

# JOHN C. LIECHTY

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Professor of Marketing and Statistics  
Smeal College of Business  
The Pennsylvania State University  
*June 14, 2011*

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## CURRICULUM VITAE

### EDUCATION

Cambridge University: Ph.D Mathematical Statistics (1998), Supervisor: Gareth Roberts  
Brigham Young University: MS Statistics (1993), BS Physics (1991)

### AWARDS AND FELLOWSHIPS

Fellow of the American Statistical Association, from 2011  
IBM Faculty Fellow, 2011  
Council of Section Rep. Marketing Section, Am. Stat. Association, 2011  
Finalist, William O'Dell Award, Best Long-Term Impact, 2005, *J. of Marketing Research*, 2010  
Finalist, Best Paper Financial Management Association Annual Meeting, 2009  
Chair, Marketing Section of the Am. Stat. Association, 2007  
Finalist, Paul Green Award, Best Paper in the *J. of Marketing Research*, 2005  
Invited Participant, Marketing Science Institute Young Scholars Program, 2005  
Finalist, John D. C. Little Award, Best Paper in *Marketing Science*, 2004  
Finalist, Paul Green Award, Best Paper in the *J. of Marketing Research*, 2001  
Best Methodology Paper, Academy of Marketing Science Summer Meeting, 2001  
Finalist American Statistical Association Savage Award Dissertation Prize, 1999  
Fellow of the Royal Statistical Society

### ACADEMIC POSITIONS

- 2011 – Present Director of the Center for the Study of Global Financial Stability, at the Pennsylvania State University, see [stability.psu.edu](http://stability.psu.edu).
- 2010 – Present Professor of Marketing and Statistics, Smeal College of Business, Pennsylvania State University
- 2005 – 2010 Associate Professor of Marketing and Statistics, Smeal College of Business, Pennsylvania State University
- 1999 – 2005 Assistant Professor of Marketing and Statistics, Smeal College of Business, Pennsylvania State University
- Taught Marketing Models and Bayesian Inference to Ph.D. Students
  - Taught Marketing Research and Strategy Course to Undergraduates
- 1996 – 1999 Visiting Assistant Professor, University of Michigan Business School
- Taught business statistics courses to undergraduate and MBA students
  - Supervised MBA teams involved in seven-week consulting projects
  - Taught Continuous-Time Asset Pricing to Ph.D. Students

## OTHER ACADEMIC POSITIONS

2003 Visiting Research Fellow, SOM, University of Groningen, Netherlands

2000 – Present Courtesy Appointment: Department of Statistics, Pennsylvania State University

## CONSULTING ASSIGNMENTS AND OTHER POSITIONS

2010 – Present IBM Research Fellow, affiliated with the IBM Research, T.J. Watson Laboratory; developing large scale models of the financial markets with relation to systemic risk.

2004 – 2009 Morgan Stanley: developed numerical methods for pricing credit derivative products and introduced Markov chain Monte Carlo inference techniques for calibrating credit derivative models; developed proprietary trading systems for Commodity markets.

2002 Goldman Sachs: developed and tested feasibility of different statistical arbitrage trading strategies

1998 – Present In4mation Insights: helped develop and implement methods for commercial marketing research studies

## PUBLICATIONS

### *Articles in Refereed Journals*

“Markov chain Monte Carlo methods for switching diffusion models,”\* Liechty, John C. and Gareth O. Roberts, (2001), *Biometrika*, 88, 2, pp. 229.

\* Lead Article

“Choice menus for mass customization: An experimental approach for analyzing customer demand with an application to a web-based information service,”\* Liechty, John, Venkataram Ramaswamy, and Steve Cohen, (2001), *Journal of Marketing Research*, 38, pp. 183.

\* Finalist for Paul Green Award

“Single-pass low-storage arbitrary quantile estimation for massive datasets,” Liechty, John C., Dennis K. J. Lin, and James P. McDermott, (2003), *Statistics and Computing*, 13, 2, pp. 91.

