

Robert L Wolpert

Curriculum Vitæ
2011 December

1. Personal Information:

Name:	Robert Lee Wolpert	Addr:	Duke Univ Dept Statistical Science 211c Old Chem, Box 90251 Durham, NC 27708-0251 USA
Born:	San Gabriel, California USA 1950 July 22	Tel:	+1-919-684-3275
Citizen:	USA	Fax:	+1-919-684-8594
		Net:	wolpert@stat.duke.edu
		Web:	www.stat.duke.edu/~rlw/

2. Education:

Ph.D.	Princeton University, 1976 Department of Mathematics NSF Fellow, Princeton Fellow	A.B.	Cornell University, 1972 Department of Mathematics Cornell College Scholar
Advs:	Edward Nelson, Gilbert Hunt	Advs:	Frank Spitzer, Jack Kiefer
Diss:	Wiener Path Intersections and Local Times		

3. Academic Appointments:

Present:

2000-	Professor,	Duke Univ. Department of Statistical Science
2000-14	Professor,	Duke Univ. Nicholas School of the Environment
2000-	Visiting Professor,	Imperial College, London Dept. of Epi. & Pub. Health
2006-14	Adjunct Professor,	Queensland University of Technology, Fac. of Math. Sci.

Previous and Visiting:

2007	Visiting Scholar,	Nat'l Center for Atmospheric Research (NCAR)
2007	Visiting Professor,	Queensland University of Technolgy, Brisbane, Australia
1992-00	Associate Professor,	Duke Univ. Nicholas School of the Environment
1992-00	Associate Professor with Tenure,	Duke Univ. Institute of Statistics and Decision Sciences
1999	Visiting Scholar,	Dept. Epi. & Public Health, Imperial College, London, UK
1999	Visiting Scholar,	Queensland University of Technolgy, Brisbane, Australia
1993	NISS Senior Fellow,	National Institute of Statistical Sciences
1992-95	Director of Graduate Studies,	Duke Institute of Statistics and Decision Sciences
1987-92	Associate Professor,	Duke Institute of Statistics and Decision Sciences
1986-88	Research Associate Professor,	Duke Center for Health Policy Research and Education
1984-90	Assistant Medical Research Professor,	Duke Department of Pharmacology <i>and</i>
	Associate Director,	Laboratory of Environ. Pharmacology and Toxicology
1982-84	Research Associate,	Laboratory of Environ. Pharmacology and Toxicology
1982-83	Visiting Professor,	UNC Department of Statistics (Chapel Hill) <i>and</i>
	Fellow,	Center for Stochastic Processes
1976-84	Assistant Professor,	Duke Department of Mathematics

4. Awards, Honors, Prizes:

IMS Medallion Lecturer,	Institute of Mathematical Statistics (2002)
Elected Fellow,	American Statistical Association (1999)
Elected Fellow,	Institute of Mathematical Statistics (1993)
University Fellow,	Princeton University
College Scholar,	Cornell University

5. Publications:*Books and Monographs:*

1. JO Berger and RL Wolpert, 1984. *The Likelihood Principle: Review, Generalizations, and Statistical Implications*. (with Discussion). Institute of Mathematical Statistics Press, Hayward, CA.
2. JO Berger and RL Wolpert, 1988. *The Likelihood Principle: Review, Generalizations, and Statistical Implications (2nd edn.)* (with Discussion). Institute of Mathematical Statistics Press, Hayward, CA (<http://projecteuclid.org/euclid.lnms/1215466210>).

Peer-Reviewed Journal Articles, Book Chapters and Proceedings:

3. RL Wolpert, 1978. Wiener path intersections and local time. *J. Functional Analysis* **30**, 329–340.
4. RL Wolpert, 1978. Local time and Euclidean field theory. *J. Functional Analysis* **30**, 341–357.
5. RL Wolpert and JO Berger, 1982. Incorporating prior information in minimax estimation of the mean of a Gaussian process. In *Statistical Decision Theory and Related Topics III, vol. 2* (JO Berger and SS Gupta, eds.), Academic Press, New York, NY, 451–464.
6. JO Berger and RL Wolpert, 1983. Estimating the mean function of a Gaussian process and the Stein effect. *J. Multivariate Analysis* **13**, 401–424.
7. M Taqqu and RL Wolpert, 1983. Infinite variance self-similar processes subordinated to a Poisson measure. *Z. Wahrscheinlichkeitstheorie verw. Gebiete* **62**, 53–72.
8. G Kallianpur and RL Wolpert, 1984. Infinite dimensional stochastic differential equation models for spatially distributed neurons. *Applied Mathematics and Optimization* **12**, 125–172.
9. DB Menzel and RL Wolpert, 1986. Chemical carcinogenesis and toxicity models: Matching complexity to objectives. *Bulletin of Mathematical Biology* **48**, 293–307.
10. G Kallianpur and RL Wolpert, 1986. Weak convergence of stochastic neuronal models. In *Stochastic Methods in Biology* (M Kimura, G Kallianpur, and T Hida, eds.), Springer-Verlag, Berlin.
11. DB Menzel, RL Wolpert, CR Shoaf, DL Deal, 1986. Predicting human lung burdens of soluble nickel salts. In *Aerosols: Research, Risk Assessment and Control Strategies* (SD Lee, T Schneider, LD Grant and PJ Verkerk, eds.), Lewis Publishers, Chelsea, MI, 637–648.
12. DM Eddy, RL Wolpert, ML Rosenberg, 1987. Estimating the effectiveness of interventions to prevent youth suicides. *Medical Care* **25**, S57–S65.
13. DB Menzel, DA Deal, MI Tayyeb, RL Wolpert, JR Boger, CR Shoaf, J Sandy, K Wilkinson, RJ Francovitch, 1987. Pharmacokinetic modeling of the lung burden from repeated inhalation of nickel aerosols. *Toxicology Letters* **38**, 33–43.
14. RJ Francovitch, DL Deal, MI Tayyeb, RL Wolpert, JR Boger, JE Valentini, DB Menzel, 1987. A Head-only Exposure system for controlled exposure of small rodents. *Toxicology Letters* **38**, 19–32.
15. RL Wolpert, 1987. Choosing a measure of treatment effect. In *Statistical Issues in Combining Environmental Studies* (K Lantz, ed.), US GPO document EPA-230-12-87-032, Washington, DC, 19–25.

