

BRADLEY P. CARLIN**Contact Information:**e-mail: brad@phasevtrials.com or brad@counterpointstat.comweb: <http://phasevtrials.com> or <http://counterpointstat.com>ORCID: <https://orcid.org/0000-0002-0684-8753>**Personal Statement:**

I am a PhD biostatistician and data scientist interested in clinical study design, data analysis, programming, report-writing, methods development, and interaction with clients and regulatory authorities. My own training and research has focused on hierarchical Bayesian statistical modeling and associated computational methods, including Markov chain Monte Carlo (MCMC) methods. I spent 27 years on the biostatistics faculty at the University of Minnesota, the last 7 as chair. I have a proven track record of publishing and externally funded methodological grant support in Bayesian methods, computing, and applications related to spatial and environmental statistics, clinical trials, and meta-analysis, as well as mentoring the research of others. I have also been involved in the creation and dissemination of user-friendly software for implementing these models in practice; both through my own website and through the CRAN archive (see e.g. my work on the `spBayes` package). I have taught a variety of both traditional academic courses and government, industry, and professional short courses in hierarchical Bayesian modeling and its implementation via the R and BUGS packages, with special emphasis on Bayesian adaptive clinical trials, including simulation of procedure operating characteristics. I have coauthored over 190 refereed papers, as well as three leading textbooks on Bayesian methods. I currently serve as president and founder of my own consulting firm that specializes in adaptive methods for clinical trial design and analysis. I am also a pragmatist, and thus am very comfortable using standard statistical and machine learning methods when appropriate.

Education:

Ph.D. (Statistics), University of Connecticut, May 1989

major areas: Bayes and empirical Bayes methodology and applications

M.S. (Statistics), University of Connecticut, December 1986

Attained Associateship, Society of Actuaries, May 1985

B.S. (Mathematics and Actuarial Science), magna cum laude, University of Nebraska, May 1984

Experience:

PhaseV Trials, Inc.

Senior Director, Data Science and Statistics, January 2025–

Scientific Advisory Board Member, May 2023–December 2024

Cencora-PharmaLex

Senior Advisor, Data Science and Statistics, October 2020–December 2024

Counterpoint Statistical Consulting, LLC

Founder and President, June 2018–

Division of Biostatistics, School of Public Health, University of Minnesota

Mayo Professor in Public Health, July 2003–June 2018

Division Head, May 2010–August 2017

Professor, July 1999–June 2018

Associate Professor, July 1995–July 1999

Assistant Professor, August 1991–July 1995

Statistical Innovation, Data Sciences and Statistics, AbbVie, North Chicago, IL
David Jordan Visiting Statistical Scholar, August 2017–December 2017

Department of Quantitative Sciences, M.D. Anderson Cancer Center, Houston, TX
Visiting Faculty Fellow, September 2008–January 2009

Medtronic Corporation and HealthPartners Research Foundation
Visiting Senior Statistician, September 2001–December 2001

Medical Research Council Biostatistics Unit, Cambridge University (UK)
Visiting Research Associate, Summer 1997

Department of Statistics, Carnegie Mellon University
Visiting Assistant Professor, August 1989–July 1991

**Awards
and Honors:**

Elected to Phi Beta Kappa, University of Nebraska, May 1984.
H. Fairfield Smith Award in Applied Statistics, University of Connecticut,
December 1986.
University of Connecticut Research Fellowship, 1987-89.
Elected to Sigma Xi, Carnegie Mellon University, April 1990.
Journal of the American Statistical Association 1992 Special Invited Applications
Paper, “Hierarchical Bayes models for the progression of HIV infection using
longitudinal CD4 T-cell numbers” (with N. Lange and A.E. Gelfand).
Accepted invitation to join the editorial board of *Statistics in Medicine*, July 1994.
Elected Ordinary Member of the International Statistical Institute, January 1995.
University of Nebraska–Lincoln College of Arts and Sciences Alumni Association
1995 Young Alumni Achievement Award, May 1995.
Accepted invitation to join the editorial board of *Journal of the American
Statistical Association (Theory and Methods)*, May 1996.
Accepted invitation to join the organizing and editorial board, *Case Studies in
Bayesian Statistics* biannual conference series, July 1996.
Elected to Delta Omega (Public Health Honorary Society), University of Minnesota,
May 1997.
Accepted invitation to join the editorial board, *Bayesian Statistics 6*
(Valencia volume) quadrennial conference series, June 1998.
Accepted invitation to join the NIH Social Sciences, Nursing, Epidemiology and
Methods biostatistical methods study section (SNEM-5), July 1999
APHA Mortimer Spiegelman Award (health statistician under age 40),
June 2000.
Harvard School of Public Health Department of Biostatistics Myrto Lefkopoulou
Distinguished Lectureship (biostatistician within 15 years of earned doctorate),
April 2001.
14th place worldwide (out of 81,700 researchers), “Most-cited authors in the
mathematical sciences, 1991-2001,” Science Citation Index, October 2001.
The International Environmetric Society (TIES) Abdel El-Shaarawi Young
Researcher’s Award (environmental statistician under age 40), June 2002.
Named Mayo Professor in Public Health (three-year rotating endowed chair),
University of Minnesota School of Public Health, April 2003.
Accepted invitation to join the editorial board, Texts in Statistical Science series,

Chapman and Hall publishers, 2004.
Accepted nomination as Editor-in-Chief, *Bayesian Analysis* (official journal of the International Society for Bayesian Analysis), May 2006.
University of Minnesota School of Public Health Leonard M. Schuman Award for Excellence in Teaching, June 2008.
Joint Statistical Meetings Excellence-in-CE Award, “Bayesian Adaptive Methods for Clinical Trials,” August 2010 (with D. Berry, J.J. Lee and S. Berry).
University of Minnesota Council of Graduate Students (COGS) Outstanding Faculty Award, April 2011.
University of Minnesota School of Public Health Award for Excellence in Advising, May 2014.
University of Connecticut Department of Statistics Distinguished Alumnus Award, November 2015.

Summary of Research Interests and Experience:

Dr. Carlin’s research has focused on hierarchical Bayesian methods and associated computational approaches to complex scientific problems in environmental science and clinical research. His most significant research contributions can be grouped into 5 primary areas:

1. Hierarchical Bayesian biostatistical model development and selection: Unlike the classical “frequentist” statistical paradigm, which uses p-values and other “design-based justifications for inference, Bayesian approaches are “model-based.” This means that all aspects of the chosen model (including any assumed prior distributions) must be correctly specified. Some of my most significant work has been in this area, many in biostatistical model choice, and often using MCMC methods for their implementation.

2. Bayesian approaches for longitudinal and joint longitudinal-survival modeling: This work on methods for analyzing complex multi-level datasets began with empirical Bayes approaches, but quickly veered into fully Bayesian methods implemented via MCMC techniques. My particular focus here has been the analysis of longitudinal data (repeated observations on the same subject), often in concert with associated survival information (say, disease-free survival times for those subjects).

3. Bayesian spatial and spatiotemporal approaches for geographically referenced health data: My primary area of emphasis here has been on methods for areal data, where we observe only data summaries over predefined geographic regions (say, counties or zip codes). Two particular areas of interest have been spatial data misalignment (where two variables are defined over different zonations) and gradient analysis and “wombling” (finding boundaries that separate regions or epochs of high and low response). I’ve also been associated with software development in this area (through the `spBayes` package in R). Application areas here include air pollution, environmental justice, cancer control, and alcohol policy.

4. Bayesian hierarchical approaches for adaptive clinical trials: A strength of Bayesian methods is that their model-based nature means they can adapt more easily to changes in experimental design, a significant advantage in the design and analysis of early phase clinical trials, especially in cancer. My work here has developed such methods, and more recently has focused on methods that adaptively borrow from historical and other auxiliary data, but in a cautious way that is governed by the “commensurability” (similarity) of the various data sources, automatically discarding less reliable sources when they conflict with more recent or reliable ones. Accurate inference for subgroups has also been a recent research focus. This work is supported by the website <http://research.mdacc.tmc.edu/SmeeactWeb/>.

5. Bayesian hierarchical approaches to network meta-analysis: This work refers to combination of evidence from a large number of (typically previously published) studies, most of which did not all compare the same treatment interventions. My research here has focused on developing “arm-based” hierarchical modeling methods that are more flexible and permit more interpretable inference than traditional “contrast-based” methods. My recent extensions permit inclusion of both aggregate and individual-level patient data.

Refereed Publications:

1. **Carlin, B.P.** and Gelfand, A.E., “Approaches for empirical Bayes confidence intervals,” *J. Amer. Statist. Assoc.*, **85**, 105–114, 1990.
2. Bendel, R.B. and **Carlin, B.P.**, “Bayes methods in the ecological fallacy context: Estimation of individual correlation from aggregate data,” *Communications in Statistics, Part A – Theory and Methods*, **19**, 2595–2623, 1990.
3. **Carlin, B.P.** and Gelfand, A.E., “A sample reuse method for accurate parametric empirical Bayes confidence intervals,” *J. Roy. Statist. Soc. Ser. B*, **53**, 189–200, 1991.
4. **Carlin B.P.** and Polson, N.G., “An expected utility approach to influence diagnostics,” *J. Amer. Statist. Assoc.*, **86**, 1013–1021, 1991.
5. **Carlin, B.P.** and Gelfand, A. E., “An iterative Monte Carlo method for nonconjugate Bayesian analysis,” *Statistics and Computing*, **1**, 119–128, 1991.
6. **Carlin, B.P.** and Polson, N.G., “Inference for nonconjugate Bayesian models using the Gibbs sampler,” *Canad. J. Statist.*, **19**, 399–405, 1991.
7. **Carlin, B.P.**, Gelfand, A.E. and Smith, A.F.M., “Hierarchical Bayesian analysis of changepoint problems,” *Applied Statistics*, **41**, 389–405, 1992.
8. **Carlin, B.P.**, Polson, N.G., and Stoffer, D.S., “A Monte Carlo approach to nonnormal and nonlinear state-space modeling,” *J. Amer. Statist. Assoc.*, **87**, 493–500, 1992.
9. **Carlin, B.P.**, Kass, R.E., Lerch, F.J. and Huguenard, B.R., “Predicting working memory failure: A subjective Bayesian approach to model selection,” *J. Amer. Statist. Assoc.*, **87**, 319–327, 1992.
10. **Carlin, B.P.** and Polson, N.G., “Monte Carlo Bayesian methods for discrete regression models and categorical time series,” in *Bayesian Statistics 4*, eds. J.M. Bernardo, J.O. Berger, A.P. Dawid and A.F.M. Smith, Oxford: Oxford University Press, pp. 577–586, 1992.
11. Lange, N., **Carlin, B.P.** and Gelfand, A.E., “Hierarchical Bayes models for the progression of HIV infection using longitudinal CD4 T-cell numbers,” *J. Amer. Statist. Assoc.*, **87**, 615–626, 1992.
12. Schervish, M.J. and **Carlin, B.P.**, “On the convergence of successive substitution sampling,” *Journal of Computational and Graphical Statistics*, **1**, 111–127, 1992.
13. Malatesta, R.J., Auster, P.J., and **Carlin, B.P.**, “Analysis of transect data for microhabitat correlations and faunal patchiness,” *Marine Ecology Progress Series*, **87**, 189–195, 1992.
14. **Carlin, B.P.**, “State space modeling of nonstandard actuarial time series,” *Insurance: Mathematics and Economics*, **11**, 209–222, 1992.
15. Strohmyer, L.L., Noroian, E.L., Patterson, L.M., and **Carlin, B.P.**, “Adaptation six months after multiple trauma: A pilot study,” *Journal of Neuroscience Nursing*, **25**, 30–37, 1993.
16. Etzioni, R. and **Carlin, B.P.**, “Bayesian analysis of the Ames *Salmonella*/microsome assay,” in *Case Studies in Bayesian Statistics (Lecture Notes in Statistics, Vol. 83)*, eds. C. Gatsonis, J.S. Hodges, R.E. Kass and N.D. Singpurwalla, New York: Springer-Verlag, pp. 311–323, 1993.
17. **Carlin, B.P.**, “A simple Monte Carlo approach to Bayesian graduation,” *Trans. Soc. Actuaries*, **44**, 55–76, 1993.
18. **Carlin, B.P.**, Chaloner, K., Church, T., Louis, T.A., and Matts, J.P., “Bayesian approaches for monitoring clinical trials with an application to toxoplasmic encephalitis prophylaxis,” *The Statistician*, **42**, 355–367, 1993.

19. **Carlin, B.P.** and Gelfand, A.E., “Parametric likelihood inference for record breaking problems,” *Biometrika*, **80**, 507–515, 1993.
20. Gelfand, A.E. and **Carlin, B.P.**, “Maximum likelihood estimation for constrained or missing data models,” *Canad. J. Statist.*, **21**, 303–311, 1993.
21. **Carlin, B.P.** and Klugman, S.A., “Hierarchical Bayesian Whittaker graduation,” *Scandinavian Actuarial Journal*, **1993.2**, 183–196, 1993.
22. **Carlin, B.P.**, Chaloner, K.M., Louis, T.A., and Rhame, F.S., “Elicitation, monitoring, and analysis for an AIDS clinical trial” (with discussion), in *Case Studies in Bayesian Statistics, Volume II*, eds. C. Gatsonis, J.S. Hodges, R.E. Kass and N.D. Singpurwalla, New York: Springer-Verlag, pp. 48–89, 1995.
23. **Carlin, B.P.** and Chib, S., “Bayesian model choice via Markov chain Monte Carlo methods,” *J. Roy. Statist. Soc. Ser. B*, **57**, 473–484, 1995.
24. Gelfand, A.E., Sahu, S.K., and **Carlin, B.P.**, “Efficient parametrisations for normal linear mixed models,” *Biometrika*, **82**, 479–488, 1995.
25. Ghosh, M., **Carlin, B.P.** and Srivastava, M.S., “Probability matching priors for linear calibration,” *Test*, **4**, 333–357, 1995.
26. Goldman, A.I., **Carlin, B.P.**, Crane, L.R., Launer, C., Korvick, J.A., Deyton, L., and Abrams, D.I., “Response of CD4 lymphocytes and clinical consequences of treatment using ddI or ddC in patients with advanced HIV infection,” *Journal of Acquired Immune Deficiency Syndromes and Human Retrovirology*, **11**, 161–169, 1996.
27. **Carlin, B.P.** and Louis, T.A., “Identifying prior distributions that produce specific decisions, with application to monitoring clinical trials,” in *Bayesian Analysis in Statistics and Econometrics: Essays in Honor of Arnold Zellner*, eds. D.A. Berry, K.M. Chaloner, and J.K. Geweke, New York: Wiley, pp. 493–503, 1996.
28. **Carlin, B.P.**, “Hierarchical longitudinal modeling,” in *Markov Chain Monte Carlo in Practice*, eds. W.R. Gilks, S. Richardson, and D.J. Spiegelhalter, London: Chapman and Hall, pp. 303–319, 1996.
29. Gelfand, A.E., Sahu, S.K., and **Carlin, B.P.**, “Efficient parametrizations for generalized linear mixed models” (with discussion), in *Bayesian Statistics 5*, eds. J.M. Bernardo, J.O. Berger, A.P. Dawid and A.F.M. Smith, Oxford: Oxford University Press, pp. 165–180, 1996.
30. Cowles, M.K., **Carlin, B.P.** and Connett, J.E., “Bayesian Tobit modeling of longitudinal ordinal clinical trial compliance data with nonignorable missingness,” *J. Amer. Statist. Assoc.*, **91**, 86–98, 1996.
31. **Carlin, B.P.** and Sargent, D.J., “Robust Bayesian approaches for clinical trial monitoring,” *Statistics in Medicine*, **15**, 1093–1106, 1996.
32. Cowles, M.K., and **Carlin, B.P.**, “Markov chain Monte Carlo convergence diagnostics: A comparative review,” *J. Amer. Statist. Assoc.*, **91**, 883–904, 1996.
33. **Carlin, B.P.**, “Improved NCAA basketball tournament modeling via point spread and team strength information,” *The American Statistician*, **50**, 39–43, 1996.
34. Sargent, D.J. and **Carlin, B.P.**, “Robust Bayesian design and analysis of clinical trials via prior partitioning” (with discussion), in *Bayesian Robustness*, IMS Lecture Notes – Monograph Series, **29**, eds. J.O. Berger et al., Hayward, CA: Institute of Mathematical Statistics, pp. 175–193, 1996.
35. Waller, L.A., **Carlin, B.P.**, Xia, H., and Gelfand, A.E., “Hierarchical spatio-temporal mapping of disease rates,” *J. Amer. Statist. Assoc.*, **92**, 607–617, 1997.
36. Breiter, D.J. and **Carlin, B.P.**, “How to play office pools if you must,” *Chance*, **10:1**, 5–11, 1997.

37. Xia, H., **Carlin, B.P.**, and Waller, L.A., “Hierarchical models for mapping Ohio lung cancer rates,” *Environmetrics*, **8**, 107–120, 1997.
38. Waller, L.A., **Carlin, B.P.**, and Xia, H., “Structuring correlation within hierarchical spatio-temporal models for disease rates,” in *Modelling Longitudinal and Spatially Correlated Data*, eds. T.G. Gregoire, D.R. Brillinger, P.J. Diggle, E. Russek-Cohen, W.G. Warren, and R.D. Wolfinger, New York: Springer-Verlag, pp. 308–319, 1997.
39. Waller, L.A., Louis, T.A. and **Carlin, B.P.**, “Bayes methods for combining disease and exposure data in assessing environmental justice,” *Environmental and Ecological Statistics*, **4**, 267–281, 1997.
40. Kass, R.E., **Carlin, B.P.**, Gelman, A. and Neal, R., “Markov chain Monte Carlo in practice: A roundtable discussion,” *The American Statistician*, **52**, 93–100, 1998.
41. Ghosh, M., Natarajan, K., Stroud, T.W.F. and **Carlin, B.P.**, “Generalized linear models for small area estimation,” *J. Amer. Statist. Assoc.*, **93**, 273–282, 1998.
42. Mugglin, A.S. and **Carlin, B.P.**, “Hierarchical modeling in geographic information systems: Population interpolation over incompatible zones,” *Journal of Agricultural, Biological, and Environmental Statistics*, **3**, 111–130, 1998.
43. Xia, H. and **Carlin, B.P.**, “Spatio-temporal models with errors in covariates: Mapping Ohio lung cancer mortality,” *Statistics in Medicine*, **17**, 2025–2043, 1998.
44. **Carlin, B.P.**, Kadane, J.B. and Gelfand, A.E., “Approaches for optimal sequential decision analysis in clinical trials,” *Biometrics*, **54**, 964–975, 1998.
45. **Carlin, B.P.**, Xia, H., Devine, O., Tolbert, P. and Mulholland, J., “Spatio-temporal hierarchical models for analyzing Atlanta pediatric asthma ER visit rates,” in *Case Studies in Bayesian Statistics, Volume IV*, eds. C. Gatsonis, et al., New York: Springer-Verlag, pp. 303–320, 1999.
46. Waller, L.A., Louis, T.A. and **Carlin, B.P.**, “Environmental justice and statistical summaries of differences in exposure distributions,” *J. Exposure Analysis and Environmental Epidemiology*, **9**, 56–65, 1999.
47. **Carlin, B.P.** and Xia, H., “Assessing environmental justice using Bayesian hierarchical models: Two case studies,” *J. Exposure Analysis and Environmental Epidemiology*, **9**, 66–78, 1999.
48. Mugglin, A.S., **Carlin, B.P.**, Zhu, L. and Conlon, E., “Bayesian areal interpolation, estimation, and smoothing: An inferential approach for geographic information systems,” *Environment and Planning A*, **31**, 1337–1352, 1999.
49. Heyd, J. and **Carlin, B.P.**, “Adaptive design improvements in the continual reassessment method for phase I studies,” *Statistics in Medicine*, **18**, 1307–1321, 1999.
50. Chib, S. and **Carlin, B.P.**, “On MCMC sampling in hierarchical longitudinal models,” *Statistics and Computing*, **9**, 17–26, 1999.
51. **Carlin, B.P.** and Hodges, J.S., “Hierarchical proportional hazards regression models for highly stratified data,” *Biometrics*, **55**, 1162–1170, 1999.
52. **Carlin, B.P.** and Stern, H., “Designing a college football playoff system,” *Chance*, **12:3**, 21–26, 1999.
53. Johnson, B., **Carlin, B.P.**, and Hodges, J.S., “Cross-study hierarchical modeling of stratified clinical trial data,” *J. Biopharmaceutical Statistics*, **9**, 617–640, 1999.
54. Tolbert, P., Mulholland, J., MacIntosh, D., Xu, F., Daniels, D., Devine, O., **Carlin, B.P.**, Klein, M., Dorley, J., Butler, A., Nordenberg, D., Frumkin, H., Ryan, P.B., and White, M., “Air pollution and pediatric emergency room visits for asthma in Atlanta,” *Amer. J. Epidemiology*, **151:8**, 798–810, 2000.

55. Zhu, L., **Carlin, B.P.**, English, P. and Scalf, R., “Hierarchical modeling of spatio-temporally misaligned data: relating traffic density to pediatric asthma hospitalizations,” *Environmetrics*, **11**, 43–61, 2000.
56. Eberly, L.E. and **Carlin, B.P.**, “Identifiability and convergence issues for Markov chain Monte Carlo fitting of spatial models,” *Statistics in Medicine*, **19**, 2279–2294, 2000.
57. Zhu, L. and **Carlin, B.P.**, “Comparing hierarchical models for spatio-temporally misaligned data using the Deviance Information Criterion,” *Statistics in Medicine*, **19**, 2265–2278, 2000.
58. **Carlin, B.P.** and Louis, T.A., “Empirical Bayes: past, present, and future,” *J. Amer. Statist. Assoc.*, **95**, 1286–1289, 2000.
59. Sargent, D.J., Hodges, J.S., and **Carlin, B.P.**, “Structured Markov chain Monte Carlo,” *Journal of Computational and Graphical Statistics*, **9**, 217–234, 2000.
60. Mugglin, A.S., **Carlin, B.P.**, and Gelfand, A.E., “Fully model based approaches for spatially misaligned data,” *J. Amer. Statist. Assoc.*, **95**, 877–887, 2000.
61. **Carlin, B.P.** and Pérez, M.-E., “Robust Bayesian analysis in medical and epidemiological settings,” in *Robust Bayesian Analysis (Lecture Notes in Statistics, Vol. 152)*, eds. D.R. Insua and F. Ruggeri, New York: Springer-Verlag, pp. 351–372, 2000.
62. Gelfand, A.E., Zhu, L., and **Carlin, B.P.**, “On the change of support problem for spatio-temporal data,” *Biostatistics*, **2**, 31–45, 2001.
63. **Carlin, B.P.**, Zhu, L., and Gelfand, A.E., “Accommodating scale misalignment in spatio-temporal data,” in *Bayesian Methods with Applications to Science, Policy and Official Statistics*, eds. E.I. George et al., Luxembourg: Office for Official Publications of the European Communities (Eurostat), pp. 41–50, 2001.
64. Gelfand, A.E., **Carlin, B.P.**, and Trevisani, M., “On computation using Gibbs sampling for multilevel models,” *Statistica Sinica*, **11**, 981–1003, 2001.
65. Han, C. and **Carlin, B.P.**, “Markov chain Monte Carlo methods for computing Bayes factors: A comparative review,” *J. Amer. Statist. Assoc.*, **96**, 1122–1132, 2001.
66. **Carlin, B.P.**, Mugglin, A.S., Zhu, L., and Gelfand, A.E., “Modeling spatio-temporally misaligned areal and point process environmental data,” in *Quantitative Methods for Current Environmental Issues*, eds. C. Anderson, et al., London: Springer-Verlag, pp. 3–35, 2002.
67. Banerjee, S. and **Carlin, B.P.**, “Spatial semiparametric proportional hazards models for analyzing infant mortality rates in Minnesota counties,” in *Case Studies in Bayesian Statistics, Volume VI*, eds. C. Gatsonis, et al., New York: Springer-Verlag, pp. 137–151, 2002.
68. Haran, M., **Carlin, B.P.**, Adgate, J.L., Ramachandran, G., Waller, L.A., and Gelfand, A.E., “Hierarchical Bayes models for relating particular matter exposure measures,” in *Case Studies in Bayesian Statistics, Volume VI*, eds. C. Gatsonis, et al., New York: Springer-Verlag, pp. 239–254, 2002.
69. Spiegelhalter, D.J., Best, N., **Carlin, B.P.**, and van der Linde, A., “Bayesian measures of model complexity and fit” (with discussion), *J. Roy. Statist. Soc. Ser. B*, **64**, 583–639, 2002.
70. Short, M., **Carlin, B.P.**, and Bushhouse, S., “Using hierarchical spatial models for cancer control planning in Minnesota (United States),” *Cancer Causes and Control*, **13**, 903–916, 2002.
71. Banerjee, S., Wall, M.M., and **Carlin, B.P.**, “Frailty modeling for spatially correlated survival data, with application to infant mortality in Minnesota,” *Biostatistics*, **4**, 123–142, 2003.
72. Thomas, A. and **Carlin, B.P.**, “Late detection of breast and colorectal cancer in Minnesota counties: An application of spatial smoothing and clustering,” *Statistics in Medicine*, **22**, 113–127, 2003.

73. **Carlin, B.P.** and Banerjee, S., “Hierarchical multivariate CAR models for spatio-temporally correlated survival data” (with discussion), in *Bayesian Statistics 7*, eds. J.M. Bernardo, M.J. Bayarri, J.O. Berger, A.P. Dawid, D. Heckerman, A.F.M. Smith, and M. West, Oxford: Oxford University Press, pp. 45–63, 2003.
74. Zhu, L., **Carlin, B.P.**, and Gelfand, A.E., “Hierarchical regression with misaligned spatial data: Relating ambient ozone and pediatric asthma ER visits in Atlanta,” *Environmetrics*, **14**, 537–557, 2003.
75. Banerjee, S. and **Carlin, B.P.**, “Semiparametric spatio-temporal frailty modeling,” *Environmetrics*, **14**, 523–535, 2003.
76. Haran, M., Hodges, J.S. and **Carlin, B.P.**, “Accelerating computation in Markov random field models for spatial data via structured MCMC,” *Journal of Computational and Graphical Statistics*, **12**, 249–264, 2003.
77. Hodges, J.S., **Carlin, B.P.**, and Fan, Q. “On the precision of the conditionally autoregressive prior in spatial models,” *Biometrics*, **59**, 317–322, 2003.
78. Troiani, J. and **Carlin, B.P.**, “Comparison of Bayesian, classical, and heuristic approaches in identifying acute disease events in lung transplant recipients,” *Statistics in Medicine*, **23**, 803–824, 2004.
79. Guo, X. and **Carlin, B.P.**, “Separate and joint modeling of longitudinal and event time data using standard computer packages,” *The American Statistician*, **58**, 16–24, 2004.
80. Banerjee, S. and **Carlin, B.P.**, “Parametric spatial cure rate models for interval-censored time-to-relapse data,” *Biometrics*, **60**, 268–275, 2004.
81. **Carlin, B.P.**, “Whither applied Bayesian inference?” in *Applied Bayesian Modeling and Causal Inference from Incomplete-Data Perspectives*, eds. A. Gelman and X.-L. Meng, Chichester: John Wiley and Sons, pp. 279–284, 2004.
82. Xie, Y., Jeong, K.S., Pan, W., Khodursky, A., and **Carlin, B.P.**, “A case study on choosing normalization methods and test statistics for two-channel microarray data,” *Comparative and Functional Genomics*, **5**, 432–444, 2004.
83. Jin, X. and **Carlin, B.P.**, “Multivariate parametric spatiotemporal models for county level breast cancer survival data,” *Lifetime Data Analysis*, **11**, 5–27, 2005.
84. Luan, X., Pan, W., Gerberich, S.G., and **Carlin, B.P.**, “Does it always help to adjust for misclassification of a binary outcome in logistic regression?” *Statistics in Medicine*, **24**, 2221–2234, 2005.
85. Lu, H. and **Carlin, B.P.**, “Bayesian areal wombling for geographical boundary analysis,” *Geographical Analysis*, **37**, 265–285, 2005.
86. Britt, H., **Carlin, B.P.**, Toomey, T.L., and Wagenaar, A.C., “Neighborhood level spatial analysis of the relationship between alcohol outlet density and criminal violence,” *Environmental and Ecological Statistics*, **12**, 367–382, 2005.
87. Jin, X., **Carlin, B.P.**, and Banerjee, S., “Generalized hierarchical multivariate CAR models for areal data,” *Biometrics*, **61**, 950–961, 2005.
88. Short, M., **Carlin, B.P.**, and Gelfand, A.E., “Bivariate spatial process modeling for constructing indicator or intensity weighted spatial CDFs,” *Journal of Agricultural, Biological, and Environmental Statistics*, **10**, 259–275, 2005.
89. Asplin, B.R., Rhodes, K.V., Levy, H., Lurie, N., Crain, A.L., **Carlin, B.P.**, and Kellerman, A.L., “Insurance status and access to urgent ambulatory care follow-up appointments,” *J. Amer. Med. Assoc.*, **294**, 10, 2005.
90. Reich, B.J., Hodges, J.S., **Carlin, B.P.**, and Reich, A.M., “A spatial analysis of basketball shot chart data,” *The American Statistician*, **60**, 3–12, 2006.

91. Short, M. and **Carlin, B.P.**, “Multivariate spatiotemporal CDFs with random effects and measurement error,” *Bayesian Analysis*, **1**, 595–624, 2006.
92. Xie, Y. and **Carlin, B.P.**, “Measures of Bayesian learning and identifiability in hierarchical models,” *Journal of Statistical Planning and Inference*, **136**, 3458–3477, 2006.
93. Neath, R.C. and **Carlin, B.P.**, “Does insurance status affect access to ER follow-up care?” *Chance*, **19:3**, 58–60, 2006.
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Book Reviews, Comments, and Other Publications:

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4. Kamber, A., Berkman, E., Frostig, T., Pryluk, R., Racah, Y., and **Carlin, B.P.**, “Group sequential trial design using stepwise Monte Carlo for increased flexibility and robustness.” Technical report, PhaseV Trials, Inc., 2025. Submitted to *Statistics in Medicine*.

Manuscripts in process:

1. Machluf, O., Frostig, T., Shoham, G., Milo, R., Berkman, E., Pryluk, R., **Carlin, B.P.**, “Robust CATE estimation using novel ensemble methods.”
2. Mukhopadhyay, S., Zhan, T., Hartford, A., and **Carlin, B.P.**, “Bayesian synthetic control methods for clinical trial design and analysis.”
3. Roychoudhury, S., Ohlssen, D., and **Carlin, B.P.**, “Flexible Bayesian approaches for dose-finding studies.”

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1. Gelfand, A.E. and **Carlin, B.P.**, “Exploratory data analysis and the National Crime Survey,” Technical Report 87–17, Department of Statistics, University of Connecticut, 1987.
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Grant Support:

1. Investigator (summer salary): National Science Foundation Mathematical Sciences Research Grant, “Parallel Computing in Bayesian Inference,” Principal Investigators W.F. Eddy and M. Schervish, Summer 1990.

2. Principal Investigator (travel support): National Science Foundation Travel Grant, for attendance at Fourth Valencia International Meeting on Bayesian Statistics, April 1991.
3. Principal Investigator (summer salary): Actuarial Education and Research Fund Grant, "A Monte Carlo Approach to the Analysis of Nonlinear and Non-Gaussian Actuarial Time Series," Summer 1991. (Total direct costs: \$6,500 over the period 6/1/91 – 8/31/91.)
4. Principal Investigator (travel support): IMS Travel Assistance for New Researchers Grant, for attendance at National IMS Meeting, August 1991.
5. Principal Investigator (graduate student, computing support): University of Minnesota Graduate School Grant-in-Aid of Research, Artistry and Scholarship #14982, "Monte Carlo Bayes and Empirical Bayes Methods for Biometric Data," 1992–93. (Total direct costs: \$16,120 over the period 2/14/92 – 6/30/93.)
6. Investigator (10% effort): National Institutes of Health Contract NO1-A1-05073, "Community Programs for Clinical Research on AIDS," 1992. (Total direct costs: roughly \$19,000,000 over the five-year grant period.)
7. Principal Investigator (50% effort): National Institutes of Health First Independent Research Support and Transition (FIRST) Award 1-R29-AI33466, "Sampling Based Approaches for Biostatistical Inference," 1992–97. (Total direct costs: \$306,998 over the five-year grant period 12/1/92 – 11/30/97.)
8. Co-Principal Investigator (25% effort Year 1; 40% effort Year 2): National Institute of Environmental Health Sciences Grant 1-R01-ES07750, "Statistical Methods to Assess Environmental Justice," Principal Investigator Dr. Lance Waller, 1996–2000. (Total direct costs: \$561,079 over the four-year grant period 8/1/96 – 7/31/00.)
9. Principal Investigator (40% effort Years 1 and 2; 20% effort Year 3; 10% effort Year 4): National Institute for Allergy and Infectious Diseases Grant 1-R01-41966-01, "Hierarchical Modeling of AIDS Clinical Trials Data," 1997–2001. (Total direct costs: \$215,927 over the four-year grant period 12/1/97 – 11/30/01.)
10. Principal Investigator (30% effort): Emory University, subcontract on National Institute of Environmental Health Sciences Grant 1-R01-ES07750, "Statistical Methods to Assess Environmental Justice," 1998–2000. (Total direct costs: \$154,757 over the two-year grant period 8/1/98 – 7/31/00.)
11. Principal Investigator (20% effort Years 1 and 2; 25% effort Year 3): EPA/NSF Partnership for Environmental Research Grant SES-9978238, "Statistical Methods for Environmental Social Science," 1999–2002. (Total direct costs: \$301,532 over the three-year grant period 12/1/99 – 11/30/02.)
12. Principal Investigator (30% effort): Emory University, subcontract on National Institute of Environmental Health Sciences Grant 5-R01-ES07750-07, "Statistical Methods to Assess Environmental Justice," 2001–2005. (Total direct costs: \$361,426 over the four-year grant period 5/1/01 – 4/30/05.)
13. Principal Investigator (30% effort): National Cancer Institute Grant 1-R01-CA95955, "Statistical Methods in Cancer Control and Epidemiology," 2003–2007. (Total direct costs: \$903,997 over the four-year grant period 8/1/03 – 7/31/07.)
14. Principal Investigator (0% effort): National Cancer Institute Grant 1-R13-CA110915, "Second International IMS/ISBA Joint Meeting" (Bormio, Italy), 2004–2005. (Total direct costs: \$10,000 over the one-year grant period 5/1/04 – 4/30/05.)
15. Co-Investigator (5% effort): National Institute for Nursing Research Grant 1-R01-NR009212, "Informatics-Based Nurse Triage in Lung Transplant Care," Principal Investigator Dr. Stanley Finkelstein, 2005–2009. (Total direct costs: \$1,316,356 over the four-year grant period 8/08/05 – 5/31/09.)
16. Co-Principal Investigator (15% effort): National Cancer Institute Grant 1-R01-A112444-01, "Hierarchical Modeling Approaches for Geographical Boundary Analysis in Cancer Studies," Principal Investigator Dr. Sudipto Banerjee, 2006–2009. (Total direct costs: \$559,380 over the three-year grant period 5/1/06 – 4/30/09.)

17. Co-investigator (5% effort Year 4): American Cancer Society Grant RSGT-04-004-01-CPHS, "Access to Hospice for Rural and Minority Elders," Principal Investigator Dr. Beth Virnig, 2007–2008. (Total direct costs: \$543,250 over the four-year grant period 1/1/04 – 4/30/08.)
18. Consultant (graduate student support): Environmental Protection Agency STAR grant, "Development of Environmental Health Outcome Indicators: Air Quality Improvements and Community Health Impacts," Principal Investigator Dr. Jean Johnson, 2007–2009. (Total direct costs: approximately \$500,000 over the two-year grant period 10/1/07 – 9/30/09.)
19. Principal Investigator (0% effort): National Science Foundation Grant DMS-0733734, "Travel Support for the Third International Joint IMS-ISBA Conference" (Bormio, Italy), 2007–2008. (Total direct costs: \$11,000 over the one-year grant period 9/1/07 – 8/31/08.)
20. Principal Investigator (0% effort): National Cancer Institute Grant 2-R13-CA110915-2, "Third International IMS/ISBA Joint Meeting" (Bormio, Italy), 2007–2008. (Total direct costs: \$11,000 over the one-year grant period 9/1/07 – 8/31/08.)
21. Principal Investigator (25% effort Year 1, 28% effort Years 2-3, 25% effort Year 4): National Cancer Institute grant 2-R01-CA095955-05A2, "Statistical Methods in Cancer Control and Epidemiology," 2008–2012. (Total direct costs: \$687,182 over the four-year grant period 8/1/08 – 7/31/12.)
22. Statistician (5% effort plus graduate student support): USDI Geological Survey Grant 08ERSA0351/ 0822820818, "Improving the Accuracy and Precision of Predictions of TFM-Niclosamide Concentrations for Treatment of Sea Lamprey Spawning Tributaries," Principal Investigator Dr. Steve Gutreuter, 2008–2009. (Total direct costs (Minnesota subcontract only): \$33,803 over the one-year grant period 9/1/08 – 8/31/09.)
23. Principal Investigator (23% effort plus graduate student support): Eli Lilly and Company Oncology Research grant, "Application of continuous time survival in latent variables models for the analysis of oncology randomized clinical trial data," 2009–2010. (Total direct costs: \$143,058 over the 18-month grant period 5/25/09 – 11/30/10.)
24. Co-Principal Investigator (10% effort plus graduate student support): National Institute on Alcohol Abuse and Alcoholism Grant 1R01AA016309-01A2, "Assessing Density of Alcohol Outlets, Other Outlets and Crime," Principal Investigator Dr. Traci Toomey, 2009–2011. (Total direct costs: \$565,571 over the two-year grant period 6/1/09 – 5/31/11.)
25. Co-Principal Investigator (8% effort plus graduate student support): National Institute on Alcohol Abuse and Alcoholism Grant 1R21AA016773-01A1, "Spatial and Temporal Effects of Alcohol Compliance Checks," Principal Investigator Dr. Darin Erickson, 2009–2011. (Total direct costs: \$250,000 over the two-year grant period 9/30/09 - 8/31/11.)
26. Statistician (10% effort plus graduate student support): National Institute on Aging Grant 1-R21-AG033130-01A2, "Enhanced Evaluation of Second Stage Translational Research," Principal Investigator Dr. Terrence Murphy, 2010–2012. (Total direct costs: \$273,000 over the two-year grant period 4/1/10 – 3/31/12.)
27. Principal Investigator (1% effort): National Science Foundation grant, "Travel Support for the Fourth International Joint IMS-ISBA Conference" (Park City, Utah), 2010–2011. (Total direct costs: \$8,000 over the one-year grant period 9/1/10 – 8/31/11.)
28. Principal Investigator (0% effort): NSA Mathematical Sciences Program grant, "Support for the Fourth International Joint IMS-ISBA Conference" (Park City, Utah), 2010–2011. (Total direct costs: \$14,980 over the one-year grant period 9/1/10 – 8/31/11.)
29. Principal Investigator (11% effort plus graduate student support): Agency for Healthcare Research and Quality (AHRQ) Contract 290-2007-10064 I2, Project ID MNE3206, "Bayesian Approaches to Indirect Comparisons," 2011-12. (Total direct costs: \$34,434 over the 7.5-month grant period 6/1/11 – 1/15/12.)

30. Principal Investigator (20% effort plus graduate student support): Medtronic Inc. Research grant, “Bayesian Methods for Medical Device Safety Data Analysis,” 2011-12. (Total direct costs: \$108,940 over the 12-month grant period 9/1/11 – 8/31/12.)
31. Principal Investigator (25% effort Year 1, 30% effort Years 2-3, 22.5% effort Year 4, 6.75% effort Year 5, plus graduate student support): National Cancer Institute grant 1-R01-CA157458-01A1, “Statistical Methods and Software for More Efficient, Ethical, and Affordable Clinical Trials,” 2012–2017. (Total direct costs: \$761,636 over the 5-year grant period 6/1/12 – 5/31/17.)
32. Principal Investigator (20% effort plus graduate student support): Eli Lilly and Company Research Award Program, “Development and Evaluation of Mixed Treatment Comparison Methods Using Bayesian Evidence Synthesis Techniques,” 2012–2014. (Total direct costs: \$190,895 over the 2-year grant period 9/1/12 – 8/31/14.)
33. Co-Investigator (11.7% effort plus graduate student support): National Institute for Allergy and Infectious Diseases grant 1-R21-AI103012-01, “Bayesian Methods and Software for Patient-Centered Network Meta-Analysis of Binary Outcomes,” Principal Investigator Dr. Haitao Chu, 2013–2015. (Total direct costs: \$267,500 over the 2-year grant period 5/15/13 – 4/30/15.)
34. Principal Investigator (5% effort plus graduate student support): Amgen Research Grant Program, “Bayesian Approaches and Software for Network Meta-analysis,” 2013–2015. (Total direct costs: \$79,189 over the 2-year grant period 9/1/13 – 8/31/15.)
35. Principal Investigator (7% effort plus graduate student support): Vistakon Research Grant Program, “Bayesian Adaptive Crossover Designs for Contact Lens Trials,” 2013–2014. (Total direct costs: \$40,000 over the 9-month grant period 9/1/13 – 5/31/14.)
36. Principal Investigator (4% effort Year 1, 3% effort Years 2-3 plus graduate student support): AbbVie Research Grant Program, “Bayesian Hierarchical Modeling for Subgroup Analysis,” 2014–2017. (Total direct costs: \$95,821 over the three-year grant period 8/25/14 – 9/30/17.)
37. Principal Investigator (5% effort plus graduate student support): Amgen Research Grant Program, “Bayesian Approaches for Extrapolation of Adult Data in Pediatric Programs,” 2015–2017. (Total direct costs: \$177,897 over the 2-year grant period 10/1/15 – 10/1/17.)
38. Principal Investigator (6% effort plus graduate student support): Genentech Research Grant Program, “Bayesian Approaches for Combining Historical and Concurrent Control Arm Data in Oncology,” 2015–2017. (Total direct costs: \$99,866 over the 2-year grant period 1/1/16 – 12/31/17.)
39. Co-Investigator (5% effort plus graduate student support): Centers for Disease Control/National Institute of Diabetes and Digestive and Kidney Diseases R18 grant, “Identifying Primary Care Practice Components Leading to Optimal Diabetes Care in Patient-Centered Medical Homes,” Principal Investigator Dr. Kevin Peterson, 2016–2021. (Total direct costs: \$445,001 over the five-year grant period 7/16/16 – 5/31/21.)
40. Co-Investigator (3% effort): National Heart Lung and Blood Institute R01 grant, “The ACCESS Trial: Data Coordinating Center,” Principal Investigators Drs. Demetris Yannopoulos and John Connett, 2016–2021. (Total direct costs: \$166,354 over the 4.5-year grant period 9/15/16 – 5/31/21.)

Department University of Connecticut, Department of Statistics, April 1988.
Seminars: Carnegie Mellon University, Department of Statistics, November 1988.
 University of Minnesota, Division of Biostatistics, January 1991.
 University of Pittsburgh, Department of Mathematics and Statistics, January 1991.
 University of Rochester, Division of Biostatistics, January 1991.
 University of Michigan, Department of Biostatistics, January 1991.

Duke University, Institute of Statistics and Decision Sciences, February 1991.
 University of Wisconsin, Departments of Statistics and Biostatistics, February 1991.
 University of Iowa, Department of Statistics and Actuarial Science, February 1991.
 University of Minnesota, Division of Environmental and Occupational Health,
 November 1991 (with T.A. Louis).
 Medical Research Council Biostatistics Unit, Cambridge, England, July 1992.
 Purdue University, Department of Statistics, November 1992.
 University of Chicago, Graduate School of Business, December 1992.
 University of Minnesota, School of Statistics, January 1993.
 Northern Illinois University, Department of Mathematics Sciences, April 1994.
 Imperial College of Science, Technology and Medicine (London, England),
 Department of Mathematics, May 1994.
 Medical Research Council Biostatistics Unit, Cambridge, England, May 1994.
 University of Nebraska, Department of Mathematics and Statistics, November 1994.
 University of North Carolina, Department of Biostatistics, April 1995.
 Duke University, Institute of Statistics and Decision Sciences, April 1995.
 Iowa State University, Department of Statistics, April 1995.
 University of Nebraska, Department of Mathematics and Statistics, May 1995.
 Centers for Disease Control and Prevention, Atlanta, GA, September 1995.
 University of California, San Diego, Department of Family and Preventive Medicine,
 December 1995.
 George Washington University, Department of Statistics, March 1996.
 Emory University, Department of Biostatistics, March 1996.
 University of Southern California, Department of Information and Operations
 Management and Center for Applied Math Sciences, April 1996.
 University of California, Los Angeles, Division of Biostatistics, April 1996.
 University of Chicago, Graduate School of Business, October 1996.
 University of Washington, Department of Biostatistics, January 1997.
 Imperial College School of Medicine at St. Mary's (London, England),
 Department of Epidemiology and Public Health, June 1997.
 University of Connecticut, Department of Statistics, September 1997.
 Winona State University, Department of Mathematics and Statistics, November 1997.
 University of Iowa, Department of Statistics and Actuarial Science, November 1997.
 University of Northern Iowa, Department of Mathematics, April 1998.
 Columbia University, Department of Biostatistics, November 1998.
 Ohio State University, Department of Statistics, November 1998.
 Purdue University, Department of Statistics, April 1999.
 Medical College of Wisconsin, Division of Biostatistics, April 1999.
 Texas A&M University, Department of Statistics, April 1999.
 University of Wisconsin, Department of Statistics, October 1999.
 Twin Cities Chapter, American Statistical Association, February 2000.
 Lancaster University (UK), Department of Mathematics and Statistics,
 September 2000.
 Boston University, Department of Mathematics and Statistics, October 2000.
 Harvard University, Department of Statistics, October 2000.
 University of Pennsylvania, Wharton School of Business, November 2000.
 Penn State University College of Medicine, Department of Health Evaluation
 Sciences, November 2000.
 Memorial Sloan-Kettering Cancer Center, Department of Biostatistics, March 2001.
 University of North Carolina, Departments of Epidemiology and Biostatistics,
 October 2001.

Imperial College School of Medicine at St. Mary's (London, England),
Department of Epidemiology and Public Health, March 2002.
Johns Hopkins University, Department of Biostatistics, May 2002.
National Cancer Institute, Division of Cancer Control and Population Sciences,
October 2002.
University of California at Irvine, Department of Statistics, November 2002.
University of Southern California, Department of Statistics, November 2002.
Los Alamos National Laboratory, Department of Statistics, January 2003.
University of Chicago, Center for Integrating Statistical and Environmental Science,
January 2003.
Brown University, Center for Statistical Sciences, April 2003.
North Carolina State University, Department of Statistics, October 2003.
University of Alabama at Birmingham, Section on Statistical Genetics,
November 2003.
University of St. Thomas, Center for Applied Mathematics, April 2004.
Simon Fraser University, Department of Statistics and Actuarial Science,
December 2004.
University of Iowa, Department of Biostatistics, February 2005.
Iowa State University, Department of Statistics, April 2005.
St. Olaf College, Department of Mathematics, Statistics, and Computer Science,
April 2005.
University of Wisconsin, Department of Statistics, April 2005.
Mayo Clinic, Department of Health Sciences Research, July 2005.
Minnesota Department of Health, Department of Community and Family Health,
January 2006.
University of Michigan, Department of Biostatistics, February 2006.
M.D. Anderson Cancer Center, Department of Biostatistics, March 2006.
University of Wisconsin, Department of Biostatistics and Medical Informatics,
March 2006.
Penn State University, Department of Statistics, April 2006.
Carnegie Mellon University, Department of Statistics, September 2006.
University of Minnesota, Department of Applied Economics, December 2006.
Louisiana State University, School of Public Health, April 2007.
McGill University, Department of Mathematics and Statistics, April 2007.
Medical University of South Carolina, Division of Biostatistics, May 2007.
Minneapolis Veteran's Administration Medical Center, Center for Chronic Disease
Outcomes Research, October 2007.
Yale University, Department of Department of Epidemiology and Public Health,
November 2007.
Columbia University, Department of Biostatistics, April 2008.
University of Minnesota, Masonic Cancer Center, June 2008.
M.D. Anderson Cancer Center, Department of Quantitative Sciences, September 2008.
Carleton College, Department of Mathematics, September 2008.
Texas A&M University, Department of Statistics, November 2008.
Rice University, Department of Statistics, November 2008.
Houston Area Chapter, American Statistical Association, November 2008.
University of Nebraska Medical Center, College of Public Health, November 2008.
Georgia Institute of Technology, Department of Statistics, March 2009.
Cornell University, Department of Statistics, April 2009.
University of Illinois at Chicago, Division of Epidemiology and Biostatistics,
School of Public Health, May 2009.

Harvard University, Department of Biostatistics, October 2009.
 Harvard University, Department of Statistics, April 2010.
 Eli Lilly and Company, Department of Oncology, November 2010.
 University of Rochester, Department of Biostatistics and Computational Biology,
 December 2010.
 Iowa State University, Department of Statistics, February 2011.
 Yale University, School of Public Health, April 2011.
 Twin Cities Chapter, American Statistical Association, October 2011.
 VA Medical Center, Evidence-Based Practice Center, November 2011.
 University of Chicago, Department of Health Studies, December 2011.
 Macalester College, Department of Mathematics, Statistics, and Computer Science,
 April 2012.
 Katholieke Universiteit Leuven, Leuven Biostatistics and Statistical Bioinformatics
 Centre, October 2012.
 University of Texas–Austin, Department of Mathematics, December 2012.
 Louisiana State University Health Sciences Center, Department of Biostatistics,
 January 2013.
 McGill University, Department of Epidemiology, Biostatistics and Occupational Health,
 February 2013.
 University of Minnesota, Center for Orphan Drug Research, March 2013.
 Brown University, Department of Biostatistics, May 2013.
 Eli Lilly and Company, Department of Biostatistics, May 2013.
 University of Minnesota, Division of Health Policy and Management, September 2013.
 University of Colorado, Department of Applied Mathematics, December 2013.
 University of Texas School of Public Health, Division of Biostatistics, January 2014.
 Vanderbilt University, Department of Biostatistics, February 2014.
 Food and Drug Administration, Center for Drug Evaluation and Research, May 2014.
 Twin Cities Chapter, American Statistical Association, November 2014.
 University of California – Los Angeles, Department of Biostatistics, February 2015.
 Amgen Inc., Biostatistical Unit, February 2015.
 University of Connecticut, Department of Statistics, November 2015.
 George Washington University, Department of Statistics, February 2016.
 University of Minnesota, Center for Orphan Drug Research, February 2016.
 AbbVie Pharmaceutical Research and Development, August 2016.
 University of St. Thomas, Department of Mathematics, February 2017.
 Roche Translational and Clinical Research Center, July 2017.
 Northern Illinois University, Department of Statistics, October 2017
 University of Chicago, Department of Public Health Sciences, November 2017.
 University of St. Thomas, Interdisciplinary Statistics Program, April 2019.
 Sanofi-Pasteur, Quantitative Sciences Webinar program, October 2021.
 L’Oreal, Research and Innovation divisional webinar, November 2021.
 Sandoz-Novartis, Biostatistics and Biosimilars webinar, November 2021.
 Ceva Animal Health, Real World Evidence webinar, February 2022.
 Food and Drug Administration, Office of Clinical Pharmacology, June 2023.
 University of Rochester, Department of Biostatistics and Computational Biology,
 November 2024.

Conference Presentations: Contributed paper: Second Annual New England Statistics Symposium,
 University of Massachusetts, April 1988.

Contributed paper: 20th Symposium on the Interface: Computing Science and Statistics, Reston, VA, April 1988.

Contributed paper: National ASA Meeting, New Orleans, August 1988.

Contributed paper and chaired contributed paper session: 21st Symposium on the Interface: Computing Science and Statistics, Orlando, FL, April 1989.

Invited paper: New England Environmental Health Conference, Storrs, CT, May 1989.

Contributed paper: National ASA Meeting, Washington, D.C., August 1989.

Invited paper: 22nd Symposium on the Interface: Computing Science and Statistics, East Lansing, MI, May 1990.

Invited paper: Workshop on Bayesian Computation via Stochastic Simulation, Ohio State University, Columbus, OH, February 1991.

Contributed paper: Fourth Valencia International Meeting on Bayesian Statistics, Peñíscola, Spain, April 1991.

Contributed paper: Twenty-Sixth Annual Actuarial Research Conference, University of Illinois at Champaign-Urbana, August 1991.

Contributed paper: National IMS Meeting, Atlanta, GA, August 1991.

Contributed paper: Workshop on Bayesian Statistics in Science and Technology, Carnegie Mellon University, Pittsburgh, PA, September 1991.

Invited discussant: 24th Symposium on the Interface: Computing Science and Statistics, College Station, TX, March 1992.

Contributed paper: 44th Seminar on Bayesian Inference in Econometrics and Statistics, Washington University, St. Louis, MO, April 1992.

Refereed contributed paper: Third International Conference on Practical Bayesian Statistics, University of Nottingham, Nottingham, England, July 1992.

Special invited paper and special contributed paper: National ASA/IMS Meeting, Boston, MA, August 1992.

Invited discussant: IMS Special Topics Meeting (Variations on the Likelihood Principle), University Park, PA, October 1992.

Invited paper: 25th Symposium on the Interface: Computing Science and Statistics, San Diego, CA, April 1993.

Invited paper: First Multinational Riverboat Conference on Bayesian Econometrics and Statistics, Basel, Switzerland – Amsterdam, The Netherlands, May 1993.

Special contributed paper and organized/chaired invited paper session: National ASA/IMS Meeting, San Francisco, CA, August 1993.

Invited paper: Second Workshop on Bayesian Statistics in Science and Technology, Carnegie Mellon University, Pittsburgh, PA, October 1993.

Contributed paper: Fifth Valencia International Meeting on Bayesian Statistics, Alicante, Spain, June 1994.

Invited paper: AMS/IMS/SIAM Joint Summer Workshop on Markov Chain Monte Carlo Methods, Mt. Holyoke College, Springfield, MA, June 1994.

Invited paper: National ASA/IMS Meeting, Toronto, Canada, August 1994.

Invited paper: Second International Workshop on Bayesian Robustness, Rimini, Italy, May 1995.

Invited paper and organized/chaired invited paper session: National IMS and Statistical Society of Canada Meeting, Montreal, Canada, July 1995.

Organized/chaired invited paper session and contributed paper: Biometric Society (ENAR) Regional Meeting, Richmond, VA, March 1996.

Special contributed paper, organized/chaired invited paper session, primary discussant for roundtable session, and co-presenter (with T.A. Louis) of one-day short course: National ASA/IMS Meeting, Chicago, IL, August 1996.

Invited paper and co-presenter (with T.A. Louis) of one-day short course: Biometric Society (ENAR) Regional Meeting, Memphis, TN, March 1997.

Invited paper: First Canadian Workshop on Spatial Epidemiology, Simon Fraser University, Vancouver, BC, May 1997.

Refereed contributed paper: Fourth International Conference on Practical Bayesian Statistics, University of Nottingham, Nottingham, England, July 1997.

Invited paper and invited panel discussant: National ASA/IMS Meeting, Anaheim, CA, August 1997.

Invited plenary talk: IMA Summer Program on Statistics in the Health Sciences, Institute for Mathematics and its Applications, Minneapolis, MN, August 1997.

Co-organized conference and contributed paper: Fourth Workshop on Case Studies in Bayesian Statistics, Carnegie Mellon University, Pittsburgh, PA, September 1997.

Invited co-presenter (with J.O. Berger) of two-day short course: Eli Lilly Research Laboratories, Indianapolis, IN, October 1997.

Invited paper: Biometric Society (ENAR) Regional Meeting, Pittsburgh, PA, March 1998.

Invited co-presenter (with T.A. Louis) of one-day short course: 30th Symposium on the Interface: Computing Science and Statistics, Minneapolis, MN, May 1998.

Invited discussant and contributed paper: Sixth Valencia International Meeting on Bayesian Statistics, Las Fuentes, Spain, June 1998.

Invited presenter of three-day short course: 23rd Summer Institute of Applied Statistics, Brigham Young University, Provo, UT, June 1998.

Invited presenter of one-day short course: VI Latin American Congress on Probability and Mathematical Statistics, Cordoba, Argentina, September 1998.

Invited co-presenter (with T.A. Louis) of three-day short course: Medtronic, Inc., Minneapolis, MN, September 1998.

Invited presenter of one-day short course: Bristol Myers-Squibb Laboratories and Princeton/Trenton and New Jersey A.S.A. chapters (joint sponsors), Lawrenceville, NJ, October 1998.

Organized invited paper session: Biometric Society (ENAR) Regional Meeting, Atlanta, GA, March 1999.

Invited presenter of one-day short course: ASA/IMS Spring Research Conference, Minneapolis, MN, June 1999.

Invited paper: Harvard School of Public Health/Schering-Plough Research Institute Workshop on Clinical Trials, Boston, MA, June 1999.

Invited paper: 31st Symposium on the Interface: Computing Science and Statistics, Schaumburg, IL, June 1999.

Invited discussant: National ASA/IMS Meeting, Baltimore, MD, August 1999.

Invited paper: First Upper Midwest Biostatistics Symposium, Rochester, MN, August 1999.

Co-organized conference and contributed paper: Fifth Workshop on Case Studies in Bayesian Statistics, Carnegie Mellon University, Pittsburgh, PA, September 1999.

Invited tutorial and organized invited paper session: Biometric Society (ENAR) Regional Meeting, Chicago, IL, March 2000.

Invited paper and invited tutorial: Sixth World Meeting of the International Society for Bayesian Analysis (ISBA 2000), Hersonissos, Crete, May 2000.

Invited paper: AMS Summer Research Conference on Bayes and Likelihood Approaches to Inference, Mt. Holyoke College, Springfield, MA, July 2000.

Invited paper and introductory overview lecture: National ASA/IMS Meeting, Indianapolis, IN, August 2000.

Invited plenary lecture: TