community Development.
- 1977-1978 Principal Investigator, "Economics of County Planning," funded by the Texas Department of Community Affairs.
- 1977-1978 Principal Investigator, "An Examination of the Form and Substance of Segregation Curves for U.S. Cities," funded by Policy Development and Research, Office of Economic Analysis, U.S. Department of Housing and Urban Development.
- 1976-1978 Co-Principal Investigator, "A Study of Racial Discrimination in Houston," funded by Policy Development and Research, U.S. Department of Housing and Urban Development.
- 1976-1977 Principal Investigator, "An Examination of the Form and Substance of Segregation Curves for U.S. Cities," funded by Policy Development and Research, Office of Economic Analysis, U.S. Department of Housing and Urban Development.



1976-1977 Co-Principal Investigator, "Environment Analysis for Development Planning: Implementing an Approach for Decision Making," NSF-RANN Grant ENV-83-07880 A02 to Southwest Center for Urban Research.

1974-1975 Co-Principal Investigator, "Environmental Analysis for Developing Planning: Environmental, Political and Economic Factors in Land Use Management," NSF-RANN Grant ERT-73-07880 A01 to Southwest Center for Urban Research.

1974-1975 Co-Principal Investigator, "Border Cities Project," funded by the Tinker Foundation, N.Y., N.Y., to the Institute for Urban Studies, University of Houston.

1973-1974 Senior Research Associate, "Environmental Analysis for Development Planning in Chambers County, Texas," NSF-RANN Grant GI-39211 to Southwest Center for Urban Research.

1972-1974 Research Associate, "Environmental Pollution and the Urban Economy," NSF-RANN to University of Chicago and Argonne Laboratories.

## **MAJOR RESEARCH REPORTS**

"Forecasts of Employment and Population Along SH 249 and SH 105 in Harris and Grimes Counties", December, 2004.

"Small Area Population and Employment Forecasts for Regional Tollways", August, 2002.

"Historical and Projected Growth By Small Geographic Areas for Metropolitan Houston", October, 2001.

"An Economic Examination of the Spring Branch Area of Houston, Texas: Its Past and Its Potential", September, 2001.

"Houston Area Forecasts of Economic Variables and Sales Tax Receipts", June, 2001.

"Clearing Houston's Air: An Economic Evaluation of Clean Air Act Compliance, Strategies and Alternatives", December, 2000.

"The Impact of a Proposed Local Minimum Wage Upon the Houston Economy", Summer, 1996.

"Tort Reform: Medical Malpractice Liability", Spring 1995.

"Revitalizing Houston's Inner-City: Analyzing the Impact of the Neighborhoods to Standard Program," December 1994.

"The Potential for Economic Redevelopment of Spring Branch," Spring 1994.

"The Development Potential of the Highway 288 Corridor in Houston, Texas," May 1994.

"The Role of the Woodlands in the Economic Development of Montgomery County," prepared for The Woodlands Development Corporation, 1992.

"An Analysis of the Major Urban Real Estate Markets in the States of Texas and Oklahoma," prepared for Sage Realty Advisors, June 1992.

"January 1989 Employment Profiles of Houston's Major Activity Centers," prepared for the Metropolitan Transit Authority of Harris County, Texas, June 1991.

"Economic Growth, Inflation, and Interest Rates," prepared for the Metropolitan Transit Authority of Harris County, Texas, 1991.

"Economic Growth, Inflation, and Interest Rates," prepared for the Metropolitan Transit Authority of Harris County, Texas, 1990.

"The State of the Texas Residential Real Estate Market," prepared for First Boston Corporation, August 1990.

"The Economic Impact of the Proposed McDonnell-Douglas Aircraft Assembly Plant in Houston, Texas," prepared for the Greater Houston Partnership, July 1990.

"The Future of Houston's Housing Market - Focus: The Single-Family Market," Center for Public Policy, August 1989.

"The Future of Houston's Housing Market - Focus: The Multi-Family Market," Center for Public Policy, August 1989.

"The Future of Houston's Major Activity Centers," prepared for the Metropolitan Transit Authority of Harris County, Texas, July 1989.

"Economic Growth, Inflation, and Interest Rates," prepared for the Metropolitan Transit Authority of Harris County, Texas, June 1989.

"An Analysis of Oil Dependent Economies," prepared for the Economic Development Administration of the U.S. Department of Commerce, May 1989.

"The Future of Houston's Apartment Market," Center for Public Policy, April 1988.

"Hedonic Estimation and the Identification of Implicit Goods Demand." Prepared for Policy Development and Research, Office of Economic Evaluation, U.S. Department of Housing and Urban Development, January 1983.

"Simultaneity in the Market for Housing Characteristics." (with D. Diamond). Prepared for Policy Development and Research, Office of Economic Evaluation, U.S. Department of Housing and Urban Development, January, 1983.

"Housing as an Implicit Good." (with D. Diamond). Prepared for Policy Development and Research, Office of Economic Evaluation, U.S. Department of Housing and Urban Development, January, 1983.

"Estimating the Demand for Housing Characteristics." (with R. Ohsfeldt). Prepared for Policy Development and Research, Office of Economic Evaluation, U.S. Department of Housing and Urban Development, March, 1982.

Racial Discrimination in Housing, (with Peter Mieszkowski). Office of Economic Evaluation, Division of Policy Development and Research, U.S. Department of Housing and Urban Development, 1980.

"A Theory of Hedonics in Urban Housing Markets." (with D. Diamond). Prepared for Policy Development and Research, Office of Economic Evaluation, U.S. Department of Housing and Urban Development, December 1980.

"Rehabilitation and Gentrification." (with D. Diamond). Prepared for Policy Development and Research, Office of Economic Evaluation, U.S. Department of Housing and Urban Development, December 1980.

"The Extent of the Effects of Discrimination in the Housing Market: A Review of the Literature." Prepared for Policy Development and Research, Office of Economic Evaluation, U.S. Department of Housing and Urban Development, Spring 1978.

Lending Patterns in the Houston Metropolitan Area. Houston, Texas: Fair Housing Division, Department of Public Works, City of Houston, 1978.

The Stability of Segregation Function and the Cross Sectional Use of Segregation Indices. (with G. Callaway). Report prepared for the U.S. Department of Housing and Urban Development under Contract No. HUD-1760-77. December 1977.

"Economic and Demographic Projections for Kendall County Texas." (with P.G. Rowe, G.L. Callaway, H. Ellison). Report prepared for Texas Department of Community Affairs under Contract No. 68109577, September 1977.

Growth Scenarios for Chambers County, Texas. Houston, Texas: Southwest Center for Urban Research, 1977.

Separating Discriminatory Segregation from DeFacto Segregation. Report prepared for the U.S. Department of Housing and Urban Development under Contract No. HUD-1760-77. December 1977.

Economic and Demographic Projections for Fayette County Using a Growth Scenario Approach. (with P.G. Rowe, G.L. Callaway and H. Ellison). Austin, Texas: Texas Department of Community Affairs, 1976.

An Analysis of the Concept and Use of Segregation Indices and Their Implications for Public Policy. (with C. Wilson). Funded by the Department of Housing and Urban Development under contract No. HUD-555 (TQ), 1976.

Environmental Analysis for Development Planning: Applications for the Texas Coastal Zone Management Program. (with Conant, R.W., J. Mixon, P.G. Rowe, D.L. Williams and G.L. Callaway). Houston, Texas: Southwest Center for Urban Research, 1975.

## WORK IN PROGRESS

“Property Value Diminution After Toxic Site Cleanups.” Submitted for publication at the JUE.

"Inflationary Expectations and Hedonic Shadow Prices in an Urban Housing Market." Being revised for resubmission.

The Economic Foundations of Cost Benefit Analysis

The Economics of Environmental Regionalism (with George Tolley)

## REVIEWS

Evaluation of Reports submitted to the Environmental Protection Agency.

Evaluation of proposals submitted to the National Science Foundation and the U.S. Department of Housing and Urban Development.

Evaluation of Manuscripts for: Quarterly Journal of Economics; Journal of Political Economy; Review of Economics and Statistics; Economic Inquiry; Southern Economic Journal; Journal of Urban Economics; Social Science Quarterly; Urban Studies; University of Texas Press; Praeger Press; Ballinger Press; Houghton Mifflin Publishers; Journal of the American Real Estate and Urban Economics Association, Journal of Real Estate Research, and the Appraisal Journal.

## SPECIAL PROJECTS, ANALYSES AND CONFERENCES

2005, “The Aftermath of Katrina: Where Do We Go From Here?” The Institute for Regional Forecasting. Fall Symposium.

2005, “The Impact of Rising Interest Rates on Houston’s Economy and Real Estate Markets.” The Institute for Regional Forecasting. Spring Symposium.

2004, “The Changing Face of Houston: Implications for the Future”. The Institute for Regional Forecasting. Fall Symposium.

2004, “Playing the Waiting Game”. The Institute for Regional Forecasting. Spring Symposium.

2003, “Are We There Yet?”. The Institute for Regional Forecasting, Fall Symposium.

2003, “Roads, Rail and Real Estate” The Institute for Regional Forecasting, Spring Symposium.

2002, “Charting the Next Five Years: Lessons Learned from the Past” The Institute for Regional Forecasting, Fall Symposium.

- 2002, "The Houston Real Estate Market: Is a Rescue on the Horizon" The Institute for Regional Forecasting, Spring Symposium.
- 2001, "Which Will Come First, The Energy Slowdown or the Non-Energy Recovery" The Institute for Regional Forecasting, Fall Symposium.
- 2001, "The Houston Real Estate Market: Is This The Boom Before Another Bust", The Institute for Regional Forecasting, Spring Symposium.
- 2000, "Riding The Riptide - Facing the Cross-Currents of Growth and Stagnation", The Institute for Regional Forecasting, Fall Symposium.
- 2000, "The Past Decade/The Next Decade: Differences and Similarities, The Institute for Regional Forecasting, Spring Symposium.
- 1999, "Emergy and Houston: Are Better Times Ahead? The Institute for Regional Forecasting, Fall Symposium.
- 1999, "The Energy Bust and Real Estate Markets: Has Houston Dodge the Bullet?, The Institute for Regional Forecasting, Spring Symposium.
- 1998, "The Oil Bust - Chapter 2: Will It Hurt As Much?", Center for Public Policy, Fall Symposium.
- 1998, "Happy Days Are Here Again", Center for Public Policy, Spring Symposium.
- 1997, "Welcome Houston to the WEB, The World Economic Boom," Center for Public Policy Fall Symposium.
- 1997, "There is Strength Behind the Slowdown," Center for Public Policy Spring Symposium.
- 1996, "How Different Are the 1990s," Center for Public Policy Fall Symposium.
- 1996, "Rents, Rates, and Real Estate," Center for Public Policy Spring Symposium.
- 1995, "The Houston Economy: Welcome to the Soft Landing", Center for Public Policy, Fall Symposium.
- 1995, "What is Keeping the Lid on Houston's Real Estate Prices and Rents", Center for Public Policy, Spring Symposium.
- 1994, "The Houston Economy: Are These The Big City Blues?", Center for Public Policy, Fall Symposium.
- 1994, "The Return of the Real Estate Market: Will History Repeat Itself," Center for Public Policy, Spring Symposium.
- 1993, "Gaining Momentum: Where We Stand Today," Center for Public Policy, Fall Symposium.

1993, "The Houston Real Estate Market: Where Do We Go From Here," Center for Public Policy, Spring Symposium.

1992, "The Economic Recovery: What Went Wrong," Center for Public Policy, Fall Symposium.

1992, "The Fall and the Rise of the Houston Real Estate Market," Center for Public Policy, Spring Symposium.

1991, "The Pro-cyclical Houston Economy in the 1990s," Center for Public Policy, Fall Symposium.

1991, "Houston: The Effects of the International Economy," Center for Public Policy, Spring Symposium.

1990, "Houston Forecast - The Long-Term," Center for Public Policy Fall Symposium.

1990, "The Houston Economy: Outpacing the Pack," Center for Public Policy Spring Symposium.

1989, "Houston, Texas: The Next Chapter Unfolds," Center for Public Policy Symposium.

1988, "The Houston Housing Market: Preparing for the Good Times," Center for Public Policy Symposium.

1987, "Houston's Economy: The Road to Recovery" Center for Public Policy Symposium.

1986, "Understanding the Houston Economy," Center for Public Policy Symposium.

1985, "The Houston Housing Market: Have We Turned the Corner?" Center for Public Policy Symposium.

1985, "The Houston Housing Market in the 1980's," analysis and symposium Center for Public Policy.

1983, "The Transportation Puzzle: Putting the Pieces Together," analysis and conference, Center for Public Policy.

1982, "Houston Housing Prices: 1970-1982," analysis and seminar, Center for Public Policy.

1982, "Transportation Evaluation: Case Study, the Kuykendahl Park'N Ride," analysis, Department of Economics, University of Houston.

## **PRESENTATIONS AND INVITED LECTURES**

"Differences Between Amenity and Capitalization Models of Housing Prices", International Applied Business Research Conference, March, 2004.

"Measuring the Impact of Cleaning Air Policies and the New Environmental Regionalism," Rice University Environmental Workshop, Fall, 2001.

"The Economic Impact of The State Clean Air Act SIP Upon the Houston Economy", The Houston Forum Club, December, 2000.

"Exogeneous Depreciation", (with Sharon O'Donnell) presented at the semi-annual meeting of the American Real Estate and Urban Economics Association, Washington, D.C., May, 1998.

"An Alternative Approach to Identify Tax Capitalization Models", presented at the Annual Meetings of the American Real Estate and Urban Economics Association, San Francisco, December, 1995.

"Inflationary Expectations and Hedonic Shadow Prices," presented at the Annual Meeting of the Western Economic Association, Vancouver, British Columbia, June 1994.

"The Capitalization of Suburban Tax Rate Differentials," presented at the Annual Meeting of the Western Economic Association, Lake Tahoe, Nevada, June 1993.

"The Future of the American Dream: Owning a Home in the Next Decade," presented at the Annual Ethics Conference "Housing and Community: The American Dream Gone Astray," held at Brigham Young University, September 1991.

"Decentralization in Houston," presented at TRED Conference, Lincoln Institute of Land Policy," Boston, Massachusetts, October 1990.

"The Pecuniary Impact of Regional Real Estate Cycles: A Case Study of Houston, Texas," Western Economic Association, San Diego, California, June 1990.

"Regional Economic Cycles and the Texas Economy," Conference on the Texas Economy, Federal Reserve Bank of Dallas, Dallas, Texas, November 1989.

"Modeling Energy Driven Economies," presented at the semi-annual meetings of the International Association of Energy Economists, Caracas, Venezuela, June 1989.

"Regional Economic Cycles and the Oil Price Shock," presented at the semi-annual meetings of the International Association of Energy Economists, Houston, Texas, November 1988.

"Distinguishing Quality and Quantity in the Analysis of Housing Markets" Presented at the annual meeting of the American Real Estate and Urban Economics Association. Chicago, Ill. December 1987.

"A New Look at Resource Based Regional Economies" presented at the Annual meeting of the Western Economics Association. Vancouver, B.C. July 1987.

"Analyzing Urban Housing Markets" presented at the annual Meeting of the Western Economics Association. Vancouver, B.C. July 1987.

"Forecasting the Effects of Higher Education Appropriations on Local Economies" presented at the Annual Forum of the Association for Institutional Research. Orlando, Florida. June 1986.

"The Texas Economy: Prospects for the Future" presented at Conference on the Texas Economy. Federal Reserve Bank of Dallas, Texas, November 1985.

"Redlining: A Prisoner's Dilemma?" (with R. Ohsfeldt) presented at the annual meetings of the American Real Estate and Urban Economics Association of the Allied Social Sciences Association, Dallas, Texas, December 1985.

"Assessing the Accuracy of Structural Parameter Estimates in Analysis of Implicit Markets" (with R. Ohsfeldt) presented at the annual meetings of the American Real Estate and Urban Economics Association of the Allied Social Sciences Association, Dallas, Texas, December 1985.

"Some Issues in the Identifications of Implicit Goods Demand." (with D. Diamond) presented at the annual meetings of the American Real Estate and Urban Economics Association of the Allied Social Sciences Association, Washington, D.C. December 1983.

"Discrimination and Housing Prices." presented at the annual meetings of the American Real Estate and Urban Economics Association of the Allied Social Sciences Association, Washington, D.C., December 1981.

"Estimating Income Differentials" A Case Study of Mexican Americans" presented at the Southern Economics Association Meetings, New Orleans, La., November 1981.

"The Hedonic Estimation of Home Prices: The Identification Issue" presented at the annual meetings of the Western Economics Association, San Francisco, July 1981.

"A Theory of Rehabilitation and Gentrification" (with D. Diamond) presented at the annual meetings of the American Real Estate and Urban Economics Association, Denver, September, 1980.

"An Analysis of the Demand for Housing Characteristics and Spatial Goods" presented at the annual meetings of the American Real Estate and Urban Economics Association in Denver, September 1980.

"The Demand for Housing: A Reevaluation of Methodological Issues" presented at the annual meetings of the Econometric Society, December 1979.

"Housing Demand: The Joint Tenure and Expenditure Choice" (with J. Campbell) presented at the annual conference of the Western Economic Association, June 1978.

