

July 12, 2021

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### Education

Ph.D. in Statistics, University of Chicago, August 1980. Thesis title: *The Riemannian Structure of Model Spaces: A Geometrical Approach to Inference*. Advisor: Stephen M. Stigler.  
Graduate work in statistics and mathematics, University of Wisconsin-Madison, 1975-1976.  
B.A. in Mathematics, Antioch College, 1975.

### Positions Held

Department of Statistics, Carnegie Mellon University, Maurice Falk Professor 2016-present;  
Professor 1992-2016; Associate Professor, 1986-1992; Assistant Professor, 1981-1986;  
Department Head, 1995-2004.  
Center for the Neural Basis of Cognition, Carnegie Mellon University, Faculty Member, 1997-present; interim CMU-side Director, 2015-2018.  
Machine Learning Department, Carnegie Mellon University, Professor, 2007-present.  
Neuroscience Institute, Carnegie Mellon University, Professor, 2018-present.  
Department of Biomedical Engineering, Carnegie Mellon University, Professor by Courtesy, 2018-present.  
Department of Neuroscience, University of Pittsburgh, Adjunct Professor, 2005-present.  
Department of Statistics, Harvard University, Visiting Scholar, 1987-1988.  
Department of Statistics, Pennsylvania State University, Visiting Associate Professor, Summer 1985.  
Departments of Statistics and Biostatistics, University of Washington, Visiting Assistant Professor, Summer 1983.  
Department of Applied Statistics, University of Minnesota, Honorary Fellow, Summer 1982.  
Department of Statistics, Princeton University, National Science Foundation Postdoctoral Research Fellow, 1980-1981.  
Department of Statistics, University of Chicago, Lecturer, Summer 1978.  
Department of Statistics, Harvard University, Research Assistant to Frederick Mosteller, Summer 1977.  
Division of Respiratory Diseases, Harvard Medical Unit, Beth Israel Hospital, Research Assistant, Summer 1974.

Department of Pathology, University of Geneva, Switzerland, Research Assistant, Spring 1972.  
Kettering Institute, Yellow Springs, Ohio, Research Assistant, Fall 1971.

### **Awards and Professional Recognition**

R.A. Fisher Award and Lectureship; Committee of Presidents of Statistical Societies, 2017.  
Bernard G. Greenberg Distinguished Lecturer, Department of Biostatistics, University of North Carolina at Chapel Hill, 2017.  
Swartz Lecturer in Computational Neuroscience, University of Washington, 2017.  
Outstanding Statistical Application Award, American Statistical Association, 2013.  
Presidential Invited Lecturer, Biometric Society (ENAR), 2010.  
“Most-Cited Researcher” across 10 years (ranked no. 4 in 1995-2005) in the field of “Mathematics,” Institute for Scientific Information.  
Miller Visiting Research Professor, University of California, Berkeley, Spring, 2005.  
Elected Fellow, American Association for the Advancement of Science, 2002.  
Institute Medallion Lecturer, Institute of Mathematical Statistics, 2002.  
Statistician of the Year, Pittsburgh Chapter of the American Statistical Association, 1994.  
Special Invited Lecturer, Institute of Mathematical Statistics, 1992.  
Elected Fellow, Institute of Mathematical Statistics, 1991.  
Elected Fellow, American Statistical Association, 1990.  
Leonard J. Savage Award for Outstanding Thesis in Bayesian Statistics and Econometrics, 1981.

### **Fellowships and Grants**

#### **National Science Foundation**

2014-2018 “Understanding Single Neuron Computation by Combining Biophysical and Statistical Models” (CRCNS), with Nathan Urban and Alon Korngreen.  
2006-2017 “Statistical Analysis of Neuronal Data” (workshops, May 2006, 2008, 2010, 2012, 2015, 2017).  
2010-2016 “RTG: Statistics and Machine Learning for Scientific Inference,” with William F. Eddy, Christopher R. Genovese, Kathryn Roeder, and Larry Wasserman.  
2013-2016 “Modeling Neural Activity: Statistics, Dynamical Systems, and Networks” (workshops in 2013 and 2016).  
2011 “Case Studies in Bayesian Statistics and Machine Learning” (workshop).  
2004-2006, “Sabbatical Training in Neuroscience.”  
2001-2004, “Complex Statistical Models: Theory and Methodology for Scientific Applications,” with Larry Wasserman.  
2003-2008, “VIGRE in Statistics at Carnegie Mellon,” with Kathryn Roeder and Brian Junker.  
1999-2003, “VIGRE-Vertical & Horizontal Integration of Research and Education in Statistics and Mathematical Science,” with William Eddy, James Greenberg, Brian Junker, John Lehoczky, Kathryn Roeder, Stephen Shreve, and William Williams.

- 1998-2001, “Bayesian Inference and Mixture Models,” with Kathryn Roeder and Larry Wasserman.
- 1998-2000, “Learning and Intelligent Systems: A Next-Generation Intelligent Learning Environment for Statistical Reasoning,” with Marsha Lovett, Joel Greenhouse, Brian Junker, and Michael Meyer.
- 1991-2006 (odd/even years) “Case Studies in Bayesian Statistics,” (originally titled “Workshop on Bayesian Statistics in Science and Technology”), with Constantine Gatsonis; 1991-1992, 1993-1994, 1995-1996 also with James Hodges and Nozer Singpurwalla; 1997-1998, 1999-2000 also with Bradley Carlin, Alicia Carriquiry, Andrew Gelman, Isabella Verdinelli, and Mike West; 2001-2002, 2003-2004 also with Alicia Carriquiry, Andrew Gelman, David Higdon, Donna Pauler, and Isabella Verdinelli; 2005-2006 also with Alicia Carriquiry, Elena Erosheva, Herbie Lee, and Isabella Verdinelli.
- 1996-1999, “A Training Program in Cross-Disciplinary Research and Teaching,” with William Eddy, Stephen Fienberg, Joel Greenhouse, Joseph Kadane, Kathryn Roeder, and Larry Wasserman.
- 1990-1993, 1993-1998, “Bayesian Inference and Computing,” with Joseph Kadane, Luke Tierney, and Larry Wasserman.
- 1990-1992, 1992-1994, “Statistical Multiple Integration,” Principal Investigator: Alan Genz.
- 1985-1987, 1987-1990, “Asymptotic Methods for Bayesian and Likelihood Analysis,” with Joseph Kadane and Luke Tierney.
- 1983-1985, “Likelihood-Based Asymptotic Inference and Design,” Addendum for Research Using a Supercomputer, 1985.
- 1980-1981, National Science Foundation Mathematical Sciences Postdoctoral Research Fellowship.

### **National Institutes of Health**

- 2001-2025 (NIMH) “Analysis of Non-Stationary Neural Data,” with Valérie Ventura; 2001-2004 also with Satish Iyengar; 2005-2009 also with Anthony Brockwell; 2015-2018 also with Geoffrey Gordon; 2018-2025 also with Max G’Sell.
- 2018-2021 (NIMH) “Understanding the Synoptic, Cellular, and Circuit Events of MEG & EEG using a Vertically Translational Cross-Species Approach,” Principal Investigator: Tobias Teichert.
- 2006-2021 (NIDA–NIH Blueprint for Neuroscience Research) “Interdisciplinary Training in Computational Neuroscience,” with Bard Ermentrout (2006-2013) and Brent Doiron (2014-2016) as co-Principal Investigator.
- 2016-2019 (NIH-SPARC), “Anatomical-Functional Mapping of Enteric Neural Circuits,” Principal Investigator: Marthe Howard, University of Toledo.
- 2006-2017 (NIMH) “Statistical Analysis of Neuronal Data,” (workshops, May 2006, 2008, 2010, 2012, 2015, 2017).
- 2013-2014 (NIMH) “Modeling Neural Activity: Statistics, Dynamical Systems, and Networks” (workshop).
- 2009-2011 (NINDS) “Model-based Training for BCI Rehabilitation,” Principal Investigator: Andrew Schwartz.
- 2006-2011 (NINDS) “Cortical Control of a Dextrous Prosthetic Hand,” with Anthony Brockwell and Valérie Ventura; Principal Investigator: Andrew Schwartz.

- 2005-2009 (NIBIB) “Analysis of Multi-Neuronal Data: Cortical Plasticity During Learning” (CRCNS program), with Anthony Brockwell, Valérie Ventura, and Andrew Schwartz.
- 1997-2007 (NIMH) “Risk Factors in Childhood Onset Depression,” Director of Statistical Core (with B. Devlin, 1997-2003); Principal Investigator: Maria Kovacs.
- 1993-2008 (odd/even years; NCI) “Case Studies in Bayesian Statistics,” see NSF funding, above.
- 1991-2003 (NCI) “Bayesian Methods in Biostatistics,” with Joel Greenhouse and Larry Wasserman; 1991-1993 also with Michael Escobar; 1995-1998 also with Brian Junker and Isabella Verdinelli; 1999-2002 also with Kathryn Roeder.
- 1987-1989 (NIMH) “Depression in Newly Diagnosed Juvenile Diabetics,” Principal Investigator: Maria Kovacs.

## Other

- 2015-2017 (Burroughs-Wellcome) “Statistical Analysis of Neuronal Data” (workshop).
- 2013-2016 (DARPA) “In Vivo Neuroimaging Biomarker Panel for Chronic Traumatic Encephalopathy,” Principal Investigator: David Okonkwo.
- 2012-2016 (DARPA) “High Definition Fiber Tracking Biological Diagnosis of TBI Providing Actionable Clinical Report of Quantified Damage,” Principal Investigator: David Okonkwo.
- 1991, 1995, “Workshop on Bayesian Statistics in Science and Technology,” U.S. Army Research Office, U.S. Nuclear Regulatory Commission, with Constantine A. Gatsonis, James S. Hodges, and Nozer D. Singpurwalla.
- 1990, “Biostatistical Science: Applications, Methods, and Practice,” Carnegie Mellon NIH Biomedical Research Support Grant, with Michael Escobar, Joel Greenhouse, and Larry Wasserman.
- 1977-1978, Warner-Lambert Graduate Fellowship.

## Publications

### A. Books

- Kass, R.E., Eden, U.T., and Brown, E.N. (2014) *Analysis of Neural Data*, Springer.
- Kass, R.E. and Vos, P. (1997) *Geometrical Foundations of Asymptotic Inference*, John Wiley & Sons, New York.

### B. Books Edited

- Gatsonis, C., Kass, R.E., Carriquiry, A., Gelman, A., Higdon, D., Pauler, D., and Verdinelli, I. (2002) *Case Studies in Bayesian Statistics, Vol. VI*, Springer-Verlag.
- Gatsonis, C., Kass, R.E., Carlin, B., Carriquiry, A., Gelman, A., Verdinelli, I. and West, M. (2001) *Case Studies in Bayesian Statistics, Vol. V*, Springer-Verlag.
- Gatsonis, C., Kass, R.E., Carlin, B., Carriquiry, A., Gelman, A., Verdinelli, I. and West, M. (1998) *Case Studies in Bayesian Statistics, Vol. IV*, Springer-Verlag.
- Gatsonis, C., Hodges, J.S., Kass, R.E., McCulloch, R., Rossi, P. and Singpurwalla, N.D. (1997) *Case Studies in Bayesian Statistics, Vol. III*, Springer-Verlag.

- Gatsonis, C., Hodges, J.S., Kass, R.E., and Singpurwalla, N.D. (1995) *Case Studies in Bayesian Statistics, Vol. II*, Springer-Verlag.
- Gatsonis, C., Hodges, J.S., Kass, R.E. and Singpurwalla, N.D. (1993) *Case Studies in Bayesian Statistics*, Springer-Verlag.
- Amari, S.-I., Barndorff Nielsen, O.E., Kass, R.E., Lauritzen, S. and Rao, C.R. (1987) *Differential Geometry in Statistical Inference*, Institute of Mathematical Statistics Monograph Series, Hayward, CA.

### C. Articles

- Grisham, W., Abrams, M., Babiec, W.E., Fairhall, A.L., Kass, R.E., Wallisch, P. and Olivo, R. (2021) Teaching Computation in Neuroscience: Notes on the 2019 Society for Neuroscience Professional Development Workshop on Teaching, *The Journal of Undergraduate Neuroscience Education*, (JUNE), Spring 2021, 19(2), A185–A191.
- Bong, H., Liu, Z., Ren, Z., Smith, M.A., Ventura, V. and Kass, R.E. (2021) Latent Dynamic Factor Analysis of High-Dimensional Neural Recordings, *34th Conference on Neural Information Processing Systems (NeurIPS)*, Vancouver, Canada, to appear.
- Klein, N., Orellana, J., Brincat, S., Miller, E.K., and Kass, R.E. (2020) Torus graphs for multivariate phase coupling analysis, *Annals of Applied Statistics*, 14: 635-660.
- Chen, Y., Xin, Q., Ventura, V., and Kass, R.E. (2019) Stability of point process spiking neuron models, *Journal of Computational Neuroscience*, 46:19-32.
- Yang, Y., Tarr, M.J., Kass, R.E., and Aminoff, E.M. (2019) Exploring spatio-temporal neural dynamics of the human visual cortex, *Human Brain Mapping*, online early at 10.1002/hbm.24697.
- Kass, R.E., Amari, S.-I., Arai, K., Brown, E.N., Diekman, C.O., Diesmann, M., Doiron, B., Eden, U.T., Fairhall, A.L., Fiddyment, G.M., Fukai, T., Grn, S., Harrison, M.T., Helias, M., Nakahara, H., Teramae, J.-N., Thomas, P.J., Reimers, M., Rodu, J., Rotstein, H.G., Shear-Brown, E., Shimazaki, H., Shinomoto, S., Yu, B.M., and Kramer, M.A. (2018) Computational neuroscience: Mathematical and statistical perspectives, *Annual Review of Statistics and its Application*, 5: 183-214.
- Liu, B., Vinci, G., Snyder, A.C. and Kass, R.E., Sequential Monte Carlo Method for Bayesian Multiple Testing of Pairwise Interactions among Large Number of Neurons, *Proc. of the 2018 14th International Conference on Natural Computation, Fuzzy Systems and Knowledge Discovery (ICNC-FSKD 2018)*, pp.1189-1195, Huangshan, China, 2018.
- Rodu, J., Klein, N., Brincat, S.L., Miller, E.K., and Kass, R.E. (2018) Detecting multivariate cross-correlation between brain regions, *Journal of Neurophysiology*, 120: 1962-1972.
- Vinci, G., Ventura, V., Smith, M.A., and Kass, R.E. (2018) Adjusted regularization in latent graphical models: Application to multiple-neuron spike count data, *Annals of Applied Statistics*, 12: 1068-1095.
- Vinci, G., Ventura, V., Smith, M.A., and Kass, R.E. (2018) Adjusted regularization of cortical covariance, *Journal of Computational Neuroscience*, DOI: 10.1007/s10827-018-0692-x.
- Zhou, P., Resendez, S.L., Rodriguez-Romaguera, J., Stuber, G.D., Jimenez, J.C., Hen, R., Keirbek, M.A., Neufeld, S.Q., Sabatini, B.L., Kass, R.E., and Paninski, L. (2018) Efficient and accurate extraction of *in vivo* calcium signals from microendoscopic video data, *eLife*, 7:e28728 DOI: 10.7554/elife.28728.
- Arai, K. and Kass, R.E. (2017) Inferring oscillatory modulation in neural spike trains, *PLoS Computational Biology*, 13(10): e1005596. <https://doi.org/10.1371/journal.pcbi.1005596>.