“Global and local covert visual attention: Evidence from a Bayesian hidden Markov model,”\* Liechty, John C., Michel Wedel, and Rik Pieters, (2003), *Psychometrika*, 68, 4, pp. 519.

\* *Psychometrika*'s Inaugural Discussion Paper

“Evidence for Covert Attention Switching From Eye-Movements: Reply to Commentaries on Liechty, ET AL., 2003,” Wedel, Michel, Rik Pieters, and John C. Liechty, (2003), *Psychometrika*, 68, 4, pp. 557.

*Articles in Refereed Journals (Continued)*

“Bayesian correlation estimation,”\* Liechty, John C., Merrill W. Liechty, and Peter Müller, (2004), *Biometrika*, 91, 1, pp. 1.

\* Lead Article

“A hierarchical Bayesian procedure for two-mode cluster analysis,”\* DeSarbo, Wayne, Duncan K.H. Fong, John C. Liechty, and M. Kim Saxon, (2004), *Psychometrika*, 69, 1, pp. 547.

\*Lead Article

“Modeling online browsing and path analysis using clickstream data,”\* Montgomery, Alan, Shibo Li, Kannan Srinivasan, and John C. Liechty, (2004), *Marketing Science*, 23, 4, pp. 579.

\* Finalist for John D.C. Little Award

“Evolutionary preferences/utility functions: A dynamic perspective,” DeSarbo, Wayne, Duncan K.H. Fong, John C. Liechty, and Jennifer Chang, (2005), *Psychometrika*, 70, 1, pp. 179.

“Incentive aligned conjoint,”\* Ding, Min, Rajdeep Grewal, and John C. Liechty, (2005), *Journal of Marketing Research*, 42, 1, pp. 67.

\* Finalist for Paul Green Award and Finalist for William O’Dell Award

“Dynamic models with individual level heterogeneity: Applied to evolution during Conjoint studies,” Liechty, John C., Duncan K.H. Fong, and Wayne DeSarbo, (2005), *Marketing Science*, 24, 2, pp. 285.

“Data skeletons: Simultaneous estimation of multiple quantiles for massive streaming data sets with application to density estimation,” McDermott, James P., John C. Liechty, and Dennis K. J. Lin, (2007) *Statistics and Computing*, 17, 4, pp. 311.

“Bayes vs. resampling: A rematch”, Harvey, Campbell R., John C. Liechty, and Merrill W. Liechty, (2008) *Journal of Investment Management*, 6, 1, pp. 29.

“Offering online recommendations with minimal customer input through Conjoint-based decision aids,” De Bruyn, Arnaud, John C. Liechty, Elko K.R.E. Huizingh, and Gary L. Lilien (2008) *Marketing Science*, 27, 2 pp.1.

“Hierarchical Bayesian Conjoint models incorporating measurement uncertainty,” Liechty, John, Duncan K. H. Fong, Eelko K. R. E. Huizingh, and Arnaud De Bruyn, (2008) *Marketing Letters*, 19, 2, pp. 141.

“How goals influence the time course of eye movements across advertisements,” Wedel, Michel, Rik Pieters, and John C. Liechty, (2008) *Journal of Experimental Psychology: Applied*, 14, 2, pp. 129-138.

“A hierarchical Bayesian finite mixture multidimensional scaling methodology for accommodating both structural and preference heterogeneity in metric preference data”, Park, Joonwook, Wanyne S. DeSarbo, and John Liechty, (2008) *Psychometrika*, 73(3), pp. 451-472.

**Articles in Refereed Journals (Continued)**

“Beyond conjoint analysis: Advances in preference measurement,” Netzer, Oded, Olivier Toubia, Eric T. Bradlow, Ely Dahan, Theodoros Evgeniou, Fred M. Feinberg, Eleanor M. Feit, Sam K. Hui, Joseph Johnson, John C. Liechty, James B. Orlin, and Vithala R. Rao (2008), *Marketing Letters*, 19(3-4), pp. 337-354.