"Aggregation Bias and the Demand for Housing" presented at the annual conference of the Western Economic Association, June 1976.

"The Determinants of Mexican-American Incomes" presented at the annual conference of the Western Economic Association, June 1976.

"Urban Density Gradients: A Historical Perspective" presented at Urban Workshop, University of Chicago, Spring 1976.

"Measuring the 'Value' of Urban Amenities." Presented at the Annual Seminar on Urban Development, University of Chicago, June 1975.



"The Demand for Housing: A New Look at Urban Empiricism" presented at the annual conference of the Western Economic Association, June 1975.

"A Comment on the Spatial Distribution of Blacks Around a Central City" presented at Inter-University Committee on Urban Economics, University of Wisconsin, Madison, May 1975.

"Fiscal Externalities and Unemployment in a Spatial System" (with George Tolley) presented at the annual conference of the Public Choice Society, University of Maryland, April 1973.

## **TEACHING EXPERIENCE**

### *Undergraduate Courses:*

Principles of Economics; Money and Banking; Intermediate Microeconomics; Urban Economics; Project Evaluation

### *Graduate Courses: Seminars; and Dissertation Supervision:*

Microeconomics (M.B.A.); Macroeconomics (M.B.A.); Public Finance; State and Local Finance; Cost Benefit Analysis; Urban Economics; Urban Economics (for Public Administration and Urban Studies Program); Economics of Environmental Decision Making; Graduate Research Seminar (Workshop); Ph.D. Dissertation Committees and Chairman.

## **UNIVERSITY ASSIGNMENTS**

2004-present Director, University Impact Study Committee  
1999-present Director, Institute for Regional Forecasting, CPP  
1995-1998 Grievance Committee, University of Houston  
1995-1996 Executive Committee, Department of Economics  
1994-1998 Benefits Committee, University of Houston  
1987-1999 Senior Economist, Center for Public Policy  
1987-1990 Chairman, Department of Economics  
1986-1987 Academic Council, University of Houston  
1986-1987 Curriculum Committee, Department of Economics  
1984-1987 Executive Committee, Department of Economics  
1984-1987 Director, Center for Public Policy  
1984-1987 Grievance Committee, College of Social Sciences  
1981-1983 Research Associate, Center for Public Policy  
1980-1984 Director, Economics Joint Faculty/Student Seminar  
1980-1982 Executive Committee, Department of Economics  
1979-1981 College of Social Science Governance Committee  
1979 Special College Committee on Funded Research  
1978-1984 Departmental Recruiting Committee  
1976-1977 Chairman, Graduate Workshop Evaluation Committee  
1975-1976 MA Program Evaluation Committee, Economics Dept  
1975 Graduate Research Seminar Committee, Economics Dept  
1975-1984 Microeconomics Comprehensive Exam Committee  
1974-1975 M.A. Evaluation Committee, Urban Studies Program

**GEORGE S. TOLLEY, PHD, PROFESSOR EMERITUS, THE UNIVERSITY OF CHICAGO;  
PRESIDENT, RCF**

George Tolley is President of RCF, a Professor of Economics at The University of Chicago, and the author or co-author of 17 books and over 100 articles in professional journals. Dr. Tolley was Director of the Center for Urban Studies at The University of Chicago from 1978 to 1985.

Some of Dr. Tolley's important books contributing to the professional environmental literature include the following books: *Valuing Health for Policy: An Economic Approach*, *The Economic Value of Visibility*, *Environmental Policy* (A 5 volume series), and *The Economics of Urban Amenities*. A few of his important, recent articles are: "Issues in the Improvement of the Valuation of Non-Market Goods," in *Resource and Energy Economics*, "Asbestos Removal and Treatment Impacts on Housing and Urban Neighborhoods," in *Journal of Environmental Systems*, and "Valuing Changes in Health Risks: A Comparison of Alternative Measures," in *Southern Economic Journal*. In addition to his academic work, Dr. Tolley is very influential in policy formation and change at the international, federal, and local level.

Dr. Tolley has performed extensive international work for the World Bank and the Agency for International Development, and has served as an economic policy consultant to the governments of China, Venezuela, Panama, Korea, Thailand, Iran, and Gambia. He has made major recommendations on agricultural and natural resource policies, housing privatization, regional development, and taxation.

Dr. Tolley directs RCF's mail volume forecasting work for the U.S. Postal Service, and has served as the chief witness for the Postal Service on volume issues. From 1974 to 1975, he was Deputy Assistant Secretary for Tax Policy in the U.S. Treasury Department and from 1965 to 1966 he was Director of the Economic Development Division, U.S. Department of Agriculture. Since 1965, he has served on various committees of the National Academy of Science, including Automotive Pollution, Water Policy, and the Energy Engineering.

Dr. Tolley has analyzed proposed environmental regulations for the Illinois Department of Energy and Natural Resources and has testified at the Illinois Pollution Control Board. He has conducted several projects for the Wisconsin Electric Power Company, Commonwealth Edison, the Edison Electric Institute, and Peoples Gas, including evaluation of company environmental and conservation programs, forecasts of the impacts of new regulation, and market analysis of plant construction plans. Dr. Tolley is an advisor to the Department of Environment Commissioner, and has performed economic analyses for many private companies as well as the City of Chicago.

**CONSULTING ECONOMISTS**

**PETER BERNSTEIN, MBA, VICE PRESIDENT, RCF**

Mr. Bernstein is Vice President of RCF, where he leads RCF's legal support and market economic analysis. He has written numerous testimonies and appeared as an expert witness on many occasions. Mr. Bernstein has testified before the Postal Rate Commission on the impact of the Internet on the finances of the U.S. Postal Service and has also testified in union-management contract arbitration hearings. Mr. Bernstein is also the author of RCF's *Quarterly Economic Forecast* report. He has also co-authored many economic studies, such as an analysis of the "Living Wage" proposal for the City of Chicago, several housing market analyses, and a large-scale survey of airline passengers for O'Hare airport. Mr. Bernstein also collaborated on an RCF study of the impact of a proposed \$1 billion casino/entertainment complex and testified before the Chicago Commission on Gaming.

In addition to his work at RCF, Mr. Bernstein is Visiting Instructor of Economics at DePaul University where he teaches graduate and undergraduate courses in business and economics. He was on the faculty of Loyola University from 1987 to 1991 and was Lecturer at The University of Chicago Graduate School of Business where he taught investment theory.

Prior to working with RCF, Mr. Bernstein co-authored a study of the budget of the Chicago Transit Authority for the Center for Economic Policy Analysis, testified as a witness on behalf of BMW of North America, and conducted policy analyses in other areas including criminal justice and federal and state fiscal policy. He was a research analyst with the Federal Trade Commission in Washington, D.C. and was on the research staff of the American Medical Association in Chicago, Illinois.

Mr. Bernstein holds a B.A. in Economics and an M.B.A. in Economics and Finance, both from The University of Chicago. He has completed all course and examination requirements toward a Doctorate degree from The University of Chicago Graduate School of Business.

**STEPHEN GRAHAM, SENIOR MANAGER, ADVANCED ANALYTICAL CONSULTING GROUP, INC.**

Stephen Graham works in the areas of applied economics and econometrics. His work has focused on statistical modeling on large-scale data. Depending on the project, this involved data validation, data standardization, and applying a consistent modeling methodology to large amounts of data. In each case, before any validation or standardization could take place, there was a data discovery and data analytics portion of the project in which the goal was to understand the data given and cross-reference the fields in the data to the ones requested. Typically the data sources would be from several different geographical locations, as well as represent entities from \$10 million in value to \$150 billion.

Examples of projects overseen by Mr. Graham include:

- Mr. Graham led a team of practitioners who were assisting a federal agency in the resolution of financial institutions. The focus of his team was to obtain data and information on the deposit systems and products of a financial institution. This data could vary from a few thousand records to tens of millions of records depending on the size of the institution. At different points throughout his tenure on the project there would be over 50 concurrent examinations all with varying levels of complexity and priorities. The team was responsible for producing deliverables in order for the agency to perform an estimation of the uninsured deposits of the institution should the institution approach failure. In order to ensure that the data was complete, the balances were balanced against the systems of record as well as the general ledger. Balancing these records to the general ledger involved additional understanding of how the institution's ledger system worked, as well as representing a new work stream involving conversations with the bank's accounting staff should there be any outages. Additional standardized reports were also prepared for the marketing of the institution should the institution approach failure. It was necessary for his team to have a complete understanding of all of the deposit products and processes of the institution in order to prepare others at the agency for a closure. These products may be as simple as standard checking accounts to as complex as large-scale sweep products involving accounts in the Cayman Islands and Eurodollar accounts. In the time he was on the project, Graham instituted many process improvements and quality controls in order to ensure consistency of the data and processes followed. He was responsible for the deposit team at many large and notable bank closures. He was also involved in every training class for practitioners new to the project, as well as providing guidance for the experienced individuals preparing to lead closures on their own.
- Mr. Graham managed a regulatory reporting project for a major telecommunications client for three years. The main task of the project was the development of a software system to perform complex statistical and financial calculations. Data was received on a monthly basis from client locations across the United States. This data was validated and standardized in order to identify products and the metrics to be reported upon. Monthly reports were produced by the client, which were then replicated by our team. The reports produced by our team were then matched up against the client reports and reconciliation between the two sets of reports was performed. Afterwards, client management would review the results of the reconciliation and could then mandate further changes in their system to reflect the results of the analyses. This involved scheduling of individual projects, assignment of tasks across employees, and discussing status of projects with the client as well as performing work in the performance reporting computations and in the statistical analysis.