- Koerner, F. S., Anderson, J. R., Fincham, J. M., and Kass, R. E. (2017) Change-point detection of cognitive states across multiple trials in functional neuroimaging, *Statistics in Medicine*, 36: 618-642.
- Orellana, J., Rodu, J., and Kass, R.E. (2017) Population vectors can provide near optimal integration of information, *Neural Computation*, 29: 2021-2029.
- Suway, S.B., Orellana, J. McMorland, A.J.C., Fraser, G.W., Liu, Z., Velliste, M., Chase, S.M., Kass, R.E., and Schwartz, A.B. (2017) Temporally segmented directionality in the motor cortex, *Cerebral Cortex*, 7:1-14. doi: 10.1093/cercor/bhx133.
- Wood, J., Simon, N.W., Koerner, F.S., Kass, R.E., and Moghaddam, B. (2017) Networks of VTA neurons encode real-time information about uncertain numbers of actions executed to earn a reward, *Frontiers in Behavioral Neuroscience*, 11: 140.
- Yang, Y., Xu, Y., Jew, C.A., Pyles, J.A., Kass, R.E., and Tarr, M.J. (2017) Exploring the spatio-temporal neural basis of face learning, *Journal of Vision*, 17(6): 1. doi: 10.1167/17.6.1.
- Zhang, Q., Borst, J.P., Kass, R.E., and Anderson, J.A. (2017) Inter-subject alignment of MEG datasets in a common representational space. *Human Brain Mapping*, 38(9):4287-4301. doi: 10.1002/hbm.23689.
- Eden, U.T. and Kass, R.E. (2016) Statistical models of spike train data, in *Neuroscience in the 21st Century: From basic to clinical*, edited by Donald W. Pfaff and Nora D. Volkow. Springer, pp. 3137-3151.
- Hefny, A., Gordon, G.J. and Kass, R.E. (2016) Fast and improved SLEX analysis of high-dimensional time series, in *Machine Learning and Interpretation in Neuroimaging: Beyond the Scanner*, Lecture Notes in Artificial Intelligence, edited by Guillermo Cecchi, Kai-min K Chang, Georg Langs, Brian Murphy, Irina Rish, Leila Wehbe, Springer, 9444: 94-103.
- Kass, R.E., Caffo, B., Davidian, M., Meng, X.-L., Yu, B., and Reid, N. (2016) Ten simple rules for effective statistical practice, *PLoS Computational Biology*, 12:e1004961.
- Vinci, G., Ventura, V., Smith, M.A., and Kass, R.E. (2016) Separating spike count correlation from firing rate correlation, *Neural Computation*, 28:849-881.
- Yang, Y., Aminoff, E., Tarr, M. and Kass, R.E. (2016) A state-space model of cross-region dynamic connectivity in MEG/EEG, in *Advances in Neural Information Processing Systems* 29, edited by D.D. Lee, M. Sugiyama, U.V. Luxburg, I. Guyon, and R. Garnett, Curran Associates, Inc., 1226-1234.
- Yang, Y., Tarr, M.J, and Kass, R.E. (2016) Estimating learning effects: A short-time Fourier transform regression model for MEG source localization, in *Machine Learning and Interpretation in Neuroimaging: Beyond the Scanner, Lecture Notes in Artificial Intelligence*, edited by Guillermo Cecchi, Kai-min K Chang, Georg Langs, Brian Murphy, Irina Rish, Leila Wehbe, Springer, 9444: 69-82.
- Castellanos, L., Vu, V.Q., Perel, S., Schwartz, A.B., Kass, R.E. (2015) A multivariate gaussian process factor model for hand shape during reach-to-grasp movements, *Statistica Sinica*, 25:5-24.
- Scott, J.G., Kelly, R.C., Smith, M.A., Zhou, P. and Kass, R.E. (2015) False discovery rate regression: an application to neural synchrony detection in primary visual cortex, *Journal of the American Statistical Association*, 110:459-471.
- Wang, W., Tripathy, S.J., Padmanabhan, K., Urban, N.N. and Kass, R.E. (2015) An empirical model for reliable spiking activity, *Neural Computation*, 27:1-15.

- Zhang, Q., Anderson, J.R. and Kass, R.E. (2015) Consistency in brain activation predicts success in transfer. *Proceedings of the 37th Annual Conference of the Cognitive Science Society*, pp. 2787-2792.
- Zhou, P., Burton, S.D, Snyder, A.C., Smith, M.A., Urban, N.N. and Kass, R.E. (2015) Establishing a statistical link between network oscillations and neural synchrony, *PLoS Computational Biology*, DOI:10.1371/journal.pcbi.1004549.
- Harrison, M.T., Amarasingham, A., and Kass, R.E. (2013) Statistical identification of synchronous spiking. In, *Spike Timing: Mechanisms and Function*, edited by Patricia Di Lorenzo and Jonathan Victor. Taylor & Francis, pp. 77-120.
- Koyama, S., Omi, T., Kass, R.E., and Shinomoto, S. (2013) Information transmission using non-Poisson regular firing, *Neural Computation*, 25: 854-876.
- Perez, O., Kass, R.E., and Merchant, H. (2013) Trial time warping to discriminate stimulus-related from movement-related neural activity, *Journal of Neuroscience Methods*, 212: 203-210.
- Xu, Y., D'Lauro, C., Pyles, J.A., Kass, R.E., and Tarr, M.J. (2013) Fine-grained temporal coding of visually-similar categories in the ventral visual pathway and prefrontal cortex, *Frontiers in Psychology*, 4:684.
- Chase, S., Kass, R.E., and Schwartz, A.B. (2012) Behavioral and neural correlates of visuo-motor adaptation observed through a brain-computer interface in primary motor cortex, *Journal of Neurophysiology*, 108: 624-644.
- Kelly, R.C. and Kass, R.E. (2012) A framework for evaluating pairwise and multiway synchrony among stimulus-driven neurons, *Neural Computation*, 24: 2007-2032.
- Zhang, Y., Schwartz, A.B., Chase, S.M., and Kass, R.E. (2012) Bayesian learning in assisted brain-computer interface tasks, *Engineering in Medicine and Biology Society (EMBC), 2012 Annual International Conference of the IEEE*, 2740-2743.
- Kass, R.E. (2011) Statistical inference: the big picture (with discussion), *Statist. Sci.*, 26: 1-9.
- Kass, R.E., Kelly, R.C., and Loh, W.-L. (2011) Assessment of synchrony in multiple neural spike trains using loglinear point process models, *Annals of Applied Statistics*, 5: 1262-1292.
- Xu, Y., Sudre, G.P., Wang, W., Weber, D.J., and Kass, R.E. (2011) Characterizing global statistical significance of spatio-temporal hot spots in MEG/EEG source space via excursion algorithms, *Statistics in Medicine*, 30: 2854-2866.
- Chase, S.M., Schwartz, A.B., and Kass, R.E. (2010) Latent inputs improve estimates of neural encoding in motor cortex, *Journal of Neuroscience*, 30: 13873-13882.
- Cole, M., Bagic, A., Kass, R., and Schneider, W. (2010) Prefrontal dynamics underlying rapid instructed task learning reverse with practice, *Journal of Neuroscience*, 30: 14245-14254.
- Gerkin, R.C., Clem, R.L., Shruti, S., Kass, R.E., and Barth, A.L. (2010) Cortical up state activity is enhanced after seizures: A quantitative analysis, *Journal of Clinical Neurophysiology*, 27: 425-432.
- Kelly, R.C, Smith, M.A., Kass, R.E., and Lee, T.-S. (2010) Accounting for network effects in neuronal responses using L1 penalized point process models, *Advances in Neural Information Processing Systems*, 23, on line.
- Kelly, R.C, Smith, M.A., Kass, R.E., and Lee, T.-S. (2010) Local field potentials indicate network state and account for neuronal response variability, *Journal of Computational Neuroscience*, 29: 567-579.

