

DAVID S. BUNCH

Curriculum Vitae *May 2010*

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Education

Ph. D., Rice University, 1985 (Mathematical Sciences)
Master in Applied Mathematical Sciences, Rice University, 1981
M. S., Northwestern University, 1979 (Chemistry)
B. A. (cum laude), Rice University, 1978 (Chemistry)

Positions

Professor of Management, UC Davis, July 2000-present
Acting Director, 'Center for New Mobility Studies,' Institute of Transportation Studies, UC Davis, October 1999-August 2000.
Associate Professor of Management, UC Davis, July 1992-July 2000.
Visiting Scholar, Department of Marketing, Faculty of Economics, University of Sydney. July 1997-July 1998.
Assistant Professor of Management, UC Davis. July 1985-June 1992.
Visiting Assistant Professor, UC Davis. July 1984-June 1985.
Associate, Rice Center, Houston, Texas. May 1982-August 1983.
Research Associate, The Institute for Rehabilitation and Research, Houston, Texas. February 1980-January 1982.

Courses taught

Product Management
Marketing for E-Commerce
Marketing Research
Management Policy
Decision Making and Management Science
Marketing Models for New Products
Discrete Choice Analysis
Managerial Decision Making
Systems Analysis and Design
Applied Linear Models for Management
Special Topics in Management of Information Systems
Seminar in Management

Publications and Papers

- “Potential Design, Implementation, and Benefits of a Feebate Program for New Passenger Vehicles in California: Interim Statement of Research Findings” (with David L. Greene). Institute of Transportation Studies, University of California, Davis, Research Report UCD-ITS-RR-10-13
- “Follow-on Development of CARBITS: A Response Model for the California Passenger Vehicle Market,” Final Report (Contract 05-303) prepared for State of California Air Resources Board, April 30, 2009.
- “Exploring the Consumer Valuation of Organic-Related Properties in Fresh Produce Choice,” (with Yuko Onozaka and Doug Larsen), Working Paper.
- “Theory-based Functional Forms for Analysis of Dissaggregated Scanner Panel Data” Working Paper.
- “Behavioral Models and Estimates for Leisure-Passenger Value of Travel-Time Saving in Long-Hall Air Travel Markets Using Stated Choice Experiments” Working Paper.
- “Behavioral Frontiers in Choice Modeling” (with Wiktor Adamowicz, Trudy Ann Cameron, Benedict G. C. Dellaert, Michael Hanneman, Michael Keane, Jordan Louviere, Robert Meyer, Thomas Steenburgh and Joffre Swait), Marketing Letters, Volume 19, Numbers 3-4 (December, 2008), pp. 215-228.
- “Automobile Demand and Type Choice,” Handbook of Transport I: Transport Modeling (Second Edition), with Belinda Chen, in David A. Hensher and Kenneth J. Button, editors, Pergamon, (2008) pp. 463-479.
- “Joint mixed logit models of stated and revealed preferences for alternative-fuel vehicles” (with David Brownstone and Kenneth Train) in The Stated Preference Approach to Environmental Valuation, Volume III: Applications: Benefit-Cost Analysis and Natural Resource Damage Assessment, ed. Richard T. Carson, Series: The International Library of Environmental Economics and Policy, Ashgate Publishing (2007).
- “Hybrid Choice Models: Progress and Challenges,” (with Moshe Ben-Akiva, Daniel McFadden, Kenneth Train, Joan Walker, Chandra Bhat, Michel Bierlaire, Denis Bolduc, Axel Boersch-Supan, David Brownstone, Andrew Daly, Andre de Palma, Dinesh Gopinath, Anders Karlstrom and Marcela A. Munizaga), Chapter 11 in Transportation Planning, Classics in Planning Series, Volume 7, eds. Yoram Shiftan, Kenneth Button, Peter Nijkamp, Edward Elgar Publishing (May, 2007).
- “California Air Resources Board – Institute of Transportation Studies (CARBITS) Vehicle Market Microsimulation Model for California, UC Davis Institute of Transportation Studies Research Report (2004).
- “Purchase Pattern Analysis for Organic and Conventional Produce with Detailed Supermarket Scanner Data,” Working Paper, with Doug Larson and Yuko Onozaka (2004).