**Experience**

Senior Manager, Advanced Analytical Consulting Group, Inc., 2010 — Present  
Manager, Deloitte Financial Advisory Services, LLP, 2002—2010  
Manager, Arthur Andersen, 2001—2002  
Economist, Welch Consulting, 1997—2001

**Education**

Texas A&M University, A.B.D., Economics  
Central State University, B.A., Economics, History Minor

**Presentations, Papers, and Publications**

Stephen Graham and Donchul Cho, “The Other Side of Conditional Convergence”, *Economics Letters*, 1996.

**DONALD W. JONES, PHD, VICE PRESIDENT, RCF**

Donald Jones is a senior economist and Vice President for marketing at RCF. He is author or co-author of four monographs, one edited volume, and over 50 articles in professional journals. A number of his articles have been reprinted in collections of readings and classic articles in their fields. He has taught on the faculties of the Universities of Chicago, Colorado, and Tennessee. Dr. Jones has served as a research staff member and economist at Oak Ridge National Laboratory. His experience includes energy project and program evaluation (U.S. and Third World), risk management, investment in new technologies, land use and deforestation, economics of R&D, value of power system reliability, commercial real estate, corporate incentive structures, infrastructure productivity and benefit estimation, transportation demand and fatality forecasting, and macroeconomic impacts of oil price shocks. Dr. Jones received his Ph.D. in Geography with a concentration in economics from The University of Chicago.

**DANIEL S. LEVY, PHD, NATIONAL MANAGING DIRECTOR, ADVANCED ANALYTICAL CONSULTING GROUP, INC.**

**EDUCATION**

Ph.D., Economics, The University of Chicago

A.B., Economics, The University of Chicago (With Special Honors in Economics)

Daniel S. Levy specializes in applications of economics and statistics in the study of corporate structures related to industrial organization/antitrust and labor economics. His work includes detailed analyses and valuations of corporate functions, risks, and assets for international corporations in a wide range of industries. Dr. Levy has testified in litigation and regulatory settings on statistical methods and implementation.

He leads a group of economists who have performed economic impact studies in various industries, including healthcare, environmental, sports, aviation and waste disposal. He and his team have developed and fielded innovative survey methods and analytical techniques to estimate the economic impact of various policy and business investments.

Dr. Levy's work also includes the study of environmental issues, including comment before the EPA on contingent valuations of environmental damage. His work on this topic was published in *The University of Chicago Law Review*. He has conducted studies of the impact of environmental damages based on detailed statistical analysis of property values. In addition, he has used various behaviorally-based models, such as travel time models, to determine the value of environmental amenities. He is expert in numerous statistical and modeling applications and has modeled complex economic and social factors affecting demographic and market behavior.

Dr. Levy has also studied the economic and legal arguments related to punitive damages and the impact that punitive damages have not only on corporate officers, but also on the broader stakeholders in a firm from shareholders to employees. He has also studied the impact of punitive damages on innovation and development of new products.

For a large class action, Dr. Levy developed a core damages model that was used by multiple experts as the basis for their damage calculation, ensuring consistency and quality control across multiple experts who were providing testimony about the damages suffered by multiple individuals.

Prior to founding Advanced Analytical Consulting Group, Dr. Levy was the National Market Leader for Economic and Statistical Consulting for Deloitte Financial Advisory Services and had served as the Global Leader of Economic Consulting for Arthur Andersen. Prior to that, he held research and consulting positions at Charles River Associates, The RAND Corporation, Needham-Harper Worldwide Advertising, SPSS Inc. and The University of Chicago Computation Center.

Research Experience

I. Litigation and Regulation

Energy and Environment

- Dr. Levy was a designated witness in an environmental damages case involving potential ground-water contamination from an industrial site.
- Related to the Exxon Valdez oil spill, Dr. Levy performed analysis of survey methods used to evaluate the value of wildlife on the Alaskan coast.
- He has studied contingent valuation methods in connection with air pollution in the Grand Canyon dispute (including comment before the EPA).
- In support of a major electric utility before a regulatory board, Dr. Levy developed a methodology to estimate the energy savings resulting from new demand-side management programs.
- He performed a cost-benefit analysis of the benefits that would arise from proposed changes in the operation of hydroelectric sites.
- For a major oil company, Dr. Levy reviewed and critiqued the current Superfund process. This analysis investigated the cost savings that could be achieved through alterations to Superfund mechanisms, including reduced administrative, transactional and litigation costs.

Economic Impact

- Dr. Levy was a designated witness in an environmental damages case involving potential ground-water contamination from an industrial site.
- For various clients, Dr. Levy has estimated the economic impact of changes in business conditions and proposed projects. These analyses often involve regional economic impacts related to specific businesses or sectors of the economy.

Antitrust

- Dr. Levy served as an antitrust expert in medical technology markets, investigating market definition, market share, barriers to entry and market strategy.
- In the consumer electronics industry, Dr. Levy has studied the market conditions relevant to a Robinson-Patman claim.
- Dr. Levy served as an expert in an antitrust dispute in the retail pharmaceutical market.
- As an expert witness in a dispute involving illegal price fixing, Dr. Levy has investigated the market for municipal solid waste in a ten state region.
- In a price-fixing matter involving agricultural products, Dr. Levy performed an industry analysis, including market share, barriers to entry, and price elasticity.
- As an expert witness, Dr. Levy has analyzed price-fixing claims in the beverage industry.



- In an escheat matter, Dr. Levy assessed the appropriate interest rates to use in damage calculations and providing expert testimony.
- In support of Texaco, Dr. Levy developed a statistical analysis of a Robinson-Patman claim in the gasoline retail industry and provided affidavit testimony.
- In support of Texaco, Dr. Levy provided a statistical analysis of estimated damages associated with a common carrier dispute.
- Dr. Levy directed a team of researchers in support of the predatory pricing claim made by Northwest and Continental against American Airlines. The analysis included a broad range of topics, including an analysis of load factors, cost allocations and barriers to entry.
- In support of a group of major oil companies, Dr. Levy provided an analysis against the state's claim of price collusion among the majors, which allegedly affected prices in five western states.
- Dr. Levy has provided statistical analysis in support of mergers and acquisitions in the clothing, food and paper industries.

#### Health

- For major health insurers, Dr. Levy has assessed the competitive impact of mergers or acquisitions in the healthcare industry.
- In an analysis of costs and charges for a major New Jersey hospital chain, Dr. Levy led a team of demographers, economists, statisticians in an analysis the costs, revenues, competitive position and profitability of the system for presentation to the Department of Justice.
- For a regional hospital in New Jersey, Dr. Levy assessed the economic viability of the institution for presentation to the Department of Justice.
- For a major western hospital in a dispute with the Department of Justice, Dr. Levy is assessing the payments made by the government to the hospital.
- For an eastern hospital in a dispute with the Department of Justice, Dr. Levy is investigating the impact of economic, demographic and medical factors that have resulted in allegedly high Medicare Outlier payments.
- Dr. Levy has estimated the extent of billing errors and other health record errors based on statistical samples and econometric forecasts based on detailed medical record reviews.
- Based on information from medical records and DRGs, Dr. Levy analyzed the impact of smoking on health costs for a large corporate client.
- Based on DRG classifications in HMOs, Dr. Levy has developed capitated pricing structures for one of the world's largest pharmaceutical products. This work was performed in support of a new initiative by a major manufacturer to sell a class of pharmaceuticals to HMOs on a per-member, per-month pricing basis, as opposed to the traditional per-pill pricing basis.