16. R Shachter, DM Eddy, V Hasselblad, RL Wolpert, 1987. A heuristic Bayesian approach to knowledge acquisition: Application to analysis of Tissue-type Plasminogen Activator. In *Uncertainty in Artificial Intelligence 3* (LN Kanal, TS Levitt, JF Lemmer, eds.), Elsevier, New York, NY.
17. R Shachter, DM Eddy, V Hasselblad, RL Wolpert, 1987. A heuristic Bayesian approach to knowledge acquisition: Application to analysis of Tissue-type Plasminogen Activator. *International Journal of Approximate Reasoning* **2(3)**, 342.
18. DB Menzel, ED Smolko, RL Wolpert, DA Keller, KH Leung, 1987. Extrapolation modeling in toxicology: The integration of experimental studies, data retrieval systems and mathematical models for risk assessment of ozone and sulfur dioxide. In *Seminar in Environmental Toxicology* (JL Way, ed.), Coordinating Council for North American Affairs and American Institute in Taiwan, Taipei, TW, 60–81.
19. DB Menzel, RL Wolpert, JR Boger, JM Kootsey, 1987. Resources available for simulating in toxicology: Specialized computers, generalized software and communication networks. In *Drinking Water and Health, Volume 8: Pharmacokinetics in Risk Assessment* (JR Gilette and D Jollow, eds.), National Academy Press, Washington, DC, 229–250.
20. RL Wolpert, 1988. Invited discussion of *Conditionally acceptable frequentist solutions*, by G Casella. In *Statistical Decision Theory and Related Topics IV, vol. 1* (JO Berger and SS Gupta, eds.), Springer-Verlag, New York, NY, 104–110.
21. DB Menzel and RL Wolpert, 1988. Is there a threshold for human health risk from ozone? In *Aerosols: Research, Risk Assessment and Control Strategies* (LD Grant, ed.). Elsevier, Amsterdam.
22. DB Menzel, RL Wolpert, RJ Francovitch, CR Shoaf, JR Boger, MI Tayyeb, 1989. Respiratory tract burdens of cobalt from inhalation of soluble aerosols: Simulation by a two-compartment model. *Inhalation Toxicology* **1**, 49–69.
23. CR Shoaf, RL Wolpert and DB Menzel, 1989. Factors controlling nitrosamine formation in the lung: A unique uptake system. *Inhalation Toxicology* **1**, 167–178.
24. CR Shoaf, RL Wolpert, DB Menzel, 1989. Nitrogen dioxide-initiated peroxidation of liposomal membrane systems. *Inhalation Toxicology* **1**, 301–314.
25. CR Shoaf, RL Wolpert, DB Menzel, 1989. Antioxidant effects of α -tocopherol and ascorbate in liposomes exposed to nitrogen dioxide. *Inhalation Toxicology* **1**, 315–329.
26. RL Wolpert, 1989. Eliciting and combining expert judgments about uncertainty. *International Journal of Technology Assessment in Health Care* **5**, 537–557.
27. G Kallianpur, I Mitoma and RL Wolpert, 1990. Diffusion equations in duals of nuclear spaces. *Stochastics* **29**, 285–329.
28. RL Wolpert, 1991. Monte Carlo integration in Bayesian statistical analysis. *Contemporary Mathematics* **115**, 101–116.
29. M Lavine, L Wasserman and RL Wolpert, 1991. Bayesian inference with specified prior marginals. *J. American Statistical Assoc.* **86**, 964–971.
30. RL Wolpert and WJ Warren-Hicks, 1992. Bayesian hierarchical logistic models for combining field and laboratory survival data (with discussion). In *Bayesian Statistics 4* (JM Bernardo, JO Berger, AP Dawid and AFM Smith, eds.), Oxford University Press, Oxford, 525–546.
31. RL Wolpert, LJ Steinberg and KH Reckhow, 1993. Bayesian decision support using environmental transport-and-fate models (with discussion). In *Case Studies in Bayesian Analysis* (C Gatsonis, JS Hodges, RE Kass and ND Singpurwalla, eds.), Springer-Verlag, New York, NY, 241–297.
32. RL Wolpert and WJ Warren-Hicks, 1993. Predictive models of fish response to acidification: Using Bayesian

- inference to combine laboratory and field measurements. In *Environmental Statistics, Assessment and Forecasting* (CR Cothorn and NP Ross, eds.), Lewis, Boca Raton, FL, 99–112.
33. M Lavine, L Wasserman and RL Wolpert, 1993. Linearization of Bayesian robustness problems. *J. Statistical Planning and Inference* **37**, 307–316.
 34. RL Wolpert, 1994. Discussion of “Bayesian robustness in bidimensional models: Prior independence” by J Berger and E Moreno. *J. Statistical Planning and Inference* **40**, 172–174.
 35. JO Berger, LD Brown and RL Wolpert, 1994. A unified conditional frequentist and Bayesian test for fixed and sequential simple hypothesis testing. *Annals of Statistics* **22**, 1787–1807.
 36. RL Wolpert, 1995. Invited discussion of *Inference from a Deterministic Population Dynamics Model for Bowhead Whales*, by A Raftery, G Givens and J Zeh. *J. American Statistical Assoc.* **90(430)**, 426–427.
 37. M Lavine and RL Wolpert, 1995. Invited discussion of *Fractional Bayes Factors*, by A O’Hagan. *J. Royal Statistical Soc. ser. B* **57(1)**, 132–133.
 38. RL Wolpert, 1996. Testing simple hypotheses. In *Studies in Classification, Data Analysis and Knowledge Organization*, vol. 7 (HH Bock and W Polasek, eds.), Springer-Verlag, Heidelberg, 289–297.
 39. RL Wolpert and M Lavine, 1996. Markov random field priors for univariate density estimation. In *Bayesian Robustness* (JO Berger, B Betro, E Moreno, LR Pericchi, F Ruggeri and G Salinetti, eds.), IMS Press, Hayward, CA, 253–270.
 40. LJ Steinberg, KH Reckhow, RL Wolpert, 1996. Bayesian model for fate and transport of polychlorinated Biphenyl in Upper Hudson River. *J. Environmental Engineering* **122(5)**, 341–349.
 41. RL Wolpert, 1996. Invited discussion of *Likelihood and Bayesian Approximation Methods*, by N Reid. In *Bayesian Statistics 5* (JM Bernardo, JO Berger, AP Dawid and AFM Smith, eds.), Oxford University Press, Oxford, 363–364.
 42. K Ickstadt and RL Wolpert, 1997. Multiresolution assessment of forest inhomogeneity. In *Case Studies in Bayesian Statistics, Volume III* (C Gatsonis, J Hodges, RE Kass, R McCulloch, P Rossi and ND Singpurwalla, eds.), Springer-Verlag, 371–386.
 43. F Dominici, G Parmigiani, K Reckhow and RL Wolpert, 1997. Combining information from related regressions. *J. Agric., Biol. Envir. S.* **2(3)**, 313–332.
 44. LJ Steinberg, KH Reckhow, RL Wolpert, 1997. Characterization of parameters in mechanistic models: A case study of a PCB fate and transport model. *Ecol. Modeling* **97:1-2**, 35–46.
 45. RL Wolpert and K Ickstadt, 1998. Simulation of Lévy Random Fields. In *Practical Nonparametric and Semiparametric Bayesian Statistics* (D Dey, P Müller and D Sinha, eds.), Springer-Verlag, 227–242.
 46. K Ickstadt, RL Wolpert and X Lu, 1998. Modeling travel demand in Portland, Oregon. In *Practical Nonparametric and Semiparametric Bayesian Statistics* (D Dey, P Müller and D Sinha, eds.), Springer-Verlag, 305–322.
 47. RL Wolpert and K Ickstadt, 1998. Poisson/gamma random field models for spatial statistics. *Biometrika* **85:2**, 251–267.
 48. NG Best, K Ickstadt and RL Wolpert, 1999. Invited discussion of *Bayesian Analysis of Agricultural Field Experiments*, by J Besag and D Higdon. *J. Royal Statistical Soc. ser B* **61(4)**, 728–729.
 49. K Ickstadt and RL Wolpert, 1999. Spatial Regression for Marked Point Processes. In *Bayesian Statistics 6* (JM Bernardo, JO Berger, AP Dawid and AFM Smith, eds.), Oxford University Press, Oxford, 323–341.
 50. RL Wolpert, 1999. Invited discussion of *Functional Magnetic Resonance Imaging and Spatio-temporal Inference*, by C Genovese. In *Bayesian Statistics 6* (JM Bernardo, JO Berger, AP Dawid and

