

# JOHN C. LIECHTY

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Professor of Marketing and Statistics  
Smeal College of Business  
The Pennsylvania State University  
*March 2023*

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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

Overseas Visiting Fellow, Churchill College, Cambridge University, 2023  
Visiting Fellow, Judge Business School, Cambridge University, 2023  
DARPA Award to Study the Impact of Financial Markets on the Macroeconomy, 2022  
Alfred P. Sloan Grant to Study the Dynamics of High Frequency Stock Exchanges, 2018  
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, from 1999

### ACADEMIC POSITIONS

- 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 Data Science and Statistics to MBA and Executive MBA 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
  - 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

2013 – 2016 Researcher, Office of Financial Research, U.S. Department of Treasury: helping set research policy, developing market driven systemic risk monitoring tools, agent-based scenario analytic tools and writing academic papers based on this work.

2011 – 2012 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 – 2012 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.

2001 – 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. 229-315.

\* 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(2), pp. 183-196.

\* 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. 91-100.

“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. 519-541.

\* *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. 557-562.

“Bayesian Correlation Estimation,”\* Liechty, John C., Merrill W. Liechty, and Peter Müller, (2004), *Biometrika*, 91(1), pp. 1-14.

\* 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. 547-572.

\*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. 579-595.

\* 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. 179-202.

“Incentive Aligned Conjoint,”\* Ding, Min, Rajdeep Grewal, and John C. Liechty, (2005), *Journal of Marketing Research*, 42(1), pp. 67-82.

\* 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. 285-293.

“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. 311-321.

“Bayes vs. Resampling: A Rematch”, Harvey, Campbell R., John C. Liechty, and Merrill W. Liechty, (2008) *Journal of Investment Management*, 6(1), pp. 1-17.

“Comments on Bayes vs. Markowitz: a Rematch,” Harvey, Campbell R., John C. Liechty, and Merrill W. Liechty, (2008) *Journal of Investment Management*, 6(2), pp. 1-2.

“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.443-460.

“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.

**Articles in Refereed Journals (Continued)**

“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.

“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*, 18(2), pp. 368-383.

“Portfolio Selection with Higher Moments,”\* Harvey, C. R., Liechty, J. C., Liechty, M. W., and Müller, P. (2010), *Quantitative Finance*, 10(5), pp. 469-485.

\* Lead Article

“Parallel Multivariate Slice Sampling,” Tibbits, Matthew M., Murali Haran, and John C. Liechty, (2010) *Statistics and Computing*, 21(3), pp. 415-430.

“Closed-form Asymptotics for Local Volatility Models,” Cheng, W., Costanzino, N., Liechty, J., Mazzucato A. L., and Nistor, V., (2011) *SIAM Journal on Financial Mathematics*, 2, pp. 901-934.

“Scientists and Bankers - a New Model Army,”\* Liechty, John (2012), *Nature*, 484, pp. 143.

\*World View Article

“Automated Factor Slice Sampling,” Tibbits, Matthew M., Groendyke, Chris, Haran, Murali and Liechty, John C., (2014) *Journal of Computational and Graphical Statistics*, 23:2, 543-563.

“Perspectives on Bayesian Methods and Big Data,” Allenby, Greg M., Eric T. Bradlow, Edward I. George, John C. Liechty and Robert E. McCulloch, (2014) *Customer Needs and Solutions* 1(3) pp. 169-175.

“Attribute Level Heterogeneity,” Ebbes, Peter, John C. Liechty and Rajdeep Grewal, (2015) *Management Science* 61(4), pp. 885-897

“Return Smoothing and its Implications for Performance Analysis of Hedge Funds,” Rossi, Marco, JingZhi Huang, John C. Liechty, (2018) *Journal of Finance and Data Science*, 4(4), pp. 203-222.

“Gremlins in the Data: Identifying the Information Content in Research Subjects,” Howell, John, Peter Ebbes, John C. Liechty, (2021), *Journal of Marketing Research* 58(1), pp. 74-94.

“If I had a Hedge Fund, I Would Cure Diabetes Endogenous Mechanisms for Creating Public Goods,” Liechty, John C. and Stefan Wuyts, (2021) *SN Bus Econ.* 2021;1(10):120.

“A Machine Learning Approach to Classification for Traders in Financial Markets,” Wright, Isaac, Matthew Reimherr, and John Liechty, (2022) *Stat.* 11:e465.

**Articles in Refereed Journals (Continued)**

“Quantitative Geometric Modeling of Blood Cells from X-ray Histotomograms of Whole Zebrafish Larvae,” (2023) Maksim A Yakovlev, Ke Liang, Carolyn R Zaino, Daniel J Vanselow, Andrew L Sugarman, Alex Y Lin, Patrick J La Riviere, Yuxi Zheng, Justin D Silverman, John C Liechty, Sharon X Huang, Keith C Cheng. Forthcoming *eLife*.

**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 GfKl 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.

“Simulating Heterogeneous Portfolio Choices and Financial Market Outcomes”, Benth, Sebastian, Christopher Carol, Zachary David, John Liechty, Alan Lujan, Christopher McComb and Nicholas Skar-Gislinge (2023) Second Workshop in Agent-based Modeling & Policy-Making (AMPM '22). Saarbrücken, Germany.

**Book Chapters**

“MCMC for constrained parameter and sample spaces,” Liechty, M. W., Liechty, J. C., and Müller, P. (2010), eds. M. Chen, D. Dey, P. Müller, D. Sun and K. Ye, *Frontier of Statistical Decision Making and Bayesian Analysis*. Springer-Verlag, Heidelberg-Berlin..