### Intellectual Property

- Dr. Levy provided an analysis for markets and market power for a patent infringement and antitrust case in the medical devices market.
- Dr. Levy has served as an expert on statistical sampling issues in a patent infringement case involving a bottle technology.
- In a patent infringement matter, Dr. Levy is serving as an expert on price erosion, and changes in volume resulting from infringement.
- As part of a patent infringement litigation in the electronics industry, Dr. Levy was engaged to calculate damages.
- For a patent infringement dispute in the biotech industry, Dr. Levy has studied the rates of return attributable to research, development, production and distribution of pharmaceuticals.
- As part of an intellectual property dispute, Dr. Levy has prepared an analysis of irreparable harm suffered by a biotech firm due to a claimed patent infringement.

### Telecommunications

- In support of major telecommunications, Dr. Levy has provided advice on statistical testing and data collection protocols for regulatory matters and business process improvement.
- For a cellular provider, Dr. Levy has designed protocols and statistical testing procedures to ensure quality control in billing processes.

### Transfer Pricing

- Dr. Levy has served as an expert arbitrator for the IRS. He has managed numerous transfer-pricing projects, integrating advanced econometric techniques with standard transfer-pricing practices. He has studied international transactions in various industries, including video games, computer reservation systems, agricultural research, development and distribution, metals, import and retail sales, paints and pigments, vehicle fabrication, and automobile sales. Some of this work is noted in the “Publications” section.

### Demographic and Labor

- In support of a consortium of twenty-six cities and counties, Dr. Levy provided a statistical analysis of the process used to adjust the U.S. Census. He led staff in determining the political and racial bias in the current adjustment process.
- Related to a school busing dispute in Delaware, Dr. Levy analyzed the factors that led to scholastic achievement, including social and economic factors. Dr. Levy’s academic research includes other studies of the investments in human capital.

## Business Consulting

- In projects for minerals and metals mining and processing companies, Dr. Levy assessed both the investment opportunities and risks in various states of the Former Soviet Union. Estimates of country-specific investment risk were based on a detailed analysis of the political and economic conditions in each country and a finance-based analysis of country bond ratings.
- He has studied transportation demand models, including the creation of multinomial logit models for transportation and consumer choice.
- Dr. Levy has developed capitated pricing structures for one of the world's largest pharmaceutical products. This work was performed in support of a new initiative by a major manufacturer to sell a class of pharmaceuticals to HMOs on a per-member, per-month pricing basis, as opposed to the traditional per-pill pricing basis.
- For the U.S. Air Force, he studied the effect of changes in the promotion rates on the retention of the enlisted force.
- For the combined U.S. Military Services, he studied the level of health care services and their comparability to those typically provided by civilian organizations.

## **EXPERT TESTIMONY/AFFIDAVITS**

- Oracle USA, Inc., et al v. SAP AG, et al, 2009, Case No. 07-CV-01658 PJH (EDL), November 2009.
- Stephen Markson v. MBNA Canada Bank Court File 03-CV254970CP, January 2009, July 2009
- Drs Newco III, Inc v. Night Vision Equipment Company Holding, Inc, 2008, Expert Report, Testimony, *Damages in High Technology Market*.
- Invesco Institutional (N.A.) Inc v. Deutsche Investment Management Americas, Inc, 2008, Expert Report, *Damages in Financial Services Industry*.
- Securities and Exchange Commission v. Kenneth D. Pasternak and John P. Leighton, 2007, 2008. Expert Report and Testimony. *Damage Analysis*
- Cytologix v. Ventana, Expert Report and Testimony, 2002, 2007.
- Rubin Squared Inc. v. Cambrex Corporation, 2006 Case No. 03-CIV. 10138(PAC) Expert Report.
- Polaris Industries Inc. v. Commission of Revenue, 2005, Expert Report, Minnesota Tax Court, Docket No. 7694-R
- Before the New Mexico Department of Insurance, 2004, Expert Report.

- Carolyn Fears, et al. v. Wilhelmina Model Agency, Inc., et al., 2003, Expert Report and Deposition.
- Shoshone and Arapaho Indian Tribes v. the United States of America, 2003, Expert Report.
- Pechiney Plastic Packaging Inc. v. Continental PET Technologies Inc. 2002, Expert Report and Deposition, 2002.
- Before the Illinois Commerce Commission, 2001, Expert Report and Testimony.
- IRS Expert Arbitrator, James Schilling Inc., v. Internal Revenue, 2001, Service.
- Before the New Mexico Insurance Commissioner, 2001, Expert Report.
- Before the Wisconsin Public Utilities Commission, 2000, Expert Report and Testimony.
- Dayton Technologies Inc., et al., v. Aluminum Company of America, et al, United States District Court Southern District of Ohio Western division, 2000, Expert Report and Deposition.
- Before the New Mexico Department of Insurance, Expert Witness, 1999.
- Before the Michigan Public Service Commission, 1998, Expert Affidavit.
- Statistical Methods for Parity Tests of Telecommunications Resale and Retail Markets, Before the Indiana Public Service Commission, 1998, Expert Affidavit.
- Before the FCC, CC Docket No. 98-56, RM-9101, 1998, Expert Affidavit.
- Graber, A. et al. v. Giuliani, United States District Court Southern District of New York, 1998, Expert Affidavit and Deposition.
- Marisol, A. et al. v. Giuliani, United States District Court Southern District of New York, 1998, Expert Affidavit and Deposition.
- DFW v. Continental Air Lines, Texas, 1998, Expert Deposition and Testimony.
- Randall's Food Markets, Inc., v. Fleming Companies, Inc., The American Arbitration Association Dallas, Texas, June, 1998, Expert Affidavit.
- Randall's Food Markets, Inc., v. Fleming Companies, Inc., The American Arbitration Association Dallas, Texas, February 1998, Expert Report.
- Donald E. Haney v. Timesavers Inc., et al. United States District Court, District of Oregon, January 1998, Expert Testimony.
- Merck-Medco Managed Care Inc. v. Rite Aid Corporation et al. Northern District of Maryland, May 1997, Expert Deposition.

- Donald E. Haney v. Timesavers Inc., et al. United States District Court, District of Oregon, July 1997, Expert Report.
- Kenneth Heubert Williams v. Honri Vashon Hunt et al., State of Michigan in the Circuit Court for the County of Oakland, May 1997, Expert Deposition.
- Merck-Medco Managed Care Inc. v. Rite Aid Corporation et al. Northern District of Maryland, April 1997, Expert Report.
- Robinson Rubber et al. V. Hennepin County, Minnesota, United States District Court, District of Minnesota, Fourth Division, April 1997, Expert Deposition.
- Robinson Rubber et al v. Hennepin County, Minnesota, United States District Court, District of Minnesota, Fourth Division, April 1997, Expert Report.
- Massachusetts Wholesalers of Malt Beverages, Inc., v. Commonwealth of Massachusetts et al, Suffolk Superior Court, 1996, Expert Testimony.
- Luke Brothers v. S. P. Krusell, US District Court, District of Massachusetts, July 1996, Expert Affidavit.
- Luke Brothers v. S. P. Krusell, US District Court, District of Massachusetts, August 1996, Expert Affidavit.
- Daras v. Texaco Inc, 1993, Affidavit.
- Environmental Protection Agency: Navajo Generating Station, 1991, Public Comment, *Valuation of Environmental Damages*.

**PROFESSIONAL EXPERIENCE**

2009 – Present	National Managing Director, Advanced Analytical Consulting Group, Inc.
2002 – 2009	National Leader Economic and Statistical Consulting, Deloitte FAS L.L.P.
2001 – 2002	Global Leader of Economic Consulting, Arthur Andersen L.L.P.: SFE
1998 – 2001	National Leader of Economic Consulting, Arthur Andersen L.L.P.: SFE
1996 – 1998	Director of Economics, Arthur Andersen L.L.P.:CRCO
1995 – 1996	Economist, Arthur Andersen L.L.P.
1991 – 1995	Senior Associate, Charles River Associates
1988 – 1991	Associate Economist, The RAND Corporation
1985 – 1988	Computer Advisor, University of Chicago Computation Center
1982 – 1985	Research and Teaching Consultant, SPSS Inc.
1981 – 1982	Research Consultant, Needham, Harper Worldwide Advertising

PROFESSIONAL HONORS AND ACTIVITIES

- Earhart Fellowship for graduate research in economics, 1982 - 1983
- Hewlett Grant for research in developing countries, 1985 - 1986; renewed, 1986 - 1987
- CBS Bicentennial Scholarship for research on events leading to the American Revolution, 1986 - 1987
- Homer and Alice Jones Fellowship, The University of Chicago, 1987 - 1988
- American Economics Association, 1988- Present
- Population Association of America, 1988-1991

PAPERS, PRESENTATIONS, AND PUBLICATIONS

Daniel S. Levy. "New Econometric Techniques for Transfer Pricing." Presented at the American Bar Association Annual Meetings, August, 1997.

Daniel S. Levy et al. "Economics and the New Transfer Pricing Regulations: Achieving Arm's Length Through the Invisible Hand." Special Report to *Transfer Pricing Reporter*, Vol. 4, No. 2, May 24, 1995.