- AFM Smith, *eds.*), Oxford University Press, Oxford, 272.
51. F Dominici, G Parmigiani, RL Wolpert and V Hasselblad, 1999. Meta-Analysis of Migraine Headache Treatments: Combining Information from Heterogeneous Designs. *J. American Statistical Assoc* **94(445)**, 16-28.
 52. JO Berger, B Liseo and RL Wolpert, 1999. Integrated likelihood methods for eliminating nuisance parameters. *Statistical Science* **14(1)**, 1-28.
 53. RL Wolpert, 2000. Invited Comment on *On the Probability of Observing Misleading Statistical Evidence*, by R Royall. *J. American Statistical Assoc.* **95(451)**, 771-772.
 54. NG Best, K Ickstadt, RL Wolpert and D Briggs, 2000. Combining models of health and exposure data: the SAVIAH study. In *Spatial Epidemiology: Methods and Applications* (P Elliott, J Wakefield, N Best and D Briggs, *eds.*), Oxford University Press, Oxford, Chapter 22, 393–414.
 55. NG Best, K Ickstadt and RL Wolpert, 2000. Spatial Poisson Regression for Health and Exposure Data Measured at Disparate Resolutions. *J. American Statistical Assoc.* **95(452)**, 1076-1088.
 56. NG Best, K Ickstadt, RL Wolpert, S Cockings, P Elliott, J Bennett, A Bottle and S Reed, 2002. Modeling the impact of traffic-related air pollution on childhood respiratory illness (with discussion). In *Case Studies in Bayesian Statistics, Volume V* (C Gatsonis, RE Kass, B Carlin, A Carriquiry, A Gelman, I Verdinelli, M West, *eds.*), Springer-Verlag, 183–259.
 57. RL Wolpert, 2002. The Gamma function. In *Encyclopedia of Environmetrics, vol. 2* (AH El-Shaarawi and WW Piegorsch, *eds.*), J Wiley & Sons, 837–839.
 58. RL Wolpert, 2002. Lévy processes. In *Encyclopedia of Environmetrics, vol. 2* (AH El-Shaarawi and WW Piegorsch, *eds.*), J Wiley & Sons, 1161–1164.
 59. MJ Messner and RL Wolpert, 2002. Cryptosporidium and Giardia occurrence in ICR drinking water sources—Statistical analysis of ICR data. In *Information Collection Rule Data Analysis* (Michael J McGuire, Jennifer L. McLain, and ALexa Obolensky, *eds.*), American Water Works Association Research Foundation, 463–481.
 60. RL Wolpert, K Ickstadt and MB Hansen, 2003. A nonparametric Bayesian approach to inverse problems. In *Bayesian Statistics 7* (JM Bernardo, MJ Bayarri, JO Berger, AP Dawid, D Heckerman, AFM Smith and M West, *eds.*), Oxford University Press, Oxford, 403–418.
 61. K Ogle, RL Wolpert and JF Reynolds, 2004. Reconstructing plant root area and water uptake profiles. *Ecology* **85(7)**, 1967–1978.
 62. RL Wolpert, 2004. A Conversation with James O. Berger. *Statistical Science* **19(2)**, 205–218.
 63. RL Wolpert, K Ickstadt, 2004. Reflecting Uncertainty in Inverse Problems: A Bayesian Solution using Lévy Processes. *Inverse Problems* **20(6)**, 1759–1771.
 64. RL Wolpert and KL Mengersen, 2004. Adjusted likelihoods for synthesizing empirical evidence from studies that differ in quality and design: effects of environmental tobacco smoke. *Statistical Science* **19(3)**, 450–471.
 65. RL Wolpert and M Taqqu, 2005. Fractional Ornstein-Uhlenbeck Process and the TelCom Process: Upstairs and downstairs. *Signal Processing* **85(8)**, 1523–1545.
 66. MA Clyde, LL House, C Tu and RL Wolpert, 2005. Bayesian Nonparametric Function Estimation using Overcomplete Representations and Lévy Random Field Priors. In *Statistische und Probabilistische Methoden der Modellwahl* (Oberwolfach Reports # 47/2005; James O Berger, Holger Dette, Gabor Lugosi, Axel Munk, *eds.*), 2628–2632.
 67. MA Clyde, LL House and RL Wolpert, 2006. Nonparametric Models for Proteomic Peak Identification and Quantification. In *Bayesian Inference for Gene Expression and Proteomics* (Kim-Anh Do, Peter

Müller and Marina Vannucci, *eds.*), Chap 15.

68. JR Stapleton, ML Lavine, RL Wolpert, MAL Nicoletis and SA Simon, 2006. Rapid Taste Responses in the Gustatory Cortex during Licking. *Journal of Neuroscience* **26(15)**, 4126–4138.
69. MA Clyde and RL Wolpert, 2007. Nonparametric Function Estimation using Overcomplete Dictionaries. In *Bayesian Statistics 8* (JM Bernardo, MJ Bayarri, JO Berger, AP Dawid, D Heckerman, AFM Smith and M West, *eds.*), Oxford University Press, Oxford, 91–114.
70. N Pillai, Q Wu, F Liang, S Mukherjee and RL Wolpert, 2007. Characterizing the function space for Bayesian kernel models. *Journal of Machine Learning Research* **8**, 1769–1797.
71. RL Wolpert, 2007. Invited Comment on *Subjective Likelihood for the Assessment of trends in the Ocean’s Mixed-Layer Depth*, by A Rappold, M Lavine and S Lozier. *J. American Statistical Assoc.* **95(451)**, 782–784.
72. AD Gronewold, RL Wolpert, 2008. Modeling the Relationship Between Most Probable Number (MPN) and Colony-Forming Unit (CFU) Estimates of Fecal Coliform Concentration. *Water Research* **42(13)**, 3327–3334.
73. AD Gronewold, ME Borsuk, RL Wolpert and KH Reckhow, 2008. An Assessment of Fecal Indicator Bacteria-Based Water Quality Standards. *Environmental Science & Technology* **42(13)**, 4676–4682.
74. AD Gronewold, SS Qian, RL Wolpert and KH Reckhow, 2009. Calibrating and Validating Bacterial Water Quality Methods: A Bayesian Approach. *Water Research* **43(10)**, 2688–2698.
75. MJ Bayarri, JO Berger, ES Calder, K Dalbey, S Lunagómez, AK Patra, EB Pitman, E Spiller, RL Wolpert, 2009. Using Statistical and Computer Models to Quantify Volcanic Hazards. *Technometrics* **51(4)**, 402–413.
76. ML Huber and RL Wolpert, 2009. Likelihood-based Inference for Matérn Type III Repulsive Point Processes. *Advances in Applied Probability* **41(4)**, 958–977.
77. DB Woodard, RL Wolpert and MA O’Connell, 2009. Spatial Inference of Nitrate Concentrations in Groundwater. *Journal of Agricultural, Biological and Environmental Statistics* **15(2)**, 209–227.
78. J Møller, M Huber and RL Wolpert, 2010. The Stationary Matérn Hard Core Process of Type III. *Stochastic Processes & Applications* **120**, 2142–2158.
79. WV Li, NS Pillai and RL Wolpert, 2010. On the Supremum of a Certain Family of Stochastic Processes. *Statistics and Probability Letters* **80(11-12)**, 911–915.
80. MA Clyde and RL Wolpert, 2011. Discussion of *Shrink Globally, Act Locally: Sparse Bayesian Regularization and Prediction*, by N Polson and G Scott. In *Bayesian Statistics 9* (JM Bernardo, MJ Bayarri, JO Berger, AP Dawid, D Heckerman, AFM Smith and M West, *eds.*), Oxford University Press, Oxford, 000–000.
81. H Petersen, C Coleman-Smith, SA Bass and RL Wolpert, 2011. Constraining the initial state granularity with bulk observables in Au+Au collisions at $\sqrt{s_{NN}} = 200$ GeV. *J Phys G: Nucl Part Phys* **38**, 045102.
82. LL House, MA Clyde and RL Wolpert, 2010. Nonparametric Models for Peak Identification in MALDI-TOF Mass Spectroscopy. *Annals of Applied Statistics* **5(2B)**, 1488–1511.
83. RL Wolpert, MA Clyde and C Tu, 2011. Stochastic Expansions Using Continuous Dictionaries: Lévy Adaptive Regression Kernels. *Annals of Statistics* **39(4)**, 1916–1962.
84. RL Wolpert and SC Schmidler, 201_. α -Stable Limit Laws for Harmonic Mean Estimators of Marginal Likelihoods. Accepted for publication in *Statistica Sinica*.