Publications and Papers -cont.-

- “Hybrid Choice Models: Progress and Challenges,” (with Moshe Ben-Akiva, Daniel McFadden, Kenneth Train, Joan Walker, Chandra Bhat, Michel Bierlaire, Denis Bolduc, Axel Borsch-Supan, David Brownstone, Andrew Daly, Andre de Palma, Dinesh Gopinath, Anders Karlstrom, Marcela A. Munizaga), Marketing Letters, 13(3): pp. 163-175 (August 2002).
- "Optimal Designs for 2^k Paired Comparison Experiments," (with Deborah J. Street and Beverly Moore), Communications in Statistics - Theory and Methods, 30(10), pp. 2149-2171 (2001).
- "Automobile Demand and Type Choice," Handbook of Transport I: Transport Modeling, David A. Hensher and Kenneth J. Button, editors, Pergamon (2000), pp. 463-479.
- “The First-Passage Approach to Valuing the American Put,” (with Herb Johnson). Journal of Finance, 55 (5), (October 2000), pp. 2333-2356.
- "Joint Mixed Logit Models of Stated and Revealed Preferences for Alternative-fuel Vehicles" (with David Brownstone and Kenneth Train). Transportation Research B, Volume 34, Issue 5 (June 2000), pp. 315-449.
- "Combining Sources of Preference Data for Modeling Complex Decision Processes" (with Jordan J. Louviere, Robert J. Meyer, Richard Carson, Benedict Delleart, W. Michael Hanemann, David Hensher, and Julie Irwin). Marketing Letters, Volume 10, Issue 3 (August 1999), pp. 205-217.
- “Discussion of ‘Multi-Featured Products and Services: Analyzing Pricing and Bundling Strategies’ by Moshe Ben-Akiva and Shari Gershensfeld” (with Jordan J. Louviere), Journal of Forecasting, Volume 17, Issue 3-4 (1998), pp. 197-201.
- “Determinants of Alternative Fuel Vehicle Choice in the Continental United States” (with Melanie Tompkins, Danilo Santini, Mark Bradley, Anant Vyas, and David Poyer), Transportation Research Record, Number 1641, Energy and Environment: Energy Air Quality, and Fuels 1998, Transportation Research Board, National Research Council.
- “Commercial Fleet Demand for Alternative-fuel Vehicles,” (with Thomas F. Golob, Jane Torous, David Brownstone, Soheila Crane, and Mark Bradley), Transportation Research A Vol. 31A (1997): 219-233.
- “A Vehicle Usage Forecasting Model Based on Revealed and Stated Vehicle Type Choice and Utilization Data,” (with Thomas F. Golob and David Brownstone), Journal of Transport Economics and Policy Vol. 31 (1997): 69-92.
- “Analysis of the Future Household Market for Alternative Fuel Vehicles in Southern California Using a Microsimulation Forecasting System,” (with Camilla Kazimi), University of California-Davis, Graduate School of Management Working Paper UCD GSM WP# 05-96 (1996).

"A Comparison of Experimental Design Strategies for Choice-Based Conjoint Analysis with Generic-Attribute Multinomial Logit Models (with Jordan J. Louviere, and Don Anderson). (1996, revised version of UCD GSM Working Paper 01-94).

Publications and Papers -cont.-

"A Dynamic Forecasting System for Vehicle Markets with Clean-Fuel Vehicles," (with David Brownstone and Thomas F. Golob). In D. A. Hensher, J. King, and T. H Oum eds., World Transport Research, Volume 1 (1996): 189-203.

"A Vehicle Transactions Choice Model for Use in Forecasting Demand for Alternative-Fuel Vehicles," (with David Brownstone, Thomas F. Golob, and Weiping Ren), Research in Transportation Economics, Vol. 4 (1996): 87-129.

"A Demand Forecasting System for Clean-Fuel Vehicles," (with David Brownstone and Thomas F. Golob), in Organization for Economic Co-operation and Development (OECD) Towards Clean Transportation: Fuel Efficient and Clean Motor Vehicles, Publications Service, OECD, Paris, France, 1996, 609-624.