- Koyama, S., Castellanos Pérez-Bolde, L., Shalizi, C.R., and Kass, R.E. (2010) Approximate methods for state-space models, *Journal of the American Statistical Association*, 105: 170-180.
- Wang, W., Sudre, G., Yang, X., Collinger, J., Kass, R., Degenhart, A., Bagic, A., and Weber, D. (2010) Decoding and cortical source localization for intended movement direction with MEG, *Journal of Neurophysiology*, 104: 2451-2461.
- Behseta, S., Berdyeva, T., Olson, C.R., and Kass, R.E. (2009) Bayesian correction for attenuation of correlation in multi-trial spike count data, *Journal of Neurophysiology*, 101: 2186-2193.
- Brown, E.N. and Kass, R.E. (2009) What is Statistics? (with discussion), *American Statistician*, 63: 105-123.
- Chase, S.M., Schwartz, A.B., and Kass, R.E. (2009) Bias, optimal linear estimation, and the differences between open-loop simulation and closed-loop performance of spiking-based brain computer interface algorithms, *Neural Networks*, 22: 1203-1213.
- Koyama, S., Chase, S.M., Whitford, A.S., Velliste, M., Schwartz, A.B., and Kass, R.E. (2009) Comparison of brain-computer interface decoding algorithms in open-loop and closed-loop control, *Journal Computational Neuroscience*, 29: 73-87.
- Koyama, S., Eden, U., Brown, E.N. and Kass, R.E. (2009) Bayesian decoding of neural spike trains, *Annals of the Institute of Statistical Mathematics*, 62: 37-59.
- Tokdar, S., Xi, P., Kelly, R.C., and Kass, R.E. (2009) Detection of bursts in extracellular spike trains using hidden semi-Markov point process models, *Journal of Computational Neuroscience*, 29: 203-212.
- Vu, V.Q., Yu, B. and Kass, R.E. (2009a) Information in the non-stationary case, *Neural Computation*, 21: 688-703.
- Vu, V.Q., Yu, B. and Kass, R.E. (2009b) Some statistical issues in estimating information in neural spike trains. *ICASSP: IEEE International Conference on Acoustics, Speech, and Signal Processing*.
- Jarosiewicz, B., Chase, S.M., Fraser, G.W., Velliste, M. Kass, R.E., and Schwartz, A.B. (2008) Functional network reorganization during learning in a brain-machine interface paradigm. *Proceedings of the National Academy of Sciences*, 105: 19486-19491.
- Kass, R.E. (2008) Adaptive spline smoothing of neural data. In *Neural Signal Processing: Quantitative Analysis of Neural Activity*, (Mitra, P., ed.) Washington DC: Society for Neuroscience, pp. 35-42.
- Koyama, S. and Kass, R.E. (2008) Spike train probability models for stimulus-driven leaky integrate-and-fire neurons, *Neural Computation*, 20: 1776-1795.
- Paninski, L., Brown, E.N., Iyengar, S., and Kass, R.E. (2008) Statistical models of spike trains. In *Stochastic Methods in Neuroscience*, (Liang, C. and Lord, G.J., eds.) Oxford, Clarendon Press, 278-303.
- Wallstrom, G., Liebner, J., and Kass, R.E. (2008) An implementation of Bayesian Adaptive Regression Splines (BARS) in C with S and R wrappers, *Journal of Statistical Software*, 26: 1-21.
- Behseta, S., Kass, R.E., Moorman, D. and Olson, C. (2007) Testing equality of several functions: Analysis of single-unit firing rate curves across multiple experimental conditions, *Statistics in Medicine*, 26: 3958-3975.
- Brockwell, A.E., Kass, R.E., and Schwartz, A.B. (2007) Statistical signal processing and the motor cortex, *Proceedings of the IEEE*, 95: 881-898.



- Vu, V.Q., Yu, B., and Kass, R.E. (2007) Coverage adjusted entropy estimation *Statistics in Medicine*, 26: 4039-4060.
- Kass, R.E. and Ventura, V. (2006) Spike count correlation increases with length of time interval in the presence of trial-to-trial variation, *Neural Computation*, 18:2583-2591.
- Behseta, S. and Kass, R.E. (2005) Testing equality of two functions using BARS, *Statistics in Medicine*, 24:3523-34.
- Behseta, S., Kass, R.E., and Wallstrom, G. (2005) Hierarchical models for assessing variability among functions, *Biometrika*, 92: 419-434.
- Hsiao, C.K., Lee, M. and Kass, R.E. (2005) Bayesian tests of extra-binomial variability, *Statistics in Medicine*, 15:49-64.
- Kass, R.E., Ventura, V., and Brown, E.N. (2005) Statistical issues in the analysis of neuronal data, *Journal of Neurophysiology*, 94: 8-25.
- Kaufman, C., Ventura, V., and Kass, (2005) Spline-based nonparametric regression for periodic functions and its application to directional tuning of neurons, *Statistics in Medicine*, 24: 2255-2265.
- Ventura, V. Cai, C., and Kass, R.E. (2005) Trial-to-trial variability and its effect on time-varying dependence between two neurons, *Journal of Neurophysiology*, 94: 2928-2939.
- Ventura, V., Cai, C., and Kass, R.E. (2005) Statistical assessment of time-varying dependence between two neurons, *Journal of Neurophysiology*, 94: 2940-2947.
- Brockwell, A.E., Rojas, A. and Kass, R.E. (2004) Recursive Bayesian decoding of motor cortical signals by particle filtering. *Journal of Neurophysiology*, 91: 1899-1907.
- Brown, E.N., Kass, R.E., and Mitra, P.P. (2004) Multiple neural spike train analysis: state-of-the-art and future challenges, *Nature Neuroscience*, 7: 456-461.
- Wallstrom, G.A., Kass, R.E., Miller, A., Cohn, J.F., Fox, N.A. (2004) Automatic correction of ocular artifacts in the EEG: A comparison of regression-based and component-based methods, *International Journal of Psychophysiology*, 53: 105-119.
- Kass, R.E., Ventura, V. and Cai, C. (2003) Statistical smoothing of neuronal data, *NETWORK: Computation in Neural Systems (special issue on Information and Statistical Structure in Spike Trains)*, 14:5-15.
- Behrmann, M., Ghiselli-Crippa, T., Sweeney, J., DiMatteo, I., and Kass, R.E.. (2002) Mechanisms underlying spatial representation revealed through studies of hemispatial neglect, *Journal of Cognitive Neuroscience*, 14: 272-290.
- Brown, E.N., Barbieri, R., Ventura, V., Kass, R.E., and Frank, L.M. (2002) The time-rescaling theorem and its application to neural spike train data analysis. *Neural Computation*, 14: 325-346.
- Evans, J.L., Viele, K., Kass, R.E. and Tang, F. (2002) Grammatical morphology and perception of synthetic and natural speech in children with specific language impairment, *Journal of Speech, Language and Hearing Research*, 45: 494-504.
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**D. Commentary**

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- Greenhouse, J.B. and Kass, R.E. (1989) “A Bayesian perspective.” Invited comment on “Investigating therapies of potentially great benefit: ECMO,” by James H. Ware, *Statistical Science*, 4, 310-317.
- Kass, R.E. (1988) Comment on “Approximating posterior distributions and posterior moments,” by C.N. Morris. In *Bayesian Statistics 3*, edited by J.M. Bernardo, M.H. DeGroot, D.V. Lindley, A.F.M. Smith, Oxford University Press, 342.
- Kass, R.E. (1988) Comment on “Bayesian approaches to clinical trials,” by D.J. Spiegelhalter and L.S. Freedman. In *Bayesian Statistics 3*, edited by J.M. Bernardo, M.H. DeGroot, D.V. Lindley, A.F.M. Smith, Oxford University Press, 476.
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- Buja, A. and Kass, R.E. (1985) “Some observations on ACE methodology.” Invited discussion of 1985 Theory and Methods Invited Paper, “Estimating optimal transformations for multiple regression and correlation” by Leo Breiman and Jerome H. Friedman, *Journal of the American Statistical Association*, 80: 602-607.
- Kass, R.E. (1983). Invited comment on “Bayes methods for combining the results of cancer studies in humans and other species” by William H. DuMouchel and Jeffrey E. Harris, *Journal of the American Statistical Association* 73: 310-311.
- Kass, R.E. (1982) Invited comment on “Lindley’s paradox” by Glenn Shafer, *Journal of the American Statistical Association* 77: 347-349.

## E. Book Reviews

- Kass, R.E. (1997) Review of “Markov Chain Monte Carlo in practice,” by W.R. Gilks, S. Richardson and D.J. Spiegelhalter, *Journal of the American Statistical Association*, 92, 1645-1646.

