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Canadian Citizen
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Employment History

University of Pennsylvania

Assistant Professor, Department of Statistics, The Wharton School	2004-present
Faculty Member, Graduate Group in Genomics and Computational Biology	2004-present

Education

Harvard University

Ph.D. Statistics	2004
Thesis title: “Statistical methods for elucidating cell regulation.”	
Winner of the Leonard J. Savage Award for best thesis in application methodology from the International Society for Bayesian Analysis	
A.M. Statistics	2001

McGill University

M.Sc. Statistics, Dean’s Honors List	1999
Thesis title: “The Laguerre-Samuelson inequality, with extensions and applications in statistics and matrix theory.”	
B.Sc. with Great Distinction	1997
Joint Major in Biology and Mathematics	

Refereed Publications

1. Jensen, S.T., McShane, B. and Wyner, A.J. “Hierarchical Bayesian modeling of hitting performance in baseball.” Accepted for publication in *Bayesian Analysis*.
2. Megraw, M., Sethupathy, P., Gumireddy, K., Jensen, S.T., Huang, Q. and Hatzigeorgiou, A.G. “Isoform specific gene auto-regulation via miRNAs: a case study on miR-128b and ARPP-21.” Accepted for publication in *Theoretical Chemistry Accounts*.
3. Jensen, S.T., Erkan, I., Arnardottir, E.S. and Small, D.S. (2009). “Bayesian testing of many hypotheses \times many genes: a study of sleep apnea.” *Annals of Applied Statistics* 3:1080–1101.
4. Jensen, S.T., Soi, S. and Wang, L. (2009). “A Bayesian approach to efficient differential allocation for resampling-based significance testing.” *BMC Bioinformatics* 10:198.
5. Jensen, S.T., Shirley, K. and Wyner, A.J. (2009). “Bayesball: a Bayesian hierarchical model for evaluating fielding in major league baseball.” *Annals of Applied Statistics* 3:491–520.
6. Megraw, M., Pereira, F., Jensen, S.T., Ohler, U. and Hatzigeorgiou, A. (2009). “A transcription factor affinity-based code for mammalian transcription initiation.” *Genome Research* 19:644–656.

7. Braunstein, A., Wei, Z., Jensen, S.T. and McAuliffe, J. (2008). "A spatially varying two-sample recombinant coalescent, with applications to HIV escape response." *Advances in Neural Information Processing Systems 21* (NIPS 2008), pp. 193–200.
8. Tuteja, G., Jensen, S.T., White, P. and Kaestner, K.H. (2008). "Cis-regulatory modules in the mammalian liver: composition depends on strength of Foxa2 consensus site." *Nucleic Acids Research* 36:4149–4157.
9. Kandylas, V., Ungar, L.H., Sandler, T. and Jensen, S.T. (2008). "Multiway clustering for creating biomedical term sets." *IEEE International Conference on Bioinformatics and Biomedicine* (BIBM 2008), pp. 449–452.
10. Bradlow, E.T., Jensen, S.T., Wolfers, J. and Wyner, A.J. (2008). "A statistical look at Roger Clemens' pitching career." *Chance* 21:24–30.
11. Yan, B., Chen, G., Sigal, K., Yang, X., Jensen, S.T., Van Waes, C., Stoeckert, C.J. and Chen, Z. (2008). "Systems biology-defined NF- κ B regulons, interacting signal pathways and networks are implicated in the malignant phenotype of head and neck cancer cell lines differing in p53 status." *Genome Biology* 9:R53.
12. Jensen, S. T. and Liu, J.S. (2008). "Bayesian clustering of transcription factor binding motifs." *Journal of the American Statistical Association* 103:188–200.
13. Che, D., Li, G., Jensen, S.T., Liu, J.S. and Xu, Ying. (2008). "PFP: a computational framework for phylogenetic footprinting in prokaryotic genomes." In *Bioinformatics Research and Applications*, Lecture Notes in Computer Science, Volume 4983, pp. 110–121.
14. Jensen, S.T., Chen, G. and Stoeckert, C. (2007). "Bayesian variable selection and data integration for biological regulatory networks." *Annals of Applied Statistics* 1:612–633.
15. Mackiewicz, M., Shockley, K.R., Romer, M.A., Galante, R.J., Zimmerman, J.E., Naidoo, N., Baldwin, D.A., Jensen, S.T., Churchill, G.A. and Pack, A.I. (2007). "Macromolecule biosynthesis: a key function of sleep." *Physiological Genomics* 31:441–457.
16. Carruth, M. and Jensen S.T. (2007). "Evaluating throwing ability in baseball." *Journal of Quantitative Analysis in Sports* 3: Issue 3, Article 2.
17. Chen, G., Jensen, S.T. and Stoeckert, C. (2007). "Clustering of genes into regulons using integrated modeling - COGRIM" *Genome Biology* 8:R4.
18. Megraw, M., Baev, V., Rusinov, V., Jensen, S.T., Kalantidis, K. and Hatzigeorgiou, A.G. (2006). "MicroRNA promoter element discovery in *Arabidopsis*." *RNA* 12:1612–1619.
19. Wei, Z. and Jensen, S.T. (2006). "GAME: detecting cis-regulatory elements using a genetic algorithm." *Bioinformatics* 22:1577–1584.
20. Wang, L., Jensen, S.T. and Hannenhalli, S. (2006). "An interaction-dependent model for transcription factor binding." In *Systems Biology and Regulatory Genomics*, Lecture Notes in Computer Science, Volume 4023, pp. 225–234.
21. Jensen, S.T., Shen, L. and Liu, J.S. (2005). "Combining phylogenetic motif discovery and motif clustering to predict co-regulated genes." *Bioinformatics* 21:3832–3839.
22. Che, D., Jensen, S.T., Cai, L. and Liu, J.S. (2005). "BEST: binding-site estimation suite of tools." *Bioinformatics* 21: 2909–2911.
23. Glickman, M.E. and Jensen, S.T. (2005). "Adaptive paired comparison design." *Journal of Statistical Planning and Inference* 127:279–293.
24. Eichenberger, P., Fujita, M., Jensen, S.T., Conlon, E.M., Rudner, D.Z., Wang, S., Ferguson, C., Sato, T., Liu, J.S. and Losick R. (2004). "The program of gene transcription for a single differentiating cell type during sporulation in *Bacillus subtilis*." *PLoS Biology* 2:e328.