"Experimental Analysis of Choice," (with J. Louviere, R. Carson, D. Anderson, P. Arabie, D. Hensher, R. Johnson, W. Kuhfeld, D. Steinberg, J. Swait, H. Timmermans, and J. Wiley), Marketing Letters, Vol 5:4, 351-368.

"Extension of the Four-Parameter Logistic Model for ELISA to Multianalyte Analysis," (with G. Jones M. Wortberg, S. Kreissig, S. Gee, B. Hammock, and D. Rocke), Journal of Immunological Methods, Vol. 177, 1-7.

"Demand for Clean-Fuel Vehicles in California: A Discrete-Choice Stated Preference Survey" (with Mark Bradley, Thomas F. Golob, Ryuichi Kitamura, Gareth P. Occhiuzzo). Transportation Research A, Vol. 27A, No. 3, pp. 237-253, 1993.

"Predicting the Market Penetration of Electric and Clean-fuel Vehicles" (with Thomas F. Golob, Ryuichi Kitamura, and Mark Bradley), The Science of the Total Environment, 134 (1993) pp. 371-381.

"Subroutines for Maximum Likelihood and Quasi-Likelihood Estimation of Parameters in Nonlinear Regression Models" (with David M. Gay, and Roy E. Welsch). ACM Transactions on Mathematical Software, Vol. 19, No. 1, March 1993, Pages 109-130.

"Who Deters Entry? Evidence on the Use of Strategic Entry Deterrents" (with Robert Smiley). Review of Economics and Statistics, Vol. 74, No. 3 (August 1992), pp. 509-521.

"A Simple and Numerically Efficient Valuation Method for American Puts Using a Modified Geske-Johnson Approach" (with Herb Johnson). Journal of Finance, Vol. XLVII, No. 2 (June 1992), pp. 809-816.

"Estimability in the Multinomial Probit Model," Transportation Research B, 1991, Vol 25B(1), pp. 1-12.

"Statistical Design of ELISA Protocols," Journal of Immunological Methods, 1990, (with David Rocke and Robert Harrison), 132 (1990), 247-254.

"Heterogeneity and State Dependence in Household Car Ownership: A Panel Analysis Using Ordered-Response Probit Models with Error Components," 11th International Symposium on Transportation and Traffic Theory, Elsevier, July 1990 (with Ryuichi Kitamura).

Publications and Papers -cont.-

"Multinomial Probit Model Estimation Revisited: Testing Estimable Model Specifications, Maximum Likelihood Algorithms, and Probit Integral Approximations for Trinomial Models of Household Car Ownership," Transportation Research Group Research Report UCD-TRG-RR-4, April 1990, (with Ryuichi Kitamura).

"How Many Choices Are Enough? The Effect of the Number of Observations on Maximum Likelihood Estimator Performance in the Analysis of Discrete Choice Repeated-Measures Data Sets with the Multinomial Logit Model," UC Davis Graduate School of Management Working Paper UCD-GSM-WP0390, January 24, 1990, (with Richard Batsell).

A Comparison of Algorithms for Maximum Likelihood Estimation of Finite Mixture Density Models. Working paper.

"When Are Additive Models Valid for Evaluating Proposed Research?," Methods of Information in Medicine, 1989, 28, pp. 168-177 (with D. Cardus, M. J. Furher, R. M. Thrall).

"A Monte Carlo Comparison of Estimators for the Multinomial Logit Model" (with Richard R. Batsell), Journal of Marketing Research, February 1989, pp. 56-68.

"A Comparison of Algorithms for Maximum Likelihood Estimation of Choice Models," Journal of Econometrics, May/June 1988, Vol. 38, No. 1/2, pp. 145-167.

"Efficient Algorithms for Maximum Likelihood Estimation of Probabilistic Choice Models," SIAM Journal of Scientific and Statistical Computing, 1987, 8(1), 56-70.

"Parameter Estimation of Probabilistic Choice Models," Department of Mathematical Sciences Technical Report TR84-5 (Ph.D. Thesis), Rice University, 1984.