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

“Portfolio selection with higher moments,” with Harvey, Liechty, and Muller, (2012) eds. S. Sury, *Essential Readings in Applied Financial Economics* San Diego: University Readers,

“Regime switching models and risk management tools,” Liechty, John (2012), eds. JP Fouque and Joseph Langsam, *The Handbook of Systemic Risk*. Cambridge; Cambridge University Press.

“Frameworks for Systemic Risk Monitoring,” King, A., Liechty, J., Rossi, C., Taylor, C, (2012), eds. JP Fouque and Joseph Langsam, *The Handbook of Systemic Risk*. Cambridge; Cambridge University Press.

**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.

“Financial hurricanes,” Liechty, John C. and Richard Foster, *Significance*, November 25, 2011.

***TEDx PSU Talks***

“If I Had a Hedge Fund,” (2019)

[https://www.ted.com/talks/john\\_liechty\\_if\\_i\\_had\\_a\\_hedge\\_fund\\_mar\\_2020](https://www.ted.com/talks/john_liechty_if_i_had_a_hedge_fund_mar_2020), Penn State TEDx.

“Augmented Intelligence,” (2020) [https://www.ted.com/talks/john\\_liechty\\_augmented\\_intelligence](https://www.ted.com/talks/john_liechty_augmented_intelligence).  
Penn State TEDx.

**COMPLETED WORKING PAPERS**

“Optimal Sequence of Questions for Recommender Systems: A Generalized D-Optimal Approach,”  
with Rangaswamy and Zhang.

“Exact Bayesian Posterior Inference Via Neural Networks,” with Tunuguntla and Melessa.

**Selected WORKS IN PROGRESS**

“Robin Hood for Good?”, with Benthall, Carol, Lujan, David and Sar-Gislinge.

“Click Mayhem: An Attention First Online World and the Case for Transferable Liability,” with  
Kankanhalli.

“Geographic Clustering of Marketing Mix Variables: Disentangling the National vs. Store Level  
Effects,” with Melessa, Cohen and Garrett.

“The Collapse of Marketing (variables),” with Howell, Ebbes, Liechty, Melessa and Garrett.

“An Individual Level Scale for Measuring Despair,” with Kankanhalli.

“Social Media Impact on Despair,” with Kankanhalli and George

**PATENTS**

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

## PROFESSIONAL ACTIVITIES

### ***Government Testimony***

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

“Oversight of the Office of Financial Research and Financial Stability Oversight Council,” U.S. House of Representatives Committee on Financial Services; Subcommittee on Oversight and Investigation, July 14, 2011.

### ***Public Service***

Founding member of the Committee to Establish the National Institute of Finance; 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*.

### ***Conference & Workshop Organizer***

Organizing Committee, “Frameworks for Systemic Risk Monitoring,” (2010), 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.

Organizing Committee, “Privacy and Confidentiality Issues for Financial Data,” (2012), organized and funded by the Center for the Study of Global Financial Stability at Penn State University.

Organizing Committee, “Bayesian Marketing and Machine Learning,” (2023), organized and funded by participants. Hosted by the Cambridge Judge Business School.

Organizing Committee, “Informing the Rebuilding of the Ukrainian Economy Using Society Scale Simulations.” (2024), Hosted by the Copenhagen Center for Social Data Science, University of Copenhagen.

### ***Editorial Roles***

Statistical Section Editor for the *Handbook of Systemic Risk*

Guest Area Editor for *Marketing Science*

Editorial Board *Marketing Science* - May 2007 - 2011

Ad hoc Reviewer for *Quantitative Finance*

Ad hoc Reviewer for *Biometrika*

Ad hoc Reviewer for *Journal of Marketing Research*

Ad hoc Reviewer for the *Journal of Business Studies*

Ad hoc Reviewer for the *Journal of Graphical and Statistical Computing*

Ad hoc Reviewer for *Marketing Science*

Ad hoc Reviewer for *Management Science*

Ad hoc Reviewer for *Psychometrika*

Ad hoc Reviewer for the *National Science Foundation*

**PROFESSIONAL ACTIVITIES (Continued)*****Conferences Presentations and Roundtables***

- Judge School of Business, Cambridge, “Preventing Poverty is Everyone’s Business,” Winter 2022
- Marketing, Retail, Advertizing and Consulting Conference, Univeristy of Virginia, “Preventing Poverty is Everyone’s Business,” Spring 2022
- Judge School of Business, Cambridge, “If I had a Hedge Fund”, Spring 2019
- First European Bayesian Marketing Summit, “Variable Selection for Categories”, Winter 2019
- University of North Carolina, Marketing, “If I had a Hedge Fund”, Fall 2018
- BYU Marketing department seminar series, “Gremlins in the Data”, Fall 2016.
- NYU Finance, Seminar Series, “System-Wide Commonalities in Market Liquidity”, Spring 2015.
- 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 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 2009.
- Invited Participant, Eighteenth Annual Aspen Institute Roundtable on Information Technology, Extreme Inference: Implications of Data Intensive Advanced Correlation Techniques 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 2009.
- “Modeling Consumer Heterogeneity using Super-Clusters,” Marketing Science Conference 2006.
- “Optimal Bayesian Sequential Experimental Design for Conjoint Analysis,” Marketing Science Conference 2005.
- “Optimal Sequential Questions,” Marketing Science Conference 2003.
- “It’s What You Don’t Like That’s Important: Improving Conjoint Analysis by Incorporating Uncertainty,” Marketing Science Conference 2002.
- “Modeling Time Varying Correlation Structures,” Joint Statistical Meetings 2001.
- “Measuring and Modeling Uncertainty,” Marketing Science Conference 2001.
- “MCMC and Continuous-time, Hidden Markov Models,” Joint Statistical Meetings 2000.
- “MCMC and Continuous-time, Hidden Markov Models,” Royal Statistical Society 1997.