- Kass, R.E. (1990) Review of “Nonlinear Regression and its Applications” by Douglas M. Bates and Donald G. Watts, and “Nonlinear Regression” by G.A.F. Seber and C.J. Wild, *Journal of the American Statistical Association*, 85: 594-595.
- Kass, R.E. (1985) Review of “Numerical Methods for Unconstrained Optimization and Non-linear Equations” by J. E. Dennis, Jr. and Robert B. Schnabel, *Journal of the American Statistical Association*, 80: 247-248.

## F. Miscellanea

- ’t Hart, B.M., and 143 others (2021), Neuromatch Academy: a 3-week, online summer school in computational neuroscience, *Journal of Open Source Education*, to appear.
- Kass, R.E. and Matheo, L.M. (2019) Correspondence concerning “Brain change in addiction as learning, not disease” by M. Lewis, *New England Journal of Medicine*, 380: 301.
- Kass, RE (2015) Spike Train. In Jaeger D, Jung R (Eds.) *Encyclopedia of Computational Neuroscience*, Springer New York Heidelberg Dordrecht London. DOI 10.1007/978-1-4614-7320-6\_408-1.
- Kass, R.E, Allen, G., Caffo, B., Cunningham, J., Eden, U., Johnson, T.D., Lindquist, M.A., Nichols, T.A., Ombao, H., Paninski, L., Shinohara, R.T., and Yu, B. (2014) *Statistical Research and Training Under the Brain Initiative*, report of a working group of the American Statistical Association, [http://www.amstat.org/policy/pdfs/StatisticsBRAIN\\_April2014.pdf](http://www.amstat.org/policy/pdfs/StatisticsBRAIN_April2014.pdf).
- Kass, R.E. (2010) Guest Editorial: Analysis of neural data, *Journal of Computational Neuroscience*, 29: 1-2.
- Tokdar, S. and Kass, R.E. (2010) Importance sampling, *WIREs Computational Statistics*, online at <http://wires.wiley.com/compstats>.
- Kass, R.E., and Vos, P.W. (2008) Introduction to “Defining the curvature of a statistical problem” in *The Science of Bradley Efron: Selected Papers*, (Morris, C.N. and Tibshirani, R., eds.), Springer, pp. 32–37.
- Brown, E.N. and Kass, R.E. (2007) Special Issue on “Statistical analysis of neuronal data,” (preface), *Statistics in Medicine*, 26: 3827-3829.
- Kass, R.E. and Vos, P. (2003) Letter to the Editor, *Australian and New Zealand Journal of Statistics*, 45:251-252.
- Kass, R.E. (1999) Introduction to “Solving the bible code puzzle,” by Brendan McKay, Dror Bar-Natan, Maya Bar-Hillel and Gil Kalai, *Statistical Science*, 14: 149.
- Kass, R.E. (1998) “Prior distributions,” in *The Encyclopedia of Biostatistics*, P. Armitage, T. Colton, eds, Wiley, New York.
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- Kass, R.E. (1994) “Guidelines on writing for Statistical Science,” *Statistical Science*, 9: 591.
- Kass, R.E. (1992) “Editorial,” *Statistical Science*, 7: 1-2.
- Kass, R.E. (1991) “About *Theory of Probability*” (in commemoration of the birth of Harold Jeffreys), *Chance*, 4: 13.
- Kass, R.E. (1990) Contribution to “Edward H. Kass, M.D., Eulogy,” *Reviews of Infectious Diseases*, 12: 376-377.
- Kass, R.E. (1990) “Fisher’s greatest accomplishment,” *Chance*, 3: 30-31.

### G. Unpublished Manuscripts

- “Inferences about principal components and related quantities using a numerical delta method and posteriors calculated by simulation,” Department of Statistics Technical Report No. 346, Carnegie-Mellon University, 1985.
- “The rate of convergence of the Fisher scoring and Gauss-Newton algorithms,” Technical Report No. 284, Department of Statistics, Carnegie-Mellon University, 1983.
- “Normal values and normal ranges in medicine,” Research report, University of Chicago Department of Statistics, April 1979.
- “Repetitions in measurement data,” Harvard University Department of Statistics Research Memoranda NS-358, NS-359, NS-360, NS-361, September 1977.

### Editorial Activity

- Action Editor, *Journal of Computational Neuroscience*, 2009-2015.
- Action Editor, *Neural Computation*, 2009-2015.
- Guest Editor, Special issue on Analysis of Neural Data, *Journal of Computational Neuroscience*, 29, 2010.
- Co-Editor, with Emery N. Brown, special issue “Statistical Analysis of Neuronal Data,” *Statistics in Medicine*, 26, 2007.
- Founding Editor-in-Chief, *Bayesian Analysis*, 2004-2006.
- Associate Editor, *Biometrika*, 1996 - 2003.
- Executive Editor, *Statistical Science*, 1992-1994.
- Associate Editor, *Journal of the American Statistical Association, Theory and Methods*, 1986-1992.
- Editorial Board member, *Statistics in Medicine*, 1991-1992.
- Associate Editor, *The Annals of Statistics*, 1985.
- Editorial collaborator, special feature on Sir Harold Jeffreys for *Chance*, 1991.
- Statistical Reviewer, *American Journal of Psychiatry*, 1987-1991.
- Refereeing: *American Journal of Physiology*, *Annals of the Institute of Statistical Mathematics*, *Biometrics*, *Biometrika*, *Brazilian Journal of Probability and Statistics*, *Canadian Journal of Statistics*, *Cerebral Cortex*, *Communications in Statistics*, *Computational Statistics and Data Analysis*, *Geographical Analysis*, *IEEE Signal Processing Magazine*, *IEEE Transactions on Reliability*, *IEEE Transactions on Signal Processing*, *International Statistical Review*, *Journal of the American Statistical Association*, *Journal of Computational Neuroscience*, *Journal of Econometrics*, *Journal of Educational Statistics*, *Journal of Multivariate Analysis*, *Journal of Neural Engineering*, *Journal of Neurophysiology*, *Journal of Neuroscience*, *Journal of Neuroscience Methods*, *Journal of the Royal Statistical Society*, *Nature*, *Nature Neuroscience*, *Network*, *Neural Computation*, *Neural Information and Processing Systems*, *Neural Networks*, *Neuron*, *Pakistan Journal of Statistics*, *Philosophy of Science*, *Proceedings of the American Mathematical Society*, *Proceedings of the National Academy of Sciences*, *Psychological Review*, *Public Library of Science Computational Biology*, *Sankhya*, *Science*, *Science Translational Medicine*, *SIAM Journal on Scientific and Statistical Computing*, *Statistica Sinica*, *Statistics*, *Statistics and Probability Letters*, *Statistics in Medicine*, *Technometrics*, *The American Statistician*, *The Annals of Statistics*, *Lifetime Data Analysis*.



**Professional Activity: National/International Organizations**

Sainsbury Wellcome Centre, University College London, Governing Board, 2018-present.  
 IMS, Committee on Fellows, 2019.  
 Burroughs-Wellcome Fund Scientific Interface Advisory Committee, 2015-Present.  
 National Academy of Sciences, Committee on Applied and Theoretical Statistics, 2012-2017.  
 National Institute of Statistical Science, Board Member, 2004-2008.  
 American Association for the Advancement of Science, Chair-Elect, Chair, Past Chair of the Section on Statistics (U), 2003-2006.  
 National Academy of Sciences, Board of Mathematical Sciences and its Applications, 2003-2005.  
 Institute of Mathematical Statistics, Committee to Select Editors, 2009-2012; Council Member, 1999-2002; R.A. Fisher Lectureship Committee, Committee of Presidents of Statistical Societies, 1997-1999 (Chair, 1999); Chair, Publications Committee, 1996-1997; Program Secretary, 1990-1991; Program Committee, 1991; Committee on revision of the “Careers in Statistics” brochure for the Committee of Presidents of Statistics Societies, 1987-1990; Committee on Papers, 1988-1990.  
 American Statistical Association, Chair, working group on the BRAIN Initiative, 2015; Chair-elect, Chair, Past Chair, Section on Bayesian Statistical Science, 1996-1998.  
 International Society for Bayesian Analysis, Board of Directors, 1998-2000; founding Vice President, 1994-1996.