Presentations

"Economic Incentives for New Vehicle Purchases to Reduce Greenhouse Gas Emissions: Research on Policy Options for California," Transportation Center Seminar Series, Northwestern University Wednesday, August 12, 2009.

"University of California Feebates Research Project," Kitamura Memorial Symposium, June 29, 2009, University of California, Davis.

"University of California Feebates Research Project," presented at the Fuel Economy/Greenhouse Gas Emissions Standards – Technical Meeting, California Air Resources Board, June 17, 2009.

"Feebate Policy Workshop," (with David L. Greene and Tim Lipman) California Air Resources Board, February 26, 2009.

- “Theory-based Functional Forms for Analysis of Dissaggregated Scanner Panel Data,” presented to workshop on Behavioral Frontiers in Choice Models, Seventh Tri-Annual Choice Symposium, Wharton, June 2007.
- “Theory-based Functional Forms for Analysis of Dissaggregated Scanner Panel Data,” presented to the 2007 Bay Area Marketing Consortium, May 11, 2007.
- “Recent Advances in Discrete Choice Models,” (with Jordan J. Louviere), tutorial workshop, Thirteenth Annual Advanced Research Techniques (A/R/T) Forum, Vail, Colorado (June 2-5, 2002).
- “Identifying Optimal Offerings and Campaigns In Interactive Channels Using Real-Time Experiments and Automated Modelling Procedures,” (with Moshe Ben-Akiva, Denis Bolduc, Richard Carson, Jordan Louviere, Hikaru Phillips, Matthew Symons), Thirteenth Annual Advanced Research Techniques (A/R/T) Forum, Vail, Colorado (June 2-5, 2002).
- “Information and Sample Size Requirements for Estimating Non-IID Discrete Choice Models Using Stated-Choice Experiments,” 2001 UC Berkeley Invitational Choice Symposium, Asilomar Conference Center, Pacific Grove, California, June 1-5, 2001.
- "Estimation of Non-IIA Discrete Choice Models," Winter Quarter Econometrics Seminar Series, Department of Economics, UC Davis (February 19, 1999).
- "Implications of Choice Task Complexity Effects for Design and Analysis of Discrete Choice Experiments" (with Jeff D. Brazell and Jordan J. Louviere). Presented at 1998 INFORMS Marketing Science Conference, INSEAD, Paris (July 1998).
- “Estimating Non-IIA Models Using Discrete Choice Stated-Preference Data: Model Forms, Sample Size Effects, and Simulation Estimation.” Presentation to workshop on "Combining Sources of Preference Data for Modeling Complex Decision Processes," HEC Invitational Choice Symposium, Paris (July, 1998).
- “Estimating Non-IIA Models Using Discrete Choice Stated-Preference Data: Model Forms, Sample Size Effects, and Simulation Estimation.” Presentation to PhD seminar, Department of Marketing, University of Sydney, Australia (May 27, 1998).
- "Optimal Designs: Discussion." Presented at “Workshop on Experimental Design and Experimental Data: Alternative Perspectives,” Department of Econometrics, University of Sydney, Australia (May 8, 1998).
- “Computational Methods for Maximum Likelihood Estimation.” Presentations to Ph.D. course in “Bayesian Estimation Methods,” AGSM (Australian Graduate School of Management), University of New South Wales, Sydney, Australia (May 1, May 15, 1998).
- “Determinants of Alternative Fuel Vehicle Choice in the Continental United States” (with Tompkins, Santini, Bradley, Vyas, and Poyer), Presented at 1998 Transportation Research Board Meetings, Washington, D. C. (January 1998).

"Random Parameter Logit Models to Forecast Vehicle Ownership" (with David Brownstone and Kenneth Train), in preparation. Presented at the Eighth Meeting of the International Association of Travel Behavior Research, September 1997, University of Texas, Austin.