25. Jensen, S.T. and Liu, J.S. (2004). “BioOptimizer: a Bayesian scoring function approach to motif discovery.” *Bioinformatics* 20:1557–1564.
26. Jensen, S.T., Liu, X.S., Zhou, Q. and Liu, J.S. (2004). “Computational discovery of gene regulatory binding motifs: a Bayesian perspective.” *Statistical Science* 19:188–204.
27. Molle, V., Fujita, M., Jensen, S.T., Eichenberger, P., Gonzalez-Pastor, E., Liu, J.S. and Losick, R. (2003). “The spo0A regulon of *Bacillus subtilis*.” *Molecular Microbiology* 50:1683–1701.
28. Eichenberger, P., Jensen, S.T., Conlon, E.M., van Ooij, C., Silvaggi, J., Fujita, M., Ben-Yehuda, S., Stragier, P., Liu, J.S. and Losick, R. (2003). “The σ^E regulon and the identification of additional sporulation genes in *Bacillus subtilis*.” *Journal of Molecular Biology* 327:945–972.
29. Lenzenweger, M., Jensen, S.T. and Rubin, D.B. (2003). “Finding the ‘genuine’ schizotype: a model and method for resolving heterogeneity in performance on laboratory measures in experimental psychopathology research.” *Journal of Abnormal Psychology* 112:457–468.
30. Jensen, S.T., Lenzenweger, M. and Rubin, D.B. (2002). “A Bayesian approach to reducing heterogeneity in laboratory measures: an illustration from schizophrenia research.” *Case Studies in Bayesian Statistics* 6:255–266.
31. Stirling, G., Fairbairn, D.J., Jensen, S. and Roff, D.A. (2001). “Does a negative genetic correlation between wing morph and early fecundity imply a functional constraint in *Gryllus firmus*?” *Evolutionary Ecology Research* 3:157–177.
32. Jensen, S.T. and Styan, G.P.H. (1999). “Some comments and a bibliography on the Laguerre-Samuelson inequalities with extensions and applications to statistics and matrix theory.” In *Analytical and Geometric Inequalities and Applications*. Kluwer Academic, pp. 151–182.

Popular Media Articles

33. Bradlow, E., Jensen, S.T., Wolfers, J. and Wyner, A. (2008). “Report backing Clemens chooses its facts carefully.” *New York Times*. February 10, 2008.

Working Papers

34. Jensen, S.T. and Shore, S.H. “Changes in the distribution of income volatility.” Working paper.
35. Heller, R., Jensen, S.T., Rosenbaum, P.R. and Small, D.S. “Sensitivity analysis for the cross-match test, with applications in genomics.” Working paper.
36. Jensen, S.T. and Shore, S.H. “Semi-parametric Bayesian modeling of income volatility heterogeneity and dynamics.” Working paper.
37. McShane, B., Jensen, S.T. and Wyner, A.J. “Statistical learning methods for modeling sleep in mice.” Working paper.
38. Wallach, H.M., Jensen, S.T., Dicker, L. and Heller, K. “An alternative prior process for nonparametric Bayesian clustering.” Working paper.
39. Braunstein, A., Jensen, S.T. and McAuliffe, J. “Bayesian coalescent modeling of the evolutionary response of HIV to therapy.” Working paper.
40. McShane, B.B., Braunstein, A., Piette, J. and Jensen, S.T. “A Bayesian variable selection approach to major league baseball hitting metrics.” Working paper.
41. McShane, B.B., Galante, R.J., Jensen, S.T., Mackiewicz, M., Pack, A.I. and Wyner, A.J. “Characterization of the bout durations of sleep and wakefulness.” Working paper.