Articles Under Review:

85. S Lunagómez, S Mukherjee and RL Wolpert. Geometric Representations of Hypergraphs for Prior Specification and Posterior Sampling. *Under invited revision.*
86. RL Wolpert and LD Brown. Markov Infinitely divisible Stationary Time reversible Integer valued (MISTI) Processes. *Submitted.*

Articles in Preparation:

87. NS Pillai, RL Wolpert and Y Xiao. Posterior Consistency of Bayesian Nonparametric Models using Lévy Random Field Priors. *In preparation.*
88. LL House, MA Clyde and RL Wolpert. Data Analysis Using Lévy Random Field Models for Multi-Spectra Peak Identification and Classification. *In preparation.*
89. LD Brown and RL Wolpert. Positive Real Infinitely divisible Stationary Markov (PRISM) processes. *In preparation.*
90. Z Ouyang, MA Clyde and RL Wolpert. Bayesian Additive Regression Kernels. *In preparation.*
91. LD Brown, LA Shepp and RL Wolpert. The General Stationary Gaussian Markov Process. *In preparation.*
92. MA Clyde, RL Wolpert and C Tu. Beyond Correlation: LARK Time Series Models for Multivariate Air Pollution Data. *In preparation.*
93. Z Ouyang, MA Clyde and RL Wolpert. Fully Bayesian Low Rank Kernel Models for Classification. *In preparation.*
94. MA Clyde, RL Wolpert and C Tu. Air Pollutant Monitoring and Analysis Using Spatio-Temporal Models. *In preparation.*

6. Service:

University Service:

- 2011- Member, A&S Success in Science/Math Education Committee (SS/ME)
- 2008- Member, Steering Committee, Center for Theoretical & Mathematical Sciences (CTMS)
- 2008- Member, Research Computing Advisory Council (RCAC)
- 2008- Member, Scalable Computing Advisory Committee (SCAC)
- 2007-08 Member, Provost's Advisory Committee on High-Performance Computing
- 2006-09 Member, Arts & Sciences Council Technology Advisory Committee (ASTAC)
- 2006-08 Member, Arts & Sciences Council Committee on Faculty Research
- 2005 Co-Chair, Search Committee for Associate Dean of Arts & Sciences for Information Technology
- 2005-07 Member, CSEM Primary Faculty
- 2004- Board Member, Social Science Research Institute (SSRI)
- 2004- Member, Program in Advanced Research in the Social Sciences (PARISS) Board of Advisors
- 2003- Member, University Scholars Program (USP) Faculty Advisory Board
- 2003-04 Co-Instructor, University course CPS 258: Intro Computational Science
- 2003-04 Co-Instructor, ISIS 100: Perspectives on Info Sci & Info Studies
- 2002-03 Representative, Academic Council (Natural Sciences)
- 2002-03 Member, CMS (Content Management System) Core Subcommittee, ITAC
- 2002-07 Member, Steering Committee, Provost's Task Force on Sci. Comput., Eng'g & Medicine (CSEM)
- 2001-04 Member, Interdisciplinary Studies in Information Sciences (ISIS) Faculty Advisory Board
- 2001-02 Member, Steering Committee, Provost's Computer and Information Technology Intensive Environment (CITIE)
- 2001-02 Member, University Search Committee for Vice President for Information Technology
- 2000-01 Executive Committee, Arts & Sciences Council

- 1999-03 Representative, Arts & Sciences Council
- 1999-01 Member, Interdisciplinary Studies in Information Sciences (ISIS) Curricular Committee
- 1999-01 Member, Coordinating Committee for Planning in Information Technology (CCPIT)
- 1998-99 Representative, Academic Council (Natural Sciences)
- 1996-98 Pre-Major Advisor
- 1995-00 Founding Member, Duke University Faculty Associates Program (FAP)
- 1995-04 Chair, Information Technology Advisory Council (ITAC)
(appointed 3 times by Executive Committee, Academic Council and Provost)
- 1995-10 Member, Information Technology Advisory Council (ITAC)
- 1995-10 Member, Information Technology Advisory Council Steering Committee
- 1993-03 Interviewer, Office of Undergraduate Scholars & Fellows
- 1993-94 Chair, University Search Committee for a Duke Chief Information Technology Officer
(by invitation of the President)
- 1993 Duke Computing Task Force
(reports to Executive VP, Provost and President-elect)
- 1992-93 Information Systems Steering Committee (ISCOM)
(reports to Provost and Academic Council)
- 1990-94 Duke Workstation Policy Board
- 1987-93 Academic Council Advisory Committee on Academic Computing (ACAC)
(reports to Provost and Academic Council)
- 1991-93 *Computation at Duke* Reorganization Task Force
- 1988-89 Provost's Select Committee on Networked Computing

Professional Service:

- 2009 NSF Review Panel (DMS Statistics, 2009/02/02:04)
- 2009- Active Member, NOAA LSST ISSC (Informatics and Statistics Science
Collaboration for the Large Synoptic Survey Telescope)
- 2009- Professional Advisory Committee, CalWEA
- 2007-09 Executive Secretary, *Internat. Soc. for Bayesian Analysis* (ISBA)
- 2007-09 Web Editor, *Internat. Soc. for Bayesian Analysis* (ISBA)
- 2006- NSF Review Panels (CMG 2006/04/01:04, DMS 2009/02/10:12)
- 2006-07 Faculty Associate, SAMSI; co-chair *Methodology* working group
- 2006-08 Program Committee, ISBA-2008 World Meeting
- 2005 Program Committee, ISBA/Valencia 8 World Meeting
- 2004-05 SBSS/ISBA Savage Award Selection Committee
- 2002-05 IMS Rep, *Fisher Lecture Committee*, Committee of Presidents of Statistical Societies (COPSS)
- 2002- International Representative, *Australasian Soc. for Bayesian Analysis* (ASBA)
- 2002-04 Board of Directors, ISBA
- 1998-00 Program Chair, ISBA
- 1998-08 Publications Committee, ISBA

7. Editorial Activities:

- 2005-08 Associate Editor, *J. Amer. Statist. Assoc.* Theory and Methods
- 1998-08 Editor, *ISBA-SBSS Bayesian Abstract Archive*
- 1998-01 Associate Editor, *J. Amer. Statist. Assoc.* Theory and Methods

8. Invited Addresses:

- 1977 Department of Statistics, Purdue University; West Lafayette, IN.
- 1978 Department of Mathematics, University of British Columbia; Vancouver, Canada.
- 1979 Department of Mathematics, Cornell University; Ithaca, NY.
- 1980 Department of Mathematics, University of British Columbia; Vancouver, Canada.
- 1980 American Mathematical Society; Atlanta, GA.
- 1980 Department of Operations Research, Cornell University; Ithaca, NY.
- 1981 Third Purdue Symposium on Statistical Decision Theory; West Lafayette, IN.
- 1981 Third Vilnius Conference on Probability Theory and Stochastic Processes; Vilnius, Lithuania, USSR.
- 1981 CIMS/CNRS Conference on Probability Theory and Mathematical Physics; Marseilles, France.
- 1981 Institute of Mathematical Statistics; Philadelphia.
- 1981 American Mathematical Society; Washington, DC.
- 1981 Institute of Mathematical Statistics; Knoxville, TE.
- 1983 *Modeling neuronal electrical behavior with stochastic differential equations in nuclear-spaces.* LSU Conference on Stochastic Differential Equations in Infinite Dimensional Spaces and their Applications; Baton Rouge, LA.
- 1984 *Diffusions and weak convergence in the dual of a nuclear space.* Department of Mathematics, Purdue University; West Lafayette, IN.
- 1984 *Modeling neuronal behavior with Φ' diffusions.* Department of Statistics, Purdue University; West Lafayette, IN.
- 1984 *Weak convergence of probability measures on Φ' .* Department of Statistics, University of North Carolina; Chapel Hill, NC.
- 1985 *Martingale methods for studying weak convergence of infinite-dimensional diffusions.* Bernoulli Society (Stochastic Processes Association, International Statistical Institute); Nagoya, Japan.
- 1985 *Mathematical models for spatially-extended single neurons.* USA-Japan Conference on Stochastic Processes in Biology; Nagoya, Japan.
- 1986 Invited discussion of *Conditionally acceptable frequentist procedures* (G Casella). Fourth Purdue Symposium on Statistical Decision Theory; West Lafayette, IN.
- 1986 *Infinite-dimensional stochastic models for spatially-extended neurons* (with G Kallianpur). NSF/CBMS Conference on Stochastic Methods in Neurophysiology; Raleigh, NC.
- 1986 *A framework for assessing proposed interventions.* CDC Conference on Predicting the Effects of Interventions for the Prevention of Youth Suicide; Atlanta, GA.
- 1986 *An assessment of six proposed interventions* (with DM Eddy). NIMH Conference on Strategies for the Prevention of Youth Suicide; Washington, DC.
- 1986 *Assessing proposed interventions for preventing youth suicide* (with DM Eddy). Invitational Conference on Applications of Quantitative Analytic Methods to Mental Health; Boston, MA
- 1986 *Choosing a measure of treatment effect.* ASA/EPA Conference on Statistical Issues in Combining Environmental Studies; Washington, DC.
- 1987 *Methods for proving weak convergence of Φ' processes.* International Workshop on Diffusion Approximations and Related Topics, International Institute of Applied Statistical Analysis (IIASA); Vienna, Austria.
- 1988 *Bayesian methods for combining empirical evidence.* IMS-ENAR Regional Meeting; Boston, MA.
- 1989 *Bayesian hierarchical survival models.* Interface/89 meeting; Orlando, FL.
- 1989 *Monte-Carlo integration in Bayesian statistical analysis.* AMS-IMS-SIAM Joint Summer Research Conference; Arcata, CA.
- 1990 *Bayesian hierarchical logistic models.* Department of Statistics, Purdue University; West Lafayette, IN.

- 1990 *Predicting in models exhibiting multicollinearity*. Department of Statistics, University of Toronto; Toronto, Canada.
- 1990 *Combining laboratory and field evidence*. Department of Statistics, Carnegie-Mellon University; Pittsburgh, PA.
- 1991 *Bayesian Hierarchical Logistic Models for Combining Field and Laboratory Survival Data* (with WJ Warren-Hicks). Fourth Valencia International Meeting on Bayesian Statistics; Valencia, Spain.
- 1991 *Bayesian Hierarchical Models for Transport and Fate Modeling* (with KH Reckhow and LJ Steinberg). NSF/ASA/Rand Symposium on Bayesian Statistics in Science and Technology: Case Studies, Carnegie-Mellon University; Pittsburgh, PA.
- 1992 Invited discussion of J Berger and E Moreno, *Bayesian Robustness in Bidimensional Models*. First International Workshop on Bayesian Robustness; Milano, Italy.
- 1992 *Laplace Control Variates in Bayesian Analysis— A New Swindle*. Latin America-US Workshop on Bayesian Statistics and Econometrics; Caracas, Venezuela.
- 1993 Invited discussion of *Thematic Maps and Satellite Imagery*, by EJ Green, AFM Smith and WE Strawderman. 1st Riverboat Conference on Bayesian Econometrics and Statistics; Basel, Switzerland.
- 1993 *Bayesian Meta-Analysis*. Centre de Recherche en Economie et en Statistique Theorique (CREST) and Institut National de la Statistique et des Etudes Economiques (INSEE), 1993 May 17; Paris, France.
- 1993 *Bayesian Hierarchical Models for Assessing the Effects of Blood Lead in Children*. Association pour la Utilisations and Ecole Nationale de la Statistique et de l'Administration Economique (ENSAE), 1993 May 24; Vannes, France.
- 1993 *Bayesian Methods in Environmental Science*. National Bayesian Econometric Research Association (NBER), 1993 August 6; San Francisco, CA.
- 1993 *A Bayesian Meta-analysis in Environmental Toxicology: Blood Lead and Infant Mental Development* (with C Li). Joint Meetings of the American Statistical Association and the Institute of Mathematical Statistics, 1994 August 10; San Francisco, CA.
- 1993 *Bayesian Inference in Ecological Risk Assessment* (with KH Reckhow). American Statistical Association Conference on Environmental Risk Assessment, 1993 September 23; Washington, DC.
- 1993 *Combining information: Good ways, Bad ways, Awful ways*. Department of Statistics, North Carolina State University, 1994 November 5; Raleigh, NC.
- 1993 *Variance Reduction Techniques in Simulation-Based Bayesian Computation*. Department of Statistics, Colorado State University, 1993 November 16; Fort Collins, CO.
- 1993 *Bayesian Hierarchical Models for Meta-Analysis*. International Workshop on Hierarchical Modeling, 1993 December 1; Rio de Janeiro, Brazil.
- 1994 Invited discussion of *Likelihood and Bayesian Approximation Methods*, by N Reid. Fifth Valencia International Meeting on Bayesian Statistics, 1994 June; Alicante, Spain.
- 1994 Invited discussion of *Inference from a Deterministic Population Dynamics Model for Bowhead Whales*, by A Raftery, G Givens and J Zeh. 154th Annual Meeting of American Statistical Association, 1994 August 15; Toronto, Canada.
- 1994 *Good and Bad Ways of Combining Statistical Information*. Biostatistics Department, School of Public Health, University of North Carolina, 1994 November 5; Chapel Hill, NC.
- 1994 Unifying frequentist and Bayesian testing in fixed and sequential settings. Queensland University of Technology, School of Mathematics, 1994 November 15; Brisbane, Australia.
- 1994 Laplace Control Variates in Bayesian Analysis. QUT MCMC/BUGS Workshop, Queensland University of Technology, School of Mathematics, 1994 November 29; Brisbane, Australia.
- 1995 *Reconciling Bayesian and frequentist hypothesis testing*, 19th Annual Conference Gesellschaft für Klassifikation, 1995 March 8–10; Basel, Switzerland.
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- 1995 *Modeling Densities With Markov Priors* (with M Lavine). Second International Workshop on Bayesian Robustness, 1995 May 22–25; Rimini, Italy,
- 1995 *Cox/Lévy Models for Spatial Statistics*. Sixth Latin American Congress on Probability and Mathematical Statistics (CLAPEM-VI): Bernoulli Society, 1995 November 20–24; Valparaíso, Chile.
- 1996 *Bayes factors from MCMC streams: Why it doesn't work*. Department of Econometrics and Statistics, Graduate School of Business, University of Chicago, 1996 May 1; Chicago, IL.
- 1996 *Bayesian Biostatistics*. International Biometric Conference: IBC-96, 1996 July 1–4; Amsterdam, NL.
- 1996 *Spatial Subordinators and Density Estimation*. Joint Statistical Meetings: Institute of Mathematical Statistics (IMS 59th Annual Meeting), American Statistical Association (ASA) & International Biometric Society (ENAR/WNAR), 1996 August 4–8; Chicago, IL.
- 1996 *Spatial Modeling with inhomogeneous point-process random fields: Bayesian models for studying disease patterns and biodiversity*. Department of Mathematics, Imperial College of Science and Technology, 1996 June 28; London, England.
- 1996 *Bayesian modeling with inhomogeneous gamma/Poisson random fields: Spatial variation of disease incidence and biodiversity*. Department of Statistics, University of North Carolina, 1996 August 28; Chapel Hill, North Carolina.
- 1996 *Random fields and Bayesian statistics*. Special IMS Meeting in honor of G Kallianpur, S Cambanis, and the 50th Anniversary of UNC-CH Department of Statistics, 1996 October 19; Chapel Hill, NC.
- 1997 *Inhomogeneous Infinitely-Divisible Bayesian Random Field Models*. Recent Advances in Statistics and Probability, jointly sponsored by the ISI and Bernoulli Society for Mathematical Statistics and Probability, 1997 December 28–1998 January 1; Calcutta, India.
- 1998 *Bayesian Random Field Models for Bioabundance and Biodiversity*. Duke University Center for Mathematics and Computation in the Life Sciences and Medicine, 1998 October 21.
- 1998 Invited discussion of *Functional Magnetic Resonance Imaging and Spatio-temporal Inference*, by C Genovese. Sixth Valencia International Meeting on Bayesian Statistics, 1998 May 30–June 4; Alcossebre, Spain.
- 1998 *Spatial Regression for Marked Point Processes* (with K Ickstadt). Sixth Valencia International Meeting on Bayesian Statistics, 1998 May 30–June 4; Alcossebre, Spain.
- 1999 *Spatial regression for marked point processes* (joint with K Ickstadt). Session on *Bayesian Approaches for Environmental Data and Risk Assessment*, International Biometric Society (ENAR), 1999 March 29; Atlanta, Georgia.
- 1999 *Under- and over-dispersed point patterns* (joint with K Ickstadt). Session on *Bayesian Analysis of Spatial Point Patterns*, International Biometric Society (ENAR), 1999 March 30; Atlanta, Georgia.
- 1999 *Marked Point Process Models and a Biodiversity Application*. Department of Mathematics, Queensland University of Technology, 1999 April 21; Brisbane, Australia.
- 1999 *Bayesian Spatial Regression Models: A Disease Mapping Example* (joint with N Best and K Ickstadt). Statistical Society of Australia, 1999 May 24; Brisbane, Australia.
- 1999 *Hierarchical point process models for spatial regression analysis* (joint with K Ickstadt). HSSS Workshop on Statistical modelling of spatial and space-time processes, 1999 July 11; CIRM, Luminy, France.
- 1999 *Bayesian spatial regression models for environmental epidemiology* (joint with N Best and K Ickstadt). HSSS Workshop on Statistical modelling of spatial and space-time processes, 1999 July 11; CIRM, Luminy, France.
- 1999 *Inference for Underdispersed Point Processes* (joint with K Ickstadt). HSSS Workshop on Statistical modelling of spatial and space-time processes, 1999 July 15; CIRM, Luminy, France.
- 1999 *Recent Developments in Marked Point Process Modeling and Spatial Regression*. Gertrude M. Cox Celebration, National Institute of Statistical Sciences, 1999 September 9; Research Triangle Park, NC.