Presentations -cont.-

- "Analysis and Forecasts of EV Markets: Background and Methods for Multi-Year Household Surveys." Presented at "Electric Vehicle Markets: Conceptual and Analytical Approaches for Understand EV Demand," Institute of Transportation Studies, UC Davis (November 20, 1996).
- "Analysis and Forecasts of EV Markets: Results for Multi-Year Household Surveys." Presented at "Electric Vehicle Markets: Conceptual and Analytical Approaches for Understand EV Demand," Institute of Transportation Studies, UC Davis (November 20, 1996).
- "Using Dynamic Microsimulation and an Integrated System of Revealed Preference and Stated Preference Discrete Choice Models to Estimate Penetration of Electric Cars in the California Vehicle Market" (with D. Brownstone and T. F. Golob), presented at the 1996 INFORMS Marketing Science Conference, March 1996, University of Florida, Gainesville.
- "Testing a multinomial extension of partial profile choice experiments: Empirical comparisons to full profile choice experiments" (with Keith Chrzan and Daniel C. Lockhart), presented at the 1996 INFORMS Marketing Science Conference, March 1996, University of Florida, Gainesville.
- "Forecasting future vehicle usage using a jointly-estimated revealed- and stated-preference model" (with T. F. Golob and D. Brownstone). Presented at the Annual Meeting of Transportation Research Board, National Research Council, National Academy of Sciences, Washington, D.C., January 7-11, 1996.
- "The future of alternative fuel vehicles in California: Projections from a microsimulation forecasting system" (with D. Brownstone and T. F. Golob). Presented at the Annual Meeting of Transportation Research Board, National Research Council, National Academy of Sciences, January 7-11, 1996, Washington, DC.
- "Using Stated Preference and Intended Transactions to Predict Market Structure Changes for the Personal Vehicle Market in California," (with D. Brownstone, and T. F. Golob), presented at the 1995 Marketing Science Conference, July 1995, University of New South Wales, Sydney, Australia.
- "Design strategies for experimental choice sets: Comparison of methods for multinomial logit models," (with J. Louviere and D. Anderson), presented at the 1994 Marketing Science Conference, March 1994, University of Arizona, Tucson, AZ.
- "A Demand Forecasting System for Clean-Fuel Vehicles," (D. Brownstone, D. S. Bunch, and T. F. Golob), presented at the OECD Conference "Fuel Efficient and Clean Motor Vehicles," Mexico City, March 28-30, 1994.
- "Choice models from experimental choice sets," Workshop 2 Participant at Duke Invitational Symposium on Choice Modeling and Behavior (no-formal-presentation format), August 1993, Fuqua School of Business, Durham, North Carolina.

Presentations -cont.-

- "Predicting the market penetration of electric and clean-fuel vehicles," (T. F. Golob, R. Kitamura, M. Bradley, D. S. Bunch), presented at International Symposium on Transport and Air Pollution, September 10-13, 1991, Avignon, France.
- "Modelling the choice of clean fuels and clean-fuel vehicles," (R. Kitamura, M. Bradley, D. S. Bunch, and T. F. Golob), presented at the PTRC Annual Meeting, September 9-12, 1991, University of Sussex, England.
- "Demand for clean-fuel personal vehicles in California: A discrete-choice stated-preference survey," (with M. Bradley, T. F. Golob, R. Kitamura, and G. Occhiuzzo), presented at the Transportation Research Board Conference on Transportation and Global Climate Change: Long Run Options, August 25-28, 1991, Asilomar Conference Center, Pacific Grove, California.
- "Advances in Computation, Statistical Methods and Testing," Workshop 1 participant, Banff Invitational Symposium on Consumer Decision Making and Choice Behavior (no-formal-presentation format), May 8-15, 1990, Banff, Alberta, Canada.
- "Heterogeneity and State Dependence in Household Car Ownership: A Panel Analysis Using Ordered-Response Probit Models with Error Components," (with Ryuichi Kitamura) presented at TIMS/ORSA Joint National Meeting, Las Vegas, May 1990.
- "Multinomial Probit Model Estimation Revisited: Testing Estimable Model Specifications, Maximum Likelihood Algorithms, and Probit Integral Approximations for Trinomial Models of Household Car Ownership," (with Ryuichi Kitamura), presented at the 69th Annual Meeting of the Transportation Research Board, Washington, D. C., January, 1990.
- "A Panel Analysis of Car Ownership Using the Multinomial Probit Model," (with Ryuichi Kitamura) Fall ORSA/TIMS meeting, Denver, October 1988.
- "How Many Choices Are Enough? The Effect of Replications on MLE Performance in the Analysis of Discrete Choice Repeated-Measures Data Sets," invited presentation at the Joint Statistical Meetings of the American Statistical Association and the Biometric Society, August, 1988.
- "A Monte Carlo Comparison of Estimators for the Multinomial Logit Model," presented at the Fall ORSA/TIMS meeting, St. Louis, October 1987.
- "A Comparison of Algorithms for Maximum Likelihood Estimation of Choice Models," presented at the SIAM Conference on Optimization, Houston, May, 1987.
- "Efficient Algorithms for Maximum Likelihood Estimation of Probabilistic Choice Models." Invited presentation for Computer Science and Statistics: the 18th Symposium on the Interface, Fort Collins, Colorado, March 1986.