**Professional Activity: External Review Committees**

External Reviewer, Department of Statistics VIGRE program, University of Michigan, 2018.  
 External Advisory Board Member, Computational Drug Abuse Research (CDAR), University of Pittsburgh, Pittsburgh, PA, August 2016, 2017.  
 External Reviewer, Department of Statistics, UC Berkeley, Berkeley, CA, November, 2015.  
 External Reviewer (Chair), Gatsby Computational Neuroscience Unit, London, UK, September, 2015.  
 External Reviewer, Department of Biostatistics, Brown University, 2015.  
 External Reviewer, Department of Statistics, University of California, Santa Barbara, 2006.  
 External Reviewer, Department of Statistics, University of Toronto, 1998-1999.

**Professional Activity: Other**

Participant, Kavli Foundation Meetings, Coordinating Global Brain Projects, Rockefeller University, New York, NY, September, 2016; Future of the Brain Initiative, Johns Hopkins University, Baltimore, MD, August, 2016; Conference for Coordinating Brain Projects, Johns Hopkins University, Baltimore, MD, April 2016.  
 Local organizer and program co-organizer, “Statistical Analysis of Neural Data” international symposia in Pittsburgh, PA, 2002, 2004, 2006, 2008, 2010, 2012, 2015, 2017.  
 Planning committee member, “Training Students to Extract Value from Big Data: A Workshop,” National Academy of Science, Washington DC, 2014.

Program co-organizer, “Modelling Neural Activity: Statistics, Dynamical Systems, and Networks,” Lihue, Hawaii, 2013, Waikoloa Beach, Hawaii, 2016.

Program co-organizer, “Case Studies in Bayesian Statistics and Machine Learning,” Pittsburgh, 2011.

Local organizer and program co-organizer, “Case Studies in Bayesian Statistics,” international symposia at Carnegie Mellon, 1991, 1993, 1995, 1997, 1999, 2001.

Carnegie Mellon representative, Pittsburgh chapter of the American Statistical Association, 1981-1987.

Grant Review Committee, National Cancer Institute, 1993, 1995-1998.

NSF Panel Review Committees, 1994, 1995, 2004, 2011.

L.J. Savage Thesis Award Committee, 1991-1992.

### **Academic Activity at Carnegie Mellon University**

Center for the Neural Basis of Cognition, Interim Co-Director, 2015-2018.

Executive Committee, Center for the Neural Basis of Cognition, 1998-present.

Department of Statistics, Head 1995-2004; Director of Graduate Studies, 1988-1994; Director of Admissions, 1984-1987, 1988-1994.

Machine Learning Department, Graduate Studies Co-Director, 2012-2015.

General Education Coordinating Committee, College of Humanities and Social Sciences, 1992-1993.

Committee on Non-Tenured Reappointments and Promotions, 1988-1990.

Enrollment Committee, Board of Trustees, 1988-1991.

Faculty Senate Delegate, 1984-1987.

Faculty Development Committee Member, 1985-1987.

### **Additional Educational Activity**

Lectured in Neuromatch Academy, a large-scale online summer school in computational neuroscience, July 29, 2020.

Taught short course, Data Science and Data Skills for Neuroscientists, Society for Neuroscience annual meeting, San Diego, CA, November 11, 2016.

Moderator for Society for Neuroscience 2016 webinar on Scientific Rigor, October 21, 2016.

Lectured in Mining and Modeling of Neuroscience Data summer course, Redwood Center for Theoretical Neuroscience, Berkeley, CA, July, 2011, 2012, 2015, 2016, 2017, 2018.

Lectured in Neuroinformatics course at the Marine Biological Laboratory, Woods Hole, MA, August, 2002-2008.

Lectured in short course on Neural Signal Processing, Society for Neuroscience, Washington, DC, November, 2008.

Lectured at Summer Institute on Cognitive Neuroscience, Dartmouth, Hanover, NH, June, 2006.

Taught short course on Statistics in Neuroscience with Valérie Ventura, Canisius College, Buffalo, NY, October, 2005.

- Taught short course on Applied Bayesian Statistics with Larry Wasserman, University of Michigan, Ann Arbor, MI, May 1997.
- Taught short course on Applied Bayesian Statistics with Larry Wasserman, FDA, Washington, DC, September, 1996.
- Taught short course on Applied Bayesian Statistics with Larry Wasserman, ENAR, Biometrics Society, March 1995.
- Taught short course on Applied Bayesian Statistics with Larry Wasserman, Washington Statistical Society, April, 1994.
- Taught short course with J. Stuart Hunter and William F. Eddy for Alcoa management, March 21–22, 1985.
- Taught short course with William F. Eddy for Pittsburgh Plate Glass research workers, March 21–25, 1983.
- Supervised Ph.D. Theses: Qiong Zhou (jointly with John Anderson), 2019; Guiseppe Vinci (jointly with Valérie Ventura) 2017; Ying Yang (jointly with Michael Tarr) 2016; Pencheng Zhou, 2016; William Bishop (jointly with Byron Yu), 2015; Patrick Foley, 2014; Yang Xu, (Machine Learning, jointly with Michael Tarr), 2013; Lucia Castellanos Pérez-Bolde, 2013; Judy Xi, 2011; Jeffrey Liebner, 2009; Liuxia Wang, 2006; Sam Behseta, 2003; Roberto Carta, 2003; Ilaria DiMatteo, 2001; Isabella Verdinelli, 1996; Donna Pauler, 1996; Kate Hsiao, 1994; Elizabeth Slate, 1992; Alaattin Erkanli, 1992; Duane Steffey, 1988.
- External examiner for Ph.D. thesis of Sharon-Lise Normand, Department of Statistics, University of Toronto, Toronto, Ontario, Canada, May, 1990.
- External examiner for Ph.D. thesis of Fassil Nebbebe, Department of Statistics, Queen’s University, Kingston, Ontario, Canada, July, 1984.
- External examiner for Ph.D. thesis of Lavi Shpigelman, “Kernel-based machine learning methods for neural brain-machine interfaces,” Hebrew University, 2009.

## **Invited Talks**

### **A. Named Lectures**

- Marvin Freedman Memorial Lecturer, Department of Mathematics and Statistics, Boston University, 2018.
- R.A. Fisher Lectureship, Joint Statistical Meeting, Baltimore, MD, 2017.
- Bernard G. Greenberg Distinguished Lecturer, Department of Biostatistics, University of North Carolina at Chapel Hill, 2017.
- Swartz Lecturer in Computational Neuroscience, University of Washington, 2017.

### **B. Meetings and Joint Seminars**

- Invited Speaker, Workshops on Leveraging Open Data Sets from the Allen Brain Observatory for Computational Neuroscience, Bernstein Conference, Berlin (virtual), September 2020.
- Invited Speaker, Workshop on Theoretical Frameworks in Neuroscience, San Antonio, TX, February 2019.

- Keynote Speaker, 17th IEEE International Conference on Machine Learning and its Applications, Orlando, FL, December 2018.
- Invited Speaker, CMU-Georgia Tech Conference on Machine Learning in Science and Engineering, Pittsburgh, PA, June, 2018.
- Invited Speaker, Workshop on Integrating Dynamics and Statistics in Neuroscience (CRCNS), Brown University, Providence, RI, June 2017.
- Keynote Speaker, Brain Initiative Investigators Pre-Meeting, Bethesda, MD, December, 2016.
- Invited Speaker, Mathematical Biosciences Institute Workshop 3: Dynamical Systems and Data Analysis in Neuroscience: Bridging the Gap, Ohio State University, Columbus, OH, October 2016.
- Invited Speaker, Computational Drug Abuse Research (CDAR) Annual Meeting, August, 2016.
- Plenary Speaker, Frontiers in Applied and Computational Mathematics, Trenton, NJ, June, 2016.
- Annual invited speaker, Five Colleges Statistics Program, Amherst and Northampton, MA, April, 2016.
- Inaugural Joint Seminar Speaker, Departments of Statistics and Biostatistics, Harvard University, Cambridge, MA, November, 2015
- Panelist, NIMH Workshop on Non-Invasive Brain Imaging, satellite workshop to the Society for Neuroscience annual meeting, Chicago, IL, October, 2015
- Invited Speaker, MathStatNeuro Workshop, Nice, France, September, 2015
- Invited Speaker, Quinquennial Review Symposium, Gatsby Computational Neuroscience Unit, London, UK, September, 2015
- Invited Speaker, Joint Statistical Meetings, Seattle, WA, August, 2015
- Invited Speaker, SAMSI Program on Challenges in Computational Neuroscience, Opening Workshop, Research Triangle Park, NC, August, 2015
- Invited Speaker, 21st Century Statistics at MIT: Inaugural Symposium, Cambridge, MA, May, 2015
- Invited Speaker, Conte Center on Brain Programming in Adolescent Vulnerabilities, UC Irvine, Irvine, CA, March, 2015
- Invited Speaker, NIPS Workshop, Montreal, Quebec, Canada, December 2014.
- Invited Speaker, Juelich Institute of Neuroscience and Medicine, Computational and Systems Neuroscience and Theoretical Neuroscience, Juelich, Germany, September 2014.
- Invited Speaker, Joint Statistical Meetings, Boston, MA, August 2014
- Invited Speaker, ICIAM, Columbus, OH, May 2014
- Invited Speaker, COSYNE, Salt Lake City, UT, March 2014
- Invited Speaker, Quantifying Structure in Large Neural Datasets, Grossman Center for Statistics of Mind, Columbia University, New York, NY, October, 2013.
- Invited Speaker, Neuroinformatics 2013, Karolinska Institute, Stockholm, Sweden, August 2013.
- Invited Speaker, Statistical and Applied Mathematical Sciences Institute, SAMSI Summer Program, Neuroimaging Data Analysis, Research Triangle Park, NC, June 2013.
- Invited Speaker, Workshop on Disease, Mathematical Biosciences Institute, Columbus, OH, February, 2013.
- Invited Speaker, Carl Morris Honorary Symposium on Large-Scale Inference, Silver Spring, MD, October, 2012.
- Invited Speaker, Cognitive Rhythms Collaborative, Boston University, Boston, MA, September, 2012.

Keynote Lecturer, Bayesian Inference and Stochastic Computation, ISBA workshop, Institute of Statistical Mathematics, Tokyo, Japan, June 2012.

Invited Speaker, RIKEN Brain Science Institute, Tokyo, Japan, June 2012

Plenary Speaker, New England Statistics Symposium 2012, Boston University, Boston, MA, April, 2012.

Invited Speaker, ISI-Bernoulli Satellite Meeting on Dynamical Systems Modeling, Copenhagen, August, 2011.

Keynote Lecture, Statistics 2011 Canada, 5th Decennial Canadian Conference on Applied Statistics, Montreal, Quebec, Canada, July 2011.

Invited Lecture, Hierarchical Models and MCMC, Conference in Honour of Adrian F.M. Smith, Crete, June, 2011.

Seminar on Bayesian Inference in Econometrics and Statistics, University of Texas at Austin, April, 2010.

Presidential Invited Lecturer, Biometric Society (ENAR), New Orleans, LA, March, 2010.

Objective Bayes '09, Special Session on Jeffreys, University of Pennsylvania, Philadelphia, PA, June, 2009.

Workshop on Future Directions in High-Dimensional Data Analysis, Warwick, UK, April, 2008.

Joint Statistical Meetings, Denver, CO, August, 2008.

Neural Coding and Computational Dynamics, Hosegar, France, September, 2007.

Joint Statistical Meetings, Salt Lake City, Utah, July, 2007.

Georgia State University, Brains and Behavior Distinguished Scholar Lecture Series, Atlanta, GA, November, 2006.

Symposium in Honor of Stephen Stigler and Michael Wichura, Chicago, IL, November, 2006.

Dynamical Neuroscience satellite meeting at Society for Neuroscience annual meeting, Atlanta, GA, October, 2006.

NIH-NSF Computational Neuroscience (CRCNS) program meeting, Washington, DC, June, 2006.

Meeting on Multineuron Data Analysis as a Frontier of Statistics, Tokyo, Japan, February, 2006.

Winter Conference on Brain Research, Steamboat Springs, CO, January, 2006.

Seminar on Bayesian Statistics and Econometrics (SBIES), St. Louis, MO, August, 2005.

Summer 2004 Southwest Regional Council on Statistics (SRCOS) Meeting, Blacksburg, VA, June, 2004.

Banff International Research Station (BIRS), Workshop on Point Processes – Theory and Applications, Banff, Alberta, Canada, June, 2003.

Mathematical Biosciences Institute (MBI) Workshop on Neural Coding, Invited Speaker, The Ohio State University, Columbus, OH, February, 2003.

Fifth Annual Winter Workshop, IMS Mini-Meeting on Functional Data Analysis, Invited Speaker, Department of Statistics, University of Florida, Gainesville, FL, January 2003.

American Statistical Association, Atlanta, GA, August, 2001 (presentation by Garrick Wallstrom).

Southern Ontario Graduate Student Seminar Day, Special Invited Speaker, Department of Statistics University of Toronto, Ontario, Canada, September, 2000.

Biometric Society, (ENAR), Pittsburgh, PA, March, 1998.

U.S. Army Conference on Applied Statistics, Monterey, CA, October 1996.

Workshop in Honor of David Wallace, Chicago, IL, October, 1996.

- NBER-NSF Seminar on Bayesian Inference in Econometrics, Chicago, IL, May, 1996.
- Fifth Valencia International Meeting on Bayesian Statistics, Alicante, Spain, June, 1994 (Discussant).
- American Statistical Association, San Francisco, CA, August, 1993.
- Institute of Statisticians Conference on Practical Bayesian Statistics, Nottingham, England, July, 1992.
- Workshop on Methodological Issues in Cognitive Science, Santa Fe, NM, June, 1992.
- Institute of Mathematical Statistics – Special Invited Lecture, Cincinnati, OH, March, 1992.
- Third Pacific Area Statistical Conference, Tokyo, Japan, December, 1991.
- Institute of Statistical Mathematics, Tokyo, Japan, December, 1991.
- NBER-NSF Seminar on Bayesian Statistics in Econometrics, Boston, MA, November 1991.
- Group on Statistics of the Belgian National Science Foundation, Annual Meeting, Kortrijk, Belgium, April, 1991.
- Fourth Valencia International Meeting of Bayesian Statistics, Peniscola, Spain, April, 1991.
- The 22nd Symposium on the Interface between Computing Science and Statistics, East Lansing, MI, May, 1990.
- Conference on Statistical Computing, Institute for Mathematics and its Applications, Minneapolis, MN, August, 1989.
- Biometric Society (ENAR), Washington, DC, August, 1989.
- Institute of Mathematical Statistics, Annual Meeting, August, 1989 (Discussant).
- Joint Research Conference on Statistical Multiple Integration, American Mathematical Society, Institute of Mathematical Statistics, and Society for Industrial and Applied Mathematics, Arcata, CA, June, 1989.
- NBER-NSF Seminar on Bayesian Statistics in Econometrics, Columbia, MO, April, 1989.
- Biometric Society (ENAR), Lexington, KY, March, 1989.
- Workshop on Bayesian Robustness, Purdue University, West Lafayette, IN, March, 1989 (Discussant).
- NBER-NSF Seminar on Bayesian Statistics in Econometrics, Gainesville, FL, October, 1987.
- Workshop on Statistical Theory in Practice, Toronto, Ontario, Canada, October, 1987.
- American Statistical Association, Section on Computing, San Francisco, CA, August, 1987.
- Third Valencia International Meeting on Bayesian Statistics, Altea, Spain, June, 1987.
- Western Ontario Joint Seminar (Guelph, London, Waterloo, Western Ontario), London, Ontario, February, 1987.
- NBER-NSF Seminar on Bayesian Inference in Econometrics, Riverside, CA, October, 1986.
- Institute of Mathematical Statistics (Central Regional Meeting), West Lafayette, IN, June, 1986.
- NBER-NSF Seminar on Bayesian Inference in Econometrics, Columbus, OH, May, 1986.
- ONR-NSF Workshop on Bayesian Computing, Columbus, OH, May, 1986 (Presentation by Luke Tierney).
- NBER-NSF Seminar on Bayesian Inference in Econometrics, Minneapolis, MN, May, 1985.
- Conference on “Generalized Linear Models: Methodology and Computation,” University of Texas-Austin, June, 1984.
- Valley Geometry Colloquium, University of Massachusetts-Amherst, May, 1984 (two talks).
- NATO Workshop on “Differential Geometry in Statistics” at Imperial College, London, April, 1984.
- Institute of Mathematical Statistics (Western Regional Meeting), June, 1983.
- NBER-NSF Seminar on Bayesian Inference in Econometrics, Chicago, IL, October, 1980.