“Counting chickens before the eggs hatch: Associating new product development portfolios with shareholder expectations in the pharmaceutical sector,” Grewall, Rajdeep, Anindita Chakravarty, Min Ding, John Liechty, (2008) *International Journal of Research in Marketing*, 25(4), pp. 261-272.

“The shadow prior,” Liechty, John C., Merrill Liechty and Peter Müller (2009), *Journal of Graphical and Computational Statistics*, Vol. 18, No. 2., pp. 368-383.

“Portfolio Selection with Higher Moments,”\* Harvey, C. R., Liechty, J. C., Liechty, M. W., and Müller, P. (2010), *Quantitative Finance*, Vol. 10, No. 5, pp. 469-485.

\* Lead Article

“Parallel Multivariate Slice Sampling,” Tibbits, Matthew M., Murali Haran, and John C. Liechty, (2010) forthcoming *Journal of Graphical and Computational Statistics*.

“Comments on Bayes vs. Markowitz: A Rematch,” with Harvey and Liechty (2011) forthcoming, *Journal of Investment Management*

“Closed-Form Asymptotics for Local Volatility Models,” with Cheng, Costanzino, Mazzucato and Nistor, (2011) forthcoming at the *Siam Journal on Financial Mathematics*.

**Articles in Refereed Conference Proceedings**

“Two-mode cluster analysis via hierarchical Bayes procedure,” DeSarbo, W. S., D. K. H. Fong, and J. Liechty, (2004), 27th Annual GfKI Conference, University of Cottbus, March 12 - 14, 2003. Daniel Baier, Klaus-Dieter Wernecke (eds.): *Innovations in Classification, Data Science, and Information Systems*. Springer-Verlag, Heidelberg-Berlin.

**Book Chapters**

“MCMC for Constrained Parameter and Sample Spaces”, Liechty, M. W., Liechty, J. C., and Müller, P. (2010), forthcoming, *Frontier of Statistical Decision Making and Bayesian Analysis*. Springer-Verlag.

“Parameter Uncertainty and Asset Allocation”, Liechty, M.W., Liechty, J.C., and Harvey, C.R. (2010), eds. Scherer, B., and Winston, K., forthcoming, *The [Oxford] Handbook of Quantitative Asset Management*. Oxford: Oxford University Press

"Portfolio Selection With Higher Moments" with Harvey, Liechty, and Muller, in Sharath M. Sury (ed.) (2011) forthcoming, *Essential Readings in Applied Financial Economics* San Diego: University Readers,

*Articles in the Popular Press*

“Financial Regulators Need Better Data”, Mendelowitz, Allan I. and John Liechty, *American Banker*, March 25, 2009.

“New tools mean regulators will no longer be flying blind”, Medelowitz, Allan I. and John C. Liechty, *Financial Times*, May 6, 2010, pg. 24.

## COMPLETED WORKING PAPERS

“Attribute level heterogeneity,” with Ebbes, Tibbits and Grewal, being revised for second round at *Management Science*.

“Proper Portfolio Procedures using Bayesian Methods in Mean and Variance,” with Harvey, Liechty and Müller, intended for the *Journal of Portfolio Management*.

“Bayesian Quadrature Approaches to State Price Density Estimation”, with Teng intended for *Econometrika*.

“Persistence, Smoothing and Hedge Fund Performance Valuation,”\* with Huang and Rossi, intended for the *Journal of Finance*.

\* Finalist Best Paper Financial Management Association Meeting, 2009

“Market orientation, strategy type, environmental dynamism, and firm performance: Modeling higher order effects,” with Grewal and Wang, intended for the *Journal of Marketing Research*.

“Consumer time orientation and pattern of inter-purchase durations and repeat purchase quantities,” with Grewal and Atalay, intended for the *Journal of Consumer Research*.

## Selected WORKS IN PROGRESS

“Bayesian grouped factor models and industry and debt classification,” with Campbell, Lopez and Liechty, intended for *Journal of the American Statistical Association*.