Grants and Contracts

- California Air Resources Board, 2009-. Potential Design, Implementation, and Benefits of a Feebate Program for New Passenger Vehicles in California (with David L. Greene).

California Air Resources Board, 2005-2009. Follow-on Development of CARBITS: A Response Model for the California Passenger Vehicle Market.

California Air Resources Board, 2002-2004. Analysis of Auto Industry and Consumer Response to Regulations and Technological Change, and Customization of Consumer Response Models in Support of AB 1493 Rulemaking (with D. Sperling and A. Burke).

University of California Energy Institute, 1996-1997. An Evaluation of Policies Related to Vehicular Energy Use (with Golob and Brownstone).

California Energy Commission, 1995-1996. Development of Policy Sensitive Transportation Forecasting Models for Personal, Commercial Fleet, and Freight Activity (with Golob, Brownstone, and Kitamura).

Pacific Gas and Electric, 1993-1995. Alternative Vehicles in the Pacific Gas and Electric Service Area: A Project for Developing Models and Scenario Simulation Systems for Forecasting AFV Penetration and Usage. (Principal investigator, with Co-PI's Golob, Kitamura, and Brownstone).

Southern California Edison, 1992-1994. Forecasting Electrical Vehicle Ownership and Use in the California South Coast Basin (with Golob, Kitamura, and Brownstone).

United States Department of Transportation, 1992-1993. Improved Designs for Stated Preference Analysis of Transport-Choice Processes (continuation).

United States Department of Transportation, 1991-1992. Improved Designs for Stated Preference Analysis of Transport-Choice Processes.

National Institutes of Health, National Institute of Environmental Health Sciences, 1988-1992. Decision Support System for Statistical Analysis of Toxics Measurement Data (with Rocke). Renewed for 1993-1996 (with Rocke).

California Energy Commission, 1991-1992. Assessing the Potential Acceptance of Alternative Fuels and Vehicles in California's Commercial Fleets (with Golob and Kitamura)

California Energy Commission, 1990-1992. Clean Vehicles/Clean Fuels Stated Preference Pilot Study (with Golob and Kitamura).

United States Department of Transportation, 1990-1991. Impact of Telecommuting on Travel: Accessibility Implications of Working at Home (with Kitamura, Jovanis, and Mokhtarian).

United States Department of Transportation, 1988-1990. Evaluation of the Impact of Telecommuting on Travel Patterns, Road Congestion, Energy Use and Air Quality (with Kitamura).

Professional Societies

INFORMS (Institute for Operations Research and Management Science)
Society for Industrial and Applied Mathematics

Editorial Board Journal of Choice Modeling

Reviewing

Reviewer for:

ACM Transactions on Mathematical Software
Annals of Operations Research
Computational Statistics and Data Analysis
Department of Transportation (UC Transportation Center)
IEEE Transactions on Signal Processing
Journal of the American Statistical Society
Journal of Computational and Graphical Statistics
Journal of Business and Economic Statistics
Journal of Econometrics
Journal of Forecasting
Journal of Marketing Research
Mathematical Programming
Marketing Science
National Science Foundation
SIAM Journal on Optimization
SIAM Journal on Scientific and Statistical Computing
Transportation Research
Transportation Research Board (TRB)
Transportation Science