### C. Department Seminars

Department of Biostatistics, University of Washington, Seattle, WA, April 2017.  
Department of Statistics, University of Connecticut, Storrs, CT, September, 2016.  
Department of Statistics, University of Michigan, Ann Arbor, MI, May, 2015  
Department of Statistics, George Washington University, Washington DC, April, 2015  
Carnegie Mellon University, Computational Biology, Pittsburgh, PA, December 2014  
Brown University, Department of Biostatistics, Providence, RI, October 2014  
University of California, Irvine, Department of Statistics, Donald Bren School of Information and Computer Sciences, Irvine, CA, April, 2013.  
Temple University, Department of Statistics, Philadelphia, PA, October, 2012.  
Kyoto University, Department of Physics, Kyoto, Japan, June 2012.  
National Security Agency, Mathematics Colloquium, May, 2011.  
University of Maryland, Department of Mathematics, May, 2011.  
Distinguished Lecturer, University of Texas at Austin, Division of Statistics and Scientific Computing, October, 2010.  
University of California, Irvine, Department of Statistics, Donald Bren School of Information and Computer Sciences, Irvine, CA, March, 2010.  
Google, Mountain View, CA, March, 2010.  
Florida State University, Department of Statistics, Tallahassee, FL, March, 2009.  
Brown University, Center for Statistical Sciences, Providence, RI, November, 2008.  
Duke University, Department of Statistical Science, Durham, NC, March, 2008.  
Yale University, Department of Statistics, New Haven, CT, November, 2007.  
University of Illinois, Department of Statistics, Champaign, IL, December, 2006.  
Columbia University, Department of Statistics, New York, NY, March, 2006.  
Columbia University, Department of Theoretical Neuroscience, New York, NY, March, 2006.  
McGill University, Department of Mathematics and Statistics, Montreal, Canada, September, 2005.  
University of California, Berkeley, Department of Statistics, Berkeley, CA, March, 2005.  
Stanford University, Department of Statistics, Palo Alto, CA, March, 2005.  
University of Minnesota, Department of Biostatistics, Minneapolis, MN, September, 2004.  
Pennsylvania State University, Department of Statistics, State College, PA, April 2004.  
University of California at San Diego and San Diego State University, Joint with Statistics and Biostatistics Groups, San Diego, CA, March 2004.  
Brown University, Joint with the Department of Applied Mathematics and the Center for Statistical Science, Providence, RI, May, 2003.  
The University of Pennsylvania, Wharton School, Statistics Group, Philadelphia, PA, April, 2003.  
The University of Texas M.D. Anderson Cancer Center, Department of Biostatistics, Houston, TX, January, 2003.  
University of California Irvine, Department of Statistics, Irvine, CA, December 2002.  
Columbia University, Department of Biostatistics, New York, NY, October 2002.  
University of Virginia, Department of Statistics, Charlottesville, VA, April 2001.  
University of Florida, Department of Biostatistics, Gainesville, FL, March 2001.  
University of California, Department of Biostatistics, Los Angeles, CA, March, 2000.  
University of Washington, Department of Statistics, Seattle, WA, February, 2000.

Harvard University, Department of Biostatistics, Boston, MA, January 2000.  
Ohio State University, Department of Statistics, Columbus, OH, October, 1999.  
Harvard University, Department of Biostatistics, Boston, MA, May, 1999.  
Washington University, John M. Olin School of Business, St. Louis, MO, March, 1999.  
Purdue University, Department of Statistics, West Lafayette, IN, April, 1998.  
Purdue University, Department of Statistics, Special seminar for graduate students, West Lafayette, IN, April, 1998.  
University of California, Department of Statistics and Applied Probability, Santa Barbara, CA, March, 1998.  
The Rand Corporation, Santa Monica, CA, March, 1998.  
University of Toronto, Department of Statistics, Toronto, Ontario, December, 1996.  
Brown University, Center for Statistical Science, Providence, RI, May, 1996.  
University of Michigan, Department of Biostatistics, Ann Arbor, MI, April, 1996.  
University of Pittsburgh, Department of Biostatistics, Pittsburgh, PA, October, 1995.  
Cornell University, Statistics Group, Ithaca, NY, March, 1995.  
University of Chicago, School of Business, Chicago, IL, March, 1994.  
Harvard University, Department of Biostatistics, Boston, MA, May, 1993.  
University of Toronto, Department of Statistics, Toronto, Ontario, November, 1992.  
The Rand Corporation, Santa Monica, CA, March, 1992.  
University of California, Department of Biostatistics, Los Angeles, CA, February, 1992.  
Washington State University, Department of Mathematics and Statistics, Pullman, WA, February, 1992.  
University of Washington, Department of Statistics, Seattle, WA, February, 1992.  
University of British Columbia, Department of Statistics, Vancouver, BC, February, 1992.  
Stanford University, Department of Statistics, Palo Alto, CA, October 1991.  
University of Chicago, Department of Statistics, Chicago, IL, November, 1990.  
Ohio State University, Department of Statistics, Columbus, OH, October, 1990.  
University of Rome, Department of Statistics, Rome, Italy, June, 1990 (two talks).  
Washington State University, Departments of Computer Science, Mathematics, and Statistics (joint colloquium), Pullman, WA, March, 1990.  
Cornell University, Statistics Group, January, 1990.  
University of Michigan, Department of Biostatistics, October, 1989.  
University of Michigan, Department of Statistics, October, 1989.  
Michigan State University, Department of Probability and Statistics, October, 1989.  
University of Washington, Seattle, Department of Statistics, June, 1989.  
The Rand Corporation, Santa Monica, CA, June, 1989.  
University of Connecticut, Department of Statistics, April, 1988.  
University of Massachusetts-Amherst, Department of Mathematics, March, 1988.  
Yale University, Department of Statistics, November, 1987.  
The Rand Corporation, Santa Monica, CA, May, 1987.  
University of Toronto, Department of Statistics, April, 1987.  
New York University, Department of Statistics and Operations Research, December, 1986.  
Purdue University, Department of Statistics, December, 1986.  
Rutgers University, Department of Statistics, November, 1985.  
University of Kansas-Lawrence, Department of Mathematics, November, 1985.  
Johns Hopkins University, Department of Biostatistics, December, 1985.



University of Washington, Seattle, Department of Statistics, February, 1985.  
SUNY - Albany, Department of Mathematics, February, 1984.  
University of Massachusetts-Amherst, Department of Mathematics, February, 1984.  
University of Wisconsin-Madison, Department of Statistics, October, 1983.  
University of Manitoba Department of Statistics, October, 1983.  
Oregon State University, Department of Statistics, July, 1983 (two talks).  
University of Texas-Austin, Department of Mathematics, April, 1983.  
Ohio State University, Department of Statistics, April, 1983.  
Universite de Sherbrooke Department de Mathematiques, December, 1982.  
Bethany College Department of Mathematics, November, 1982.  
University of Illinois-Champaign, Department of Mathematics, October, 1982.  
University of Pittsburgh, Department of Statistics, September, 1982.  
Pennsylvania State University, Department of Statistics, April, 1982.  
University of North Carolina-Chapel Hill, Department of Statistics, February, 1982.  
Educational Testing Service, Program Statistics Research, March, 1981.  
Rutgers University, Department of Statistics, November, 1980.  
Yale University, Department of Statistics, November, 1980.