Media Attention

1. “Derek Jeter vs. objective reality” by Nate DiMeo. *Slate*. July 14, 2008.
2. “Numbers tell a glove story” by Gideon Gil. *Boston Globe*. February 17, 2008.
3. “Statistics in the outfield” by Greta Lorge. *Wired*. February 16, 2008.
4. “Baseball’s top fielders ranked in new statistical system” by Randolph E. Schmid. *AP*. February 16, 2008.
5. “Stats show something unusual happened in Clemens’ career” by Lester Munson. *ESPN*. February 10, 2008.

Grants Received

Wharton Sports Business Initiative, University of Pennsylvania Evaluation of Fielding in Major League Baseball.	2008
National Institute on Aging Mechanisms of Alterations in Sleep with Age.	2006
Center for AIDS Research, University of Pennsylvania Spatially-varying Evolutionary Models of Viral Escape Response.	2006
University Research Foundation, University of Pennsylvania Integrating Multiple Data Sources to Improve Motif Discovery.	2005
Entertainment and Sports Programming Network Wharton MLB Player Valuation Project and Development Venture.	2005

Students Advised

Blake McShane Department of Statistics, The Wharton School, University of Pennsylvania	Ph.D. in progress
Alexander Braunstein Department of Statistics, The Wharton School, University of Pennsylvania Thesis: “Bayesian statistical models for HIV evolution.” Placement: Statistical research group at Google, Inc.	Ph.D. 2009
Lee Dicker Department of Statistics, The Wharton School, University of Pennsylvania Thesis: “Random partitions in population genetics and Bayesian nonparametric statistics.” Placement: Biostatistics doctoral program at Harvard School of Public Health	M.Sc. 2006

Teaching Awards

David W. Hauck Award for Excellence in Undergraduate Teaching, The Wharton School	2009
Certificate of Distinction in Teaching, Harvard University	2002, 2003

Teaching Experience

Department of Statistics, The Wharton School, Assistant Professor

Statistics 111: Introduction to Statistics	2005-2008
Statistics 540: Statistical Computing	2005-2006
Statistics 542: Bayesian Methods and Computation	2007-2009

Graduate Group in Genomic and Computational Biology, Assistant Professor

GCB 537: Independent Study in Computational Biology	2005
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Department of Statistics, Harvard University, Teaching Fellow

Statistics 100: Introduction to Statistics (Dr. Willis Davis)	2001-2003
Statistics 101: Introduction to Statistics (Dr. Steve Wang)	1999
Statistics 102: Introduction to Biostatistics (Dr. Bernard Rosner)	2000
Statistics 104: Introduction to Statistics (Dr. Mark Irwin)	2003
Statistics 110: Introduction to Probability (Dr. Wing Wong)	2001
Statistics 111: Statistical Inference (Dr. Xiao-Li Meng, Dr. Samuel Kou)	2002-2003
Statistics 139: Regression Analysis (Dr. Steve Wang, Dr. Xiao-Li Meng)	2000,2002
Statistics 149: Generalized Linear Models (Dr. John Barnard)	2001
Statistics 220: Bayesian Data Analysis (Dr. David van Dyk)	2000

Department of Mathematics and Statistics, McGill University, Teaching Assistant

Mathematics 150: Calculus A (Dr. Stephen Drury)	1998
Mathematics 323: Probability Theory (Dr. George Styan)	1997,1999
Mathematics 324: Statistics (Dr. George Styan)	1999
Mathematics 423: Regression and Analysis of Variance (Dr. George Styan)	1998

Invited Seminars

“Shrinkage in the Evaluation of Fielding in Major League Baseball.” Joint Statistical Meetings, Washington, DC, August 5, 2009.

“Hierarchical Bayesian Coalescent Modeling of the Evolutionary Escape Response of HIV.” Department of Health Studies, University of Chicago. May 13, 2009.

“Bayesball: A Bayesian Hierarchical Model for Evaluating Fielding in Baseball.” Department of Statistics, Columbia University. April 13, 2009.

“Bayesian Variable Selection for Biological Regulatory Networks.” Computer and Information Sciences, University of Delaware. October 24, 2008.

“Changes in the Distribution of Income Volatility.” Wharton Applied Economics Workshop. The Wharton School, University of Pennsylvania. June 18, 2008.

“Bayesian Modeling of Changes in the Distribution of Income Volatility.” Seminar on Bayesian Inference in Econometrics and Statistics. University of Chicago Graduate School of Business. May 3, 2008.

“Bayesian Variable Selection and Data Integration for Biological Regulatory Networks.” Program in Integrative Information, Computer and Application Sciences. Princeton University. March 5, 2008.

“Statistical Models for the Evaluation of Fielding Performance.” Annual Meetings of the American Association for the Advancement of Science. Boston, MA. February 16, 2008.

“Hierarchical Models in Applied Statistics.” Institute for Education Sciences Training Program in Interdisciplinary Methods for Education Research. Philadelphia, PA. January 25, 2008.

“Statistical Models for the Evaluation of Fielding in Baseball.” Delaware Chapter of the American Statistical Association. November 15, 2007.

“Statistical Models for the Evaluation of Fielding in Baseball.” New England Symposium on Statistics in Sports, Harvard University. September 29, 2007.

“Bayesian Variable Selection and Data Integration for Biological Regulatory Networks.” Center for Statistics and the Social Sciences, University of Washington. May 16, 2007.

“Bayesian Clustering with the Dirichlet Process.” Third Workshop on Monte Carlo Methods, Harvard University. May 13, 2007.

“Statistical Issues in microRNA Promoter Element Discovery.” MicroRNA in Cancer and Development Workshop, Mathematical Biosciences Institute, Ohio State University. April 12, 2007.

“Bayesian Variable Selection and Data Integration for Biological Regulatory Networks.” Department of Statistics, Rutgers University, December 6, 2006.

“A Bayesian Hierarchical Model for Integrating Heterogeneous Biological Information.” Joint Statistical Meetings, Minneapolis, MN, August 9, 2006.

“Mixture Modeling of Heterogeneity in Schizophrenia Data.” Department of Biostatistics, Columbia School of Public Health, January 26, 2006.

“A Bayesian Hierarchical Model for Integrating Heterogeneous Biological Information.” Department of Statistics, Pennsylvania State University, December 8, 2005.

Academic Service: Thesis Committees

Renuka Nayak

Graduate Group in Genomics and Computational Biology, University of Pennsylvania Ph.D. in progress

Logan Everett

Graduate Group in Genomics and Computational Biology, University of Pennsylvania Ph.D. in progress

Rumen Kostadinov

Graduate Group in Genomics and Computational Biology, University of Pennsylvania Ph.D. in progress

Tom Petty

Graduate Group in Genomics and Computational Biology, University of Pennsylvania Ph.D. in progress

Caiyan Li

Department of Biostatistics and Epidemiology, University of Pennsylvania Ph.D. in progress

Geetu Tuteja

Graduate Group in Genomics and Computational Biology, University of Pennsylvania Ph.D. 2008

Irina Bochkis

Graduate Group in Genomics and Computational Biology, University of Pennsylvania Ph.D. 2008

Zhi Wei

Graduate Group in Genomics and Computational Biology, University of Pennsylvania Ph.D. 2008

Guang Chen

Department of Bioengineering, University of Pennsylvania Ph.D. 2007

Praveen Sethupathy

Graduate Group in Genomics and Computational Biology, University of Pennsylvania Ph.D. 2007

Molly Megraw

Graduate Group in Genomics and Computational Biology, University of Pennsylvania Ph.D. 2007

Tao Liu

Department of Biostatistics and Epidemiology, University of Pennsylvania Ph.D. 2006

Academic Service: Other Committees

Curriculum and Advising Committee

Graduate Group in Genomics and Computational Biology, University of Pennsylvania 2006-2009

Conference Program Committee

WABI: Workshop on Algorithms in Bioinformatics 2007,2009

Qualifying Exam Committee

Graduate Group in Genomics and Computational Biology, University of Pennsylvania 2005-2006

Academic Service: Paper Reviewing

Annals of Applied Statistics	2006
Annals of Statistics	2005
Asia Pacific Bioinformatics Conference (APBC)	2006-07
Bayesian Analysis	2008
Bioinformatics	2006-07
BMC Bioinformatics	2006
Biometrics	2006
IEEE Transactions on Signal Processing	2007
International Conference on Machine Learning (ICML)	2006
Journal of the American Statistical Association	2005-07
Journal of Machine Learning and Research	2009
Journal of Quantitative Analysis in Sports	2007-08
Journal of Statistical Planning and Inference	2006
Neural Information Processing Systems (NIPS)	2009
PLOS One	2008
Proceedings of the National Academy of Sciences	2006
Psychometrika	2005-07
Research in Computational Molecular Biology (RECOMB)	2004-05
Statistica Sinica	2007
Statistical Science	2009

References

Professor Edward I. George
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Professor Dean Foster
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Professor Abraham J. Wyner
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