- 1999 *Modeling the impact of traffic-related air pollution on childhood respiratory illness in London* (with N Best, K Ickstadt, S Cockings and P Elliott). Case Studies in Bayesian Statistics 5, Carnegie-Mellon University, 1999 September 24; Pittsburgh, PA.
- 2000 *Inference about Rare Poisson Events*. Triangle Environmental Sciences Working Group. 2000 February 2; NISS, RTP, NC.
- 2000 *Simulation & Estimation of Independent-Increment Random Fields: Inference for Remote Laser Profile Data* (joint with K Ickstadt). Aalborg University Department of Mathematical Sciences, 2000 June 14; Aalborg, DK.
- 2000 *Inference for Underdispersed Point Processes*. TMR Conference on Spatial & Computational Statistics, 2000 September 17; Ambleside, UK.
- 2001 *Lévy Random Fields and Nonparametric Bayesian Analysis*. Spatial Moving Average Workshop, 2001 May 20-22; Seattle, WA.
- 2001 *Point Process Framework in Small Area Statistics*. 23rd European Meeting of Statisticians, 2001 August 13; Funchal (Madeira), PT.
- 2001 *Spatial Bayesian Biostatistics*. Troisième cycle romand de statistique, 2001 September 12-14; St. Croix, CH.
- 2002 *Bayesian Inverse Problems*. IMS Medallion Special Invited Presentation. International Biometric Society (ENAR) and Institute of Mathematical Statistics (IMS) Eastern Meeting, 2002 March 15-21, Washington, D.C.
- 2002 *Bayesian Inverse Problems*. Seventh Valencia International Meeting on Bayesian Statistics, 2002 June 2-6; Tenerife, ES.
- 2002 *Spatial Nonparametric Bayesian Methodology*. Presidential Invited Lecture Series. Inaugural Meeting, Australasian Chapter of ISBA, 2002 July 6-7; Canberra, AU.
- 2002 *Point Process Inference*. Sixteenth Australian Statistical Conference (16ASC), 2002 July 7-11; Canberra, AU.
- 2002 *Bayesian Inverse Problems*. SAMSI Workshop on Inverse Problems, 2002 September 21-24; NISS, RTP, NC.
- 2003 *Disease Mapping using Disparate Spatial Data*. SAMSI/GSP Workshop on Spatio-Temporal Modeling, 2003 June 1-6, Boulder, CO.
- 2003 *Scale-independent Spatial Epidemiology*. International Conference on Environmental Statistics and Health, 2003 July 16-18, Santiago de Compostela, ES.
- 2003 *Bayesian Indirect Measurement*. SAMSI Workshop on Sensor Networks, 2003 October 14-15; NISS, RTP, NC.
- 2003 *Congested Traffic Modelling*. SAMSI Workshop on Heavy Traffic, 2003 October 31-November 1; NISS, RTP, NC.
- 2003 *Bayesian Inverse Problems*. 2003 November 19; Wharton School, Philadelphia, PN.
- 2004 *Mixtures, Bayesian Methods and Markov-Chain-Monte-Carlo*. Karlsruher Stochastik-Tage 2004 Konferenze, 2004 March 22-26; Karlsruhe, DE.
- 2005 *Non-Gaussian Spatio-temporal Bayesian Modeling* (Keynote talk). Statist. Soc. of Australia *Bayesian Topics in the Tropics* workshop, 2005 September 28-30th; Stradbroke Island (QLD), AU.
- 2006 *Bayesian Semiparametric Space-Time Models*. 2006 February 15; GSB, University of Chicago, Chicago, IL.
- 2006 *Nonparametric Function Estimation using Overcomplete Dictionaries* (with MA Clyde). Eighth Valencia International Meeting on Bayesian Statistics, 2006 June 1-6; Benidorm, ES.
- 2006 *Bayesian Semiparametric Space-Time Models*. 2006 October 13; OR & IE, Cornell University, Ithaca, NY.
- 2007 *Pyroclastic Flow Models*. SAMSI Computer Modeling Workshop, 2007 May 5-14; RTP, NC.
- 2007 Invited discussion of *On the one hand,...* by K. Mengersen. O'Bayes 6, 2007 June 8-12; Rome, IT.

- 2007 *Modeling with infinitely-divisible moving averages*. Joint Statistical Meetings (IMS, ASA, IBS (ENAR/WNAR)), 2007 Jul 29–Aug 02; Salt Lake City, UT.
- 2007 *Bayesian Semiparametric Space-time Models*, 2007 Dec 2–6; Coffs Harbour, NSW, AU.
- 2008 *Simulating Lévy Random Fields*, 2008 Jun 10–11; Univ Warwick, Coventry, UK.
- 2008 *Bayesian Analysis of Fecal Coliform Indicators*, 2008 Jul 17–18; Brisbane, AU.
- 2009 *Lévy Random Fields: Construction, Application, and Inference*, Duke Mathematics Department Probability Seminar, 2009-04-07; Durham, NC.
- 2009 Invited discussant, O'Bayes '09, 2009 June 5–9; Philadelphia, PA.
- 2009 *Simulating Lévy Random Fields*, Univ Ålborg. 2009 May 21, Ålborg, DK.
- 2009 *Uncertain Tempering & Extreme Events in Volcanic Risk Assessment*, JSM. 2009 Aug 04, Denver, CO.
- 2010 *Toward Likelihood-based Inference for Spatial Extremes*, SAMSI Workshop on Space-time Analysis for Environmental Mapping, Epidemiology and Climate Change. 2010 Feb 17, RTP, NC.
- 2010 *Bayesian Spatial Extremes*, SAMSI Workshop on Space-time Analysis for Environmental Mapping, Epidemiology and Climate Change. 2010 Feb 17, RTP, NC.
- 2010 *Tempered Stable and Pareto Distributions: Predictions Under Uncertainty*, Frontiers of Statistical Decision Making and Bayesian Analysis: In Honor of James O. Berger. 2010 Mar 18, San Antonio, TX.
- 2010 *Bayesian Computer Modeling with Emulators*, MaDAI-10: Models and Data Analysis Initiative Workshop. 2010 May 11, Albuquerque, NM.
- 2010 *Extreme Events in Volcanic Risk Assessment*, Summer School on Risk Analysis using Computer Models. 2010 Aug 6, Vancouver, BC.
- 2010 *Stationary Infinitely-Divisible Markov Processes for Count Data*, Borrowing Strength: Theory Powering Applications, A Conference in Honor of Larry Brown's 70th Birthday. 2010 Dec 16, Philadelphia, PA.
- 2011 *Extreme Events in Volcanic Risk Assessment*, MVO at 15 International Workshop. 2011 Apr 5, Soufrière Hills, Montserrat.
- 2011 *Bayesian Computer Modeling with Emulators: What are the odds?*, MaDAI-11: Models and Data Analysis Initiative Workshop. 2011 Jul 07, MSU Dept. Physics, East Lansing, MI.
- 2011 *Extremal Dependence: Where to Start?*, SAMSI Extremal Dependence Working Group. 2011 Oct 17, RTP, NC.

9. Professional Affiliations:

American Statistical Association (ASA)
International Statistical Institute (Bernoulli Society)
Institute of Mathematical Statistics (IMS)
International Society for Bayesian Analysis (ISBA)
Royal Statistical Society (RSS)

10. Sponsored Research:

- 2009-12 Co-PI, NSF/CDI Grant # 0941373 (\$1,800,000), with Stephen Bass, Wolfgang Bauer, Daniel Dougherty, Berndt Mueller, Brian Oshea, Scott Pratt (PI), Mark Voit, Sharon Zhong: *From Models and Data to Knowledge and Understanding*.
- 2009-11 Co-PI, NASA AISR Grant # NNX09AK60G (\$675,000), with Thomas Loredo, Carlo Graziani, and Jon Hakkila: *Quantified Uncertainty: Flexible Probabilistic Modeling of Dynamic Spectra and Other Astronomical Data*.
- 2008-10 PI, NSF Grant # DMS-0757549 (\$479,724), with James O Berger: *FRG: Collaborative Research: Prediction and Risk of Extreme Events Utilizing Mathematical Computer Models of Geophysical Processes*. Also Co-PI, NSF Grant # DMS-0757367 (\$285,648) with E Bruce Pitman and Eliza S Calder of Univ Buffalo and Co-PI, NSF Grant # DMS-0757527 (\$219,468) with MJ Bayarri of NISS and E Spiller of Marquette Univ. (Focused Research Group pgm)
- 2004-07 Co-PI, NSF (SCREMS Statistics and Probability) Grant #0422400 (\$183,143), with David Banks, Yuguo Chen, Merlise Clyde and Alan Gelfand: *Distributed Environments for Stochastic Computation*.
- 2000-03 Co-PI, NSF/EPA (Water and Watersheds) Grant #R828686-01-0 (\$557,859), with Merlise Clyde and Dave Higdon: *Spatial-Temporal Models for Environmental Health Effects*.
- 2000-01 PI, NSF (Statistics and Probability) Grant #DMS-0075302 (\$20,000): *Sixth World Meeting, ISBA 2000*.
- 1997-99 PI, NSF (SCREMS Statistics and Probability) Grant (\$46,000), with Dave Higdon, Valen Johnson and Mike West: *Mathematical sciences computing research environments*.
- 1996-98 PI, NSF (DMS Statistics and Probability) Grant #DMS-9626829 (\$66,000): *Spatial and spatial-temporal Bayesian point-process models for bioabundance and other applications*.
- 1993-95 Co-PI, Environmental Protection Agency Cooperative Agreement # CR822047-01-0 (\$318,413), with Ken Reckhow: *Analysis of regional patterns and trends in atmospheric deposition and EMAP indicators*.
- 1993-95 Co-PI, National Science Foundation (SCREMS) Grant #DMS-9305699 (\$88,978), with Valen Johnson (PI), Michael Lavine, Peter Müller, Giovanni Parmigianni, Dalene Stangl and Mike West: *Mathematical sciences computing research environments*.
- 1989-92 PI, National Science Foundation (Decision, Risk and Management Science) Grant # SES-8921227 (\$150,000), with Ken Reckhow: *Parameter estimation in pollutant transport-and-fate models*.
- 1988-92 National Science Foundation (Statistics and Probability) Grant #DMS-8903842 (\$200,000), with John Geweke (PI), Michael Lavine, Mike West: *The practice of Bayesian inference*.
- 1987-88 National Science Foundation (Scientific Computing Research Initiative in the Mathematical Sciences) Grant (\$150,000), with John Geweke (PI), Michael Lavine, Jean-François Richard and Mike West: *Computational facility for Bayesian statistical analysis*.
- 1986-88 National Council on Health Services Research Grant (\$450,000), with David Eddy (PI), Greg Critchfield, Victor Hasselblad and William Lisowski: *The Confidence Profile method for assessing medical technologies*.
- 1983-86 National Institute of Health Grant #RR01693-01 (\$150,000), with DB Menzel (PI), CR Shoaf, DL Morgan: *Predicting human lung burdens from environmental exposure to soluble metallic aerosols*.
- 1982-85 US Environmental Protection Agency Contract #68-02-3809 (\$250,000), with DB Menzel (PI), CR Shoaf, DL Morgan: *Regional deposition of sulphur dioxide in human and animal lungs*.
- 1982-83 US Air Force Office of Scientific Research #F49620 82 C 0009, with G Kallianpur, R Leadbetter, S Cambanis (Co-PI's): *Center for Stochastic Processes*.
- 1979-82 PI, National Science Foundation (Statistics and Probability) Grant #MCS80-01737 (\$75,000): *Prediction problem for Markov random fields*.
- 1977-79 PI, National Science Foundation (Statistics and Probability) Grant #MCS78-01737 (\$65,000): *Markov random fields*.

11. Current Research Interests:

Uncertainty Quantification in Astronomy and High-energy Physics;
Spatial statistics, extreme events, stochastic processes and non-parametric Bayesian analysis;
Extreme values, multidimensional maximal processes & fields and their applications;
Modeling and decision support in complex environmental systems;
Statistical synthesis of information, including meta-analysis and Bayesian hierarchical models.

12. Teaching Experience:

Developed and taught faculty seminars, graduate courses and undergraduate courses at all levels in probability, statistics and applied mathematics. Specific courses designed and/or taught include:

- ISIS 100 Perspectives in Information Science and Information Studies.
- STA 104 Probability Theory.
- STA 110 Statistics and Data Analysis.
- STA 113 (xl MTH 135) Probability and Statistics for Engineers.
- STA 114 (xl MTH 136) Statistics.
- STA 205 Probability and Measure Theory.
- STA 210 Statistical Data Analysis: Statistical theory and computer methods for laboratory and environmental scientists.
- STA 214 Statistical Methods for Engineers: Calculus-based statistical theory and computer methods for engineers.
- STA 215 Statistical Inference.
- STA 216 Generalized Linear Models: Likelihood, frequentist and Bayesian views of contemporary regression modeling.
- STA 248 Topics in Statistics: Hierarchical and Empirical Bayes Methods.
- STA 248 Topics in Statistics: Statistical Decision Theory.
- STA 248 Topics in Statistics: Robust Bayesian statistics.
- STA 248 Topics in Statistics: Nonparametric Bayesian statistics.
- STA 248 Topics in Statistics: Computational methods. Monte Carlo methods and alternatives including adaptive quadrature and Laplace approximations.
- STA 249 Topics in Statistics: Bayesian Meta-Analysis.
- STA 282 Optimization: Scientific applications of mathematical and numerical methods for locating the point where a real-valued function attains its minimum.
- STA 293 Simulation-Based Spatial Statistics. (joint with D Higdon)
- STA 293 Inference in Stochastic Processes.
- STA 293 Stochastic Processes for Bayesian Nonparametric Statistics.
- STA 293 Lévy Random Fields and Nonparametric Bayesian Statistics.
- STA 345 Multivariate Stochastic Analysis.
- STA 357 Stochastic Processes: Advanced probability theory, applied to problems in the theory and application of spatial and nonparametric Bayesian statistical analysis.
- MTH 240 Applied Stochastic Processes. Applications of martingale-based stochastic process methods to problems in epidemiology, population dynamics, portfolio analysis.
- MTH 248 Time Series Analysis. Spectral analysis and Box-Jenkins analysis of time series. Computational methods, applications.
- MTH 388 Topics in Differential Equations: Stochastic methods in partial differential equations. The Vorticity method for solving fluid dynamical problems at high Reynolds numbers.
- MTH 390 Topics in Probability: Stochastic differential equations.

13. Advisory Committees, Dissertations Co-supervised:

I have helped guide the dissertation research and served on the graduate advisory committees for the following students in the Department of Statistical Sciences (DSS, formerly Institute of Statistics and Decision Sciences, ISDS), the Department of Biology (Bio), in Civil and Environmental Engineering (CEE), Electrical and Computer Engineering (ECE), the Fuqua School of Business (FSB), the Department of Statistics at the University of North Carolina at Chapel Hill (UNC), and the School of Forestry and Environmental Science (FES), which later merged with the Duke Marine Laboratory to form the Nicholas School of the Environment (NSE).

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|------------------------------|-------------|--------------------------------------|
| 1. Brian Gullette | (CEE, 1985) | |
| 2. Jim Mitchel | (FES, 1989) | |
| 3. William J Warren-Hicks | (FES, 1990) | Co-supervised with Ken Reckhow (NSE) |
| 4. Craig Stow | (NSE, 1992) | Co-supervised with Ken Reckhow (NSE) |
| 5. Laura J Steinberg | (CEE, 1993) | Co-supervised with Ken Reckhow (NSE) |
| 6. Zhengning Lin | (DSS, 1993) | |
| 7. Chengchang Li | (DSS, 1994) | |
| 8. Amarjit Budhiraja | (UNC, 1994) | |
| 9. Fabrizio Ruggeri | (DSS, 1994) | |
| 10. Alyson G Wilson | (DSS, 1995) | |
| 11. Fusheng Su | (DSS, 1996) | |
| 12. E Conrad Lamon | (NSE, 1996) | |
| 13. Pauline A Vaas | (NSE, 1997) | Co-supervised with Ken Reckhow (NSE) |
| 14. Barbara van Harn Adams | (NSE, 1998) | Co-supervised with Ken Reckhow (NSE) |
| 15. Thomas B Stockton | (NSE, 1998) | Co-supervised with Ken Reckhow (NSE) |
| 16. Eric A Jones | (ECE, 1999) | |
| 17. John Kern | (DSS, 2000) | |
| 18. Christina Geyer | (DSS, 2000) | |
| 19. Rui Miguel Batista Paulo | (DSS, 2001) | |
| 20. Maria De Iorio | (DSS, 2001) | |
| 21. Enrique ter Horst | (DSS, 2003) | Supervised |
| 22. Kiona Ogle | (Bio, 2003) | MS Supervised |
| 23. Min Zhang | (Bio, 2004) | |
| 24. Fabio Rigat | (DSS, 2004) | |
| 25. Chong Tu | (DSS, 2006) | Co-supervised with Merlise Clyde |
| 26. JingQin 'Rosy' Luo | (DSS, 2006) | |
| 27. Gangqiang Xia | (DSS, 2006) | |
| 28. Casey Lichtendahl | (FSB, 2006) | |
| 29. Leanna House | (DSS, 2006) | Co-supervised with Merlise Clyde |
| 30. Dawn Woodard | (DSS, 2007) | |
| 31. Abel Rodriguez | (DSS, 2007) | |
| 32. Natesh Pillai | (DSS, 2008) | Supervised |
| 33. Andrew Gronewold | (NSE, 2008) | Co-supervised with Ken Reckhow (NSE) |
| 34. Zhi Ouyang | (DSS, 2008) | Co-supervised with Merlise Clyde |
| 35. Huiyan Sang | (DSS, 2008) | |

13. Advisory Committees, Dissertations Co-supervised (cont'd):

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|-------------------------|-------------|------------------------------------|
| 36. Quanlin Li | (NSE, 2008) | DSS MS |
| 37. Gavino Puggioni | (DSS, 2008) | |
| 38. Simón Lunagómez | (DSS, 2009) | Co-supervised with Sayan Mukherjee |
| 39. Danilo Lopes | (DSS, 2011) | Co-supervisor with Jim Berger |
| 40. Jianyu Wang | (DSS, 201x) | Co-supervisor with Jim Berger |
| 41. Mary Beth Broadbent | (DSS, 201x) | Supervisor |
| 42. Thomas Leininger | (DSS, 201x) | |
| 43. Maria Terres | (DSS, 201x) | |