“Regime switching covariance matrices with application to asset allocation”, with Zhuang and Simion, intended for the *Journal of the American Statistical Association*.

“Massively parallel Markov chain Monte Carlo,” with Lopez and Tibbits, intended for the *Journal of the Royal Statistics Society Series B*.

## PROFESSIONAL ACTIVITIES

### *Conference Organizer*

Organizing Committee, “Frameworks for Systemic Risk Monitoring, organized by the Committee to Establish the National Institute of Finance and the Center for Financial Policy at the R.H. Smith School of Business at the University of Maryland; sponsored by the Pew Charitable Trust and the Sloan Foundation.

### *Conference Presentations and Roundtables*

Keynote Speaker, Innovation Summit on “Leveraging Information Technology to Drive Innovation in the Federal Financial Sector”, organized by the U.S. Treasury Department, University of Maryland and Tata Consulting Services. January 2010.

Presenter, Gov. 2.0 Summit on Transparency in Financial Systems, organized by The O’Riley Company and The Berkman Center for Internet & Society, Harvard University, September 2009.

Invited Participant, Eighteenth Annual Aspen Institute Roundtable on Information Technology, Extreme Inference: Implications of Data Intensive Advanced Correlation Techniques, August 2009.

Invited Panelist, Exploration Workshop: Exploring Statistical Issues in Financial Risk Modeling and Banking Regulation, organized by the Office of the Comptroller of the Currency and the National Institute of Statistical Sciences, February 2009.

“Modeling Consumer Heterogeneity using Super-Clusters,” Marketing Science Conference, Summer 2006.

“Optimal Bayesian Sequential Experimental Design for Conjoint Analysis,” Marketing Science Conference, Summer 2005.

“Optimal Sequential Questions,” Marketing Science Conference, Summer 2003.

“It’s What You Don’t Like That’s Important: Improving Conjoint Analysis by Incorporating Uncertainty,” Marketing Science Conference, Summer 2002.

“Modeling Time Varying Correlation Structures,” Joint Statistical Meetings, Summer 2001.

“Measuring and Modeling Uncertainty,” Marketing Science Conference, Summer 2001.

“MCMC and Continuous-time, Hidden Markov Models,” Invited paper at the Savage Award session of the 2000 Summer Joint Statistical Meetings.

“Constrained, Multivariate Probit Models with Heterogeneity, a Bayesian Approach,” Bayesian Applications and Methods in Marketing Conference, The Ohio State University, Fall 1999

“MCMC and Continuous-time, Hidden Markov Models,” Royal Statistical Society, Practical Bayesian Statistics 4 Conference, University of Nottingham, Summer 1997.

## PROFESSIONAL ACTIVITIES (Cont ...)

### *Government Testimony*

“Equipping Financial Regulators with the Tools Necessary to Monitor Systemic Risk”, U.S. Senate Subcommittee on Security and International Trade and Finance, February 12, 2010.

### *Public Service*

Founding member of the Committee to Establish the National Institute of Finance ([www.ce-nif.org](http://www.ce-nif.org)); this effort brought together over 150 experts from academia, industry and the regulatory community, including six Nobel Laureates, and resulted in the provision to create an Office of Financial Research, in the U.S. Treasury, as part of the S.3217, the *Restoring American Stability Act of 2010*.

### *Editorial Roles*

Guest Area Editor *Marketing Science*

Editorial Board *Marketing Science* - May 2007 - Present

Adhoc Reviewer for *Biometrika*

Adhoc Reviewer for *Journal of Marketing Research*

Adhoc Reviewer for the *Journal of Business Studies*

Adhoc Reviewer for the *Journal of Graphical and Statistical Computing*

Adhoc Reviewer for *Marketing Science*

Adhoc Reviewer for *Management Science*

Adhoc Reviewer for *Psychometrika*

Adhoc Reviewer for the *National Science Foundation*

## PATENTS

“Single-pass low-storage arbitrary probabilistic location estimation for massive data sets,” with McDermott and Lin, U.S. No. 60/283,003.