Daniel S. Levy and Deloris R. Wright. "In the OECD and the United States, It's the Arm's-Length Principle that Matters: Comparison of New Transfer Pricing Regulations." *International Transfer Pricing Journal* 1, No. 2, January 1995.

Robert Fagan, Manjusha Gokhale, Daniel S. Levy, Peter Spinney, and G.C. Watkins. "Estimating DSM Program Impacts for Large Commercial and Industrial Electricity Users." Presented at 1995 International Energy Program Evaluation Conference, Chicago, IL, August 1995.

Talk on the EPA's decision to require the Navajo Generating Station to reduce emissions to protect visibility in the Grand Canyon. Panel on "Valuation of Environmental Resource Damages," CRA conference on *Economists' Perspectives on Legal Issues Today: Estimating Damages*, Boston, MA, April 23, 1992.

Daniel S. Levy et al. "Conceptual and Statistical Issues in Contingent Valuation: Estimating the Value of Altered Visibility in the Grand Canyon." (MR-344-RC). Santa Monica, CA: RAND Corporation, 1995. Draft submitted to the Environmental Protection Agency, March 1991.

Daniel S. Levy and D. Friedman. "The Revenge of the Redwoods?: Reconsidering Property Rights and Economic Allocation." *The University of Chicago Law Review* (April 1, 1994). Reprinted in *Land Use and Environment Law Review* 26 (September 1995).

Lois Davis, Susan Hosek, Daniel S. Levy and Janet Hanley, "Health Benefits for Military Personnel: An Overview of Their Value and Comparability to Civilian Benefits" (WD-5875-FMP). Santa Monica, CA: RAND Corporation, February 1992.

D. Buddin, J. Hanley, Daniel S. Levy, and D. Waldman. *Promotion Tempo and Enlisted Retention* (R-4135-FMP). Santa Monica, CA: RAND Corporation, August 1991.

Daniel S. Levy et al. "Comments On Contingent Valuation of Altered Visibility in the Grand Canyon Due to Emissions from the Navajo Generating Station." Presented to the Environmental Protection Agency, April 18, 1991.

Daniel S. Levy. "The Economic Demography of the Colonial South." Ph.D. Thesis, Department of Economics, University of Chicago, 1991.

J. DaVanzo and Daniel S. Levy. "Influences on Breastfeeding Decisions in Peninsular Malaysia." Presented at *The Yale Conference on the Family, Gender Differences, and Development*, September 1989.

Daniel S. Levy. "Long-Run Geographic and Temporal Changes in Mortality in the Colonial South." Presented at the annual meeting of the Population Association of America, Baltimore, 1989. Submitted 1995 to *Social Science History*.

Daniel S. Levy. "The Economic Determinants of Family Sizes in Colonial Maryland: Evidence from Colonial Legislators of Maryland." Presented at the Social Science History Association, Chicago, 1989.

Daniel S. Levy. "The Epidemiological Causes of Changing Political Life Expectancies." Manuscript, 1989.

Daniel S. Levy. "The Life Expectancies of Colonial Maryland Legislators." *Historical Methods* 20, No. 1 (Winter 1987): 1727.

David W. Galenson and Daniel S. Levy. "A Note on Biases in the Measurement of Geographic Persistence Rates." *Historical Methods* 19, No. 4 (Fall 1986): 171-179.

*CONSTANTIJN (STAN) PANIS, PHD PRINCIPAL, ADVANCED ANALYTICAL CONSULTING GROUP, INC.*

## **Professional Summary**

Dr. Panis is an expert in economic modeling and business issues. He has extensive litigation support experience including as economic expert witness in class action and business disruption cases. He has also assisted numerous corporations solve quantitative business issues outside of litigation. Dr. Panis has published extensively. He was an award-winning teacher in MBA and undergraduate programs, and he co-founded a successful company that developed statistical software to disentangle causality, reverse causality, and selection effects in economic models.

Prior to joining Advanced Analytical Consulting, Dr. Panis led the Economic and Statistical Consulting group of Deloitte & Touche in the Pacific Southwest. Before that, he was a senior economist at the RAND Corporation, directing federally-funded research on employment and health care issues. He served on the faculty of the University of Southern California and the University of California at Irvine, teaching undergraduate and graduate statistics and economics courses.

## **Education**

Ph.D., Economics, University of Southern California, Los Angeles, California  
J.D. (equivalent), Dutch Civil Law, University of Groningen, Netherlands  
M.A., Business Economics (cum laude), University of Groningen, Netherlands  
B.A., Economics (cum laude), University of Groningen, Netherlands

## **Selected Engagements**

Dr. Panis provided economic expert services to calculate the lost revenue and profits of multiple retail businesses that were allegedly disrupted by the acts of the defendant.

In a matter involving the sale of deferred annuities to senior citizens, Dr. Panis served as expert on the benefits of lifelong-guaranteed income for retirement satisfaction and symptoms of depression.

Dr. Panis served as expert in a matter over fund fees charged to 401(k) investors.

Dr. Panis served as economic expert in a class action insurance case over the insurance company's alleged obligation to share in the legal expenses of its insureds.

Dr. Panis served as expert on demographic trends, health care utilization, and their implications for future demand for hospital services.



Dr. Panis served as economic expert to calculate lifetime lost earnings of someone who was injured before reaching her target occupation.

The Department of Labor (DOL) commissioned Dr. Panis to study a variety of labor and pensions issues. Based on this work, he published a book on major trends in workforce composition and employer-employee relations, an academic article on pre-retirement pension cash-out behavior, and a book chapter on demand for and supply of skilled labor.

Dr. Panis provided litigation support in several cases involving hospitals that allegedly manipulated their charges to extract greater Medicare reimbursements.

Dr. Panis developed a Monte Carlo simulation model of health status and medical expenditures for the Centers of Medicare and Medicaid Services.

In a variety of engagements, Panis designed statistical samples or reviewed the appropriateness of samples for financial audit, damages calculations, or other extrapolation purposes.

### **Professional Experience**

Principal, Advanced Analytical Consulting Group, Inc., 2009 – present.

Manager / Senior Manager, Deloitte Financial Advisory Services LLP, Economic and Statistical Consulting, 2004 – 2009.

Senior Economist/Economist/Associate and Economist/Consultant, The RAND Corporation, 1986-1996 and 1997-2004. Senior Economist, 1999 –2004.

Consultant, Analysis Group, 2004

Co-founder and CEO, EconWare, Inc., 1999 – 2005

Business Analyst, Computer Sciences Corporation, 1996 – 1997

Adjunct Associate/Assistant Professor, University of Southern California, Economics Department and Marshall School of Business, 1993 – 2002 (intermittently)

Lecturer, University of California at Irvine, Graduate School of Management, 1992 – 1995 (intermittently)

### **Professional Organizations:**

American Economic Association

Association of Business Trial Lawyers

Los Angeles County Bar Association

### **Papers and Publications**

“Volatility Metrics for Mutual Funds” (with Michael Brien and Karthik Padmanabhan). 2010. Report for the U.S. Department of Labor, Employee benefits Security Administration.

“Target Date Funds and Retirement Savings” (co-authored). 2010. Report for the U.S. Department of Labor, Employee benefits Security Administration.

“Supply of and Demand for Skilled Labor in the United States” (with Lynn Karoly). 2009. Chapter 2 in *Skilled Migration Today: Prospect, Problems and Policies*, edited by Jagdish Bhagwati and Gordon Hanson. Oxford University Press.

“Target Date Funds: Historical Volatility/Return Profiles” (with Michael Brien and Philip Cross). 2009. Report for the U.S. Department of Labor, Employee benefits Security Administration.

“Other Post-Employment Benefits: Overview” (co-authored). 2009. Report for the U.S. Department of Labor, Employee benefits Security Administration.

“Revenue Sharing in DC Plans: What Does It Mean for Plan Sponsors?” (With Michael Brien.) *Pensions & Investments* Online, 2008. [://www.pionline.com/assets/docs/CO40932310](http://www.pionline.com/assets/docs/CO40932310).

“An Analysis of the Choice to Cash Out, Maintain, or Annuitize Pension Rights upon Job Change or Retirement,” (with Michael Hurd). *Journal of Public Economics* 2006, Volume 90 (12): 2213-2217.

“Health and Spending of the Future Elderly: Consequences of Health Trends and Medical Technology” (with Dana Goldman et al.). *Health Affairs* Web Exclusive, 26 September 2005 ([://content.healthaffairs.org/cgi/reprint/hlthaff.w5](http://content.healthaffairs.org/cgi/reprint/hlthaff.w5)).

“Pension Annuitization and Social Security Claiming,” (with Michael Hurd, James Smith, and Julie Zissimopoulos). 2004. Chapter 5 in *Developing an Annuity Market in Europe*, Elsa Fornero and Elisa Luciano (eds.). ISBN 1843764768. Edward Elgar, London.

*The 21st Century at Work: Forces Shaping the Future Workforce and Workplace in the United States*, 2004 (with Lynn Karoly), RAND MG-164-DOL. ISBN 0-8330-3492-8. Santa Monica, California. See [://www.rand.org/publications/MG/](http://www.rand.org/publications/MG/).

“Disability Forecasts and Future Medicare Costs,” (with Jayanta Bhattacharya et al.). *Health Policy Research* 2004, Volume 7: 75-94, David Cutler and Alan Garber (eds), MIT Press, Cambridge, Mass.

“Annuities and Retirement Well-being,” 2004, Chapter 14 in *Pension Design and Structure: New Lessons from Behavioral Finance*, Olivia S. Mitchell and Stephen P. Utkus (eds), ISBN 0-19-927339-1. Oxford: Oxford University Press.

“The Size and Composition of Wealth Holdings in the United States, Italy, and the Netherlands,” 2005, (with Arie Kapteyn). Chapter 9 in *Analyses in the Economics of Aging*, David Wise (ed.). National Bureau of Economic Research, The University of Chicago Press: Chicago, Illinois.

*Health Status and Medical Treatment of the Future Elderly*, 2004 (with Dana Goldman et al.), RAND TR-169-CMS. ISBN 0-8330-3653-X. Santa Monica, California. See [://www.rand.org/publications/TR/](http://www.rand.org/publications/TR/).

“Forecasting the Nursing Home Population,” (with Darius Lakdawalla, Dana Goldman, Jayanta Bhattacharya, Michael Hurd, Geoffrey Joyce). *Medical Care*, 41(1): 8-20, January 2003.

“Effects of Changing Social Security Administration's Early Entitlement Age and the Normal Retirement Age,” (with Michael Hurd and David Loughran). Working paper, November 2002.

“Workers That Claim Early Social Security Benefits,” (with Julie Zissimopoulos). Working paper, October 2002.

“Nonmarital Childbearing: Influences of Education, Marriage, and Fertility,” (with Dawn Upchurch and Lee Lillard), *Demography* 39(2): 311-329, May 2002.

“Microsimulations in the Presence of Unobserved Heterogeneity,” Working paper, December 2003.

“MetLife Retirement Crossroads Study: Paving the Way to a Secure Future,” 2002, Metropolitan Life Insurance Company, February 2002.

[://www.metlife.com/WPSAssets/97633369201018640707V1FRAND-Final](http://www.metlife.com/WPSAssets/97633369201018640707V1FRAND-Final).

“Determinants and Accuracy of Planned Retirement Age,” (with Michael Hurd and David Loughran). Working paper, November 2001.

“The Impact of Nonmarital Childbearing on Subsequent Marital Formation and Dissolution,” 2001, (with Dawn Upchurch and Lee Lillard) in Wu, Haveman, and Wolfe (Eds.), *Out of Wedlock: Trends, Causes, and Consequences of Nonmarital Fertility*. Russell Sage, New York.

“The Quality of Retrospective Data: An Examination of Long-Term Recall in a Developing Country,” 2001, (with Megan Beckett, Julie DaVanzo, Christine Peterson, and Narayan Sastry), *Journal of Human Resources* 2001, 36(3): 593-625.

“Comparing Disability Growth among the Young and Old,” (with Darius Lakdawalla, Jayanta Bhattacharya, Dana Goldman, Michael Hurd, Geoffrey Joyce). RAND working paper, April 2001.

“SSA Program Data User’s Manual,” June 2000, (with Roald Euler, et al.), Report for the Social Security Administration, RAND PM-973-SSA

“Release of Confidential Microdata for Research: Case Studies of Federal Agencies and Recommendations for the Social Security Administration,” May 2000 (with Cynthia Grant and Roald Euler), Report for the Social Security Administration, RAND PM-1044-SSA.

“Citizens, Computers, and Connectivity: A Review of Trends,” September 1999, (with Tora Bikson), RAND MR-1109-MF.

“Near Term Model Development, Part II” August 1999, (with Lee Lillard), final report for the Social Security Administration.

“Panel Attrition from the Panel Study of Income Dynamics: Marital Status, Income, and Mortality,” (with Lee Lillard), *Journal of Human Resources* 1998, 33(2): 437-457.

“Socioeconomic Differentials in the Returns to Social Security,” February 1996, (with Lee Lillard). RAND DRU-1327-NIA.

“Social Security: Equity, Adequacy, Reforms,” 1996, (with Lee Lillard) RAND Documented Briefing, DB-167-NIA.

“Social Security Reform: Touching the Rail,” Winter 1995-96 (with Lee Lillard), *RAND Research Review*, Vol. XIX, No.3.

“The Value of an Annuity When Payments and Survival Probabilities Depend on Future Events,” 1997, (with Lee Lillard and Michael Brien).

“Marital Status and Mortality: The Role of Health,” (with Lee A. Lillard), August 1996, *Demography*, 33(3): 313-327.

“Life Expectancy Projections for European Union Member Countries,” Final report prepared for Directorate General V (Employment, Industrial Relations, and Social Affairs) of the European Commission (with Erwin Charlier and James Kahan). September 1996.

“Computers and Connectivity: Current Trends,” in *Universal Access to E-mail*, Robert H. Anderson, Tora Bikson, Sally Ann Law, and Bridger Mitchell (eds), RAND. Also in *Social Psychology of the Internet*, Sara Kiesler (ed.), Mahwah, New Jersey: Erlbaum, Inc., 1996. (With Tora K. Bikson).

“Child Mortality in Malaysia: Explaining Ethnic Differences and the Recent Decline,” *Population Studies* 49 (1995): 463-479 (with Lee Lillard).

“Implications of Family Formation for Educational Attainment among Young Women,” 1995 (with Lee Lillard and Dawn Upchurch).

“Health Inputs and Child Mortality: Malaysia,” *Journal of Health Economics*, 13 (1994): 455-489 (with Lee Lillard).

“Interdependencies Over the Life Course: Women’s Fertility, Marital, and Educational Experiences,” 1996 (with Lee Lillard and Dawn Upchurch).

“The Decline of Infant Mortality in Malaysia: Causes and Policy Implications.” In *Health, Economics, and Development: Working Together for Change*, World Federation of Public Health Associations, pp. 71-72 (presented to the 7-th International Congress, Bali, Indonesia, December, 1994.)

“The Piecewise Linear Spline Transformation with an Application to Age at First Marriage,” *Stata Technical Bulletin* 18 (1994): 27-29.

“Timing of Child Replacement Effects on Fertility Timing in Malaysia,” (with Lee A. Lillard), RAND Labor and Population Program, DRU-331-NICHD, June 1993.

“The Logit Model: An Introduction for Economists,” review of book by J. S. Cramer, *Journal of Regional Science*, 1992, 32:392-394.

**Peer Evaluation and Referee Experience**

Referee for the following academic journals:

*Journal of Political Economy*

*Journal of Human Resources*

*National Tax Journal*

*Journal of the Royal Statistical Society, Series B*

*Statistical Modeling: an International Journal*

*Journal of Population Economics*

*Demography*

*Social Security Bulletin*

*Demographic Research*

*Social Science & Medicine*

*Economic Journal*

*Empirica*

R03 Grant Reviewer, National Institute for Child Health and Human Development (2004)

Review panelist, PENSIM Pension Simulation Model, Department of Labor (2000)

**SABINA L. SHAIKH, PHD, SENIOR RESEARCH ECONOMIST, RCF**

Dr. Shaikh is a Senior Research Economist at RCF. Her areas of expertise include environment and natural resource policy analysis, econometrics, welfare analysis, and non-market valuation. She has extensive previous research experience on outdoor recreation demand, forestry and fishery management, and the effects of climate change on agriculture and environment.

Dr. Shaikh applies advanced econometric approaches to the yearly 5,000 observation Postal Service Household Diary using demand system estimation and qualitative choice maximum likelihood models. Dr. Shaikh has also led research uncovering the economic value of Chicago beaches and the economic impact of swimming bans and changes in water quality. She designed and implemented a survey of 2000 Chicago beachgoers and analyzed the data for policy and academic outlets.

Dr. Shaikh is currently a Lecturer in Economics and Public Policy at The University of Chicago where she teaches Environmental Economics and Public Policy Analysis. She was previously on the faculty of the Department of Food and Resource Economics at the University of British Columbia since July 1999. She holds a Ph.D. from the University of California-Davis, an M.A. from Colorado State University and a B.A. from the University of Wisconsin. She has published in major professional journals.

***CERTIFIED PUBLIC ACCOUNTANTS***

***DANIEL E. WETZEL CPA MANAGING DIRECTOR, ALIX PARTNERS***

Daniel Wetzel is an experienced financial expert with over 20 years of diverse experience in forensic accounting, valuation, corporate restructuring, and as an expert witness. He has performed significant work in business interruption and has specific experience in oil and gas resources.

Mr. Wetzel is a Managing Director with Alix Partners in Washington, DC and Dallas TX. Prior to this, he was a Partner with Deloitte Financial Advisory Services LLP (“FAS”) in Dallas, TX and Washington, DC, where he served as the practice unit leader for the Washington, DC Deloitte FAS practice.

Mr. Wetzel’s financial experience covers a wide range of services including dispute analysis, forensic investigation, corporate finance and recovery, business turnaround services and valuation services. Likewise, the scope of his industry experience spans financial services, food and beverage distribution, real estate, restaurant, automotive, professional services, consumer goods, manufacturing, health care, pharmaceutical, public transportation, and defense.

***EXPERIENCE***

Mr. Wetzel has provided extensive services to businesses and law firms in a wide range of matters including:

***Dispute Analysis***

- Possesses extensive experience in assisting companies and their counsel in the resolution of disputes including consulting on a variety of valuation, financial, and economic issues in litigation proceedings and arbitrations. He has testified numerous times in deposition and trial in both state and federal court and has been engaged as a neutral arbitrator in a number of financial and accounting matters.
- Experienced in litigation matters involving antitrust cases, patent infringement, business interruption, predatory pricing, business valuation, distributorship termination, lost earnings due to wrongful death, class actions, lender liability, lost profits quantification, breach of contract and mergers and acquisitions disputes.

***Forensic Investigations***

- Performed Foreign Corruption Practices Act (“FCPA”) investigations for numerous companies around the globe. Work was performed for both US and foreign based entities.
- Managed numerous large anti-money laundering investigations. This work was performed for regional, national and international financial institutions. These engagements included the identification of potential money launderers, reporting to the client as well as regulatory agencies.

- Managed and directed investigations relating to financial statement and financial reporting improprieties including misstatements and restatements.
- Performed reviews of management control systems, prepared and revised management control system policies and practices, and investigated causes and conditions resulting in improprieties and embezzlements.

#### Valuation Services

- Provided valuation services to companies ranging in size from several billion dollars in sales to small, privately held and family-owned operations.
- Prepared valuations for the purpose of dispute resolution, buy-sell agreements, merger and acquisition, bankruptcy, ESOPs and gift and estate tax matters.
- Valued beer and food distributors for dispute purposes including assignments that involved termination issues. Other valuations in this industry were conducted for financial accounting and tax reporting purposes.

#### Corporate Finance and Recovery

- Possesses significant experience in assisting both Fortune 500 and middle-market companies and financial institutions in the corporate finance and recovery areas.
- Advised and consulted shareholders, secured lenders, corporate and real estate borrowers, institutional landlords, unsecured creditors' committees, financial and strategic investors and target and suitor corporations in both conventional and distressed scenarios.
- Assisted numerous companies in and out of bankruptcy in the liquidation of business units.
- Actively involved in several distressed real estate and development projects, from hotel and hospitality projects to major multi-use projects. He has extensive experience in corporate and real estate financings, restructurings, workouts, reorganizations, acquisitions and divestitures.

#### Business Turnaround Services

- Possesses considerable experience in providing workout and turnaround advice in a number of industries.
- Focused on evaluating and maximizing capital structures to either preserve/enhance the value of an ongoing business or to liquidate the assets of a business where the parts are more valuable than the whole.
- Worked on several out of court restructurings and workouts on behalf of shareholders, creditors, borrowers and guarantors.
- Negotiated with constituents, disposing of non-core assets, identifying and implementing financial and operational improvements, debt refinancings and straight capital restructurings.

#### **PROFESSIONAL AFFILIATIONS**

- American Institute of Certified Public Accountants
- Missouri Society of Certified Public Accountants



- Washington D.C. Society of Certified Public Accountants
- American College of Forensic Examiners
- Association of Certified Fraud Examiners
- American Society of Appraisers- Candidate
- Turnaround Management Association

**Certification**

- Certified Public Accountant in Texas, Missouri, and Washington D.C.

**Security Clearance**

- Mr. Wetzel has received Secret level security clearance from the U.S. Government.

**EDUCATION**

- St. Louis University: MBA
- University of Missouri: BSBA in Finance and Economics

**BRETT R. BRANDENBERG, CPA, DIRECTOR, ALIX PARTNERS**

Brett R. Brandenburg is a Director in the firm's Financial Advisory Services group. With more than 14 years of experience, his past work reflects multiple areas of service, including dispute analysis, business and intangibles valuation, intellectual property, forensic examinations, and transaction advisory. Similarly, the scope of his industry experience spans manufacturing, real estate, telecommunications equipment and services, pharmaceutical/biotechnology, professional and financial services, consumer goods, distribution, and health care.

Mr. Brandenburg was most recently the Practice Leader for the Financial Advisory Services group of RSM McGladrey's St. Louis office. Prior to this role, he spent a number of years with Deloitte & Touche's group providing similar services in its Washington, D.C., Dallas, and St. Louis offices.

Brett graduated with a Masters of Business Administration from Washington University in St. Louis and a Bachelor of Science in accounting from Truman State University. He is a Certified Public Accountant, Accredited Senior Appraiser, and holds the Chartered Financial Analyst designation.

Dispute Analysis

Mr. Brandenburg has significant experience in assisting companies and their counsel in the resolution of disputes. These services have included consulting on a variety of valuation, financial and accounting issues in litigation and arbitration proceedings. Mr. Brandenburg's litigation experience has encompassed matters involving contract disputes, corporate fraud, defective pricing, intellectual property infringement, business valuation, lost profits quantification, and purchase price disputes.

- Consulted multinational integrated oil & gas company in a purchase price dispute concerning its pro-forma accounting for fuel transportation costs at over 1,600 divested retail convenience locations.
- Rebutted plaintiff expert's damage calculation concerning the purchase price accounting at the largest non-financial firm to ever enter bankruptcy.
- Assisted the Federal government in its defense of the propriety with which it collected royalties from multiple firms extracting oil & gas from the Wind River Reservation in Wyoming for a period of almost thirty years.

Forensic Investigations

Mr. Brandenburg has assisted in the identification, recovery and analysis of historic accounting and financial records with the purpose of understanding the propriety, compliance or regularity of transactions and processes. These services have often been conducted in an active litigation environment.

- Led the electronic data recovery and analysis components of investigations into fraud, waste and abuse at the federally subsidized housing authorities in the U.S. Virgin Islands and Miami.

- Investigated allegations of financial statement fraud concerning the valuation of vehicle and parts inventories at a nationwide dealer of commercial trucks.
- Analyzed and quantified alleged fraud and false claims in a private insurer's administration of insurance policies reinsured through the Federal government's crop insurance program.

#### Valuation Services

Mr. Brandenburg has provided valuation services to companies ranging in size from several billion dollars in sales to small, privately held and family owned operations. He has valued companies and intangible assets in numerous industries including manufacturing, distribution, consumer goods, restaurants, real estate, technology, telecommunications, pharmaceuticals, medical devices and financial services. Mr. Brandenburg has prepared valuations for purposes of financial reporting, litigation, management planning, merger and acquisition, bankruptcy, and gift and estate tax matters.

- Allocated the purchase price of all the U.S. operations of a food ingredients manufacturer acquired by a Danish multinational specialty food manufacturer.
- Allocated purchase price to the acquired assets of the leading brand of shave preparation products in the United States.
- Valued a controlling interest in an international air freight firm for gift and estate tax purposes
- Appraised the stock of a multi-billion dollar dermatological pharmaceuticals firm

#### Intellectual Property Services

Mr. Brandenburg has provided assistance to clients in a number of areas concerning intellectual property. These experiences have included matters involving the provision of expert testimony in infringement suits, valuations, reasonable royalty rate studies and contractual compliance reviews of licensing relationships ("royalty audits"). The subject matter of his engagements has involved industries including pharmaceuticals, not-for-profits, and financial services, among others.

- Determined damages resulting from the alleged misappropriation of electric motor shutdown trade secrets by the largest manufacturer of pool pump motors in the world
- Through consideration of the Georgia-Pacific factors, determined a reasonable royalty for the patented technology embodied in the market leading animal deshedding tool
- Assessed the value of an internally developed piece of software used to manage travel reservations and planning for large group meetings at a performance improvement and incentive travel firm
- Investigated two firms contractual compliance with their licensing of select images from the world's largest art collection maintained by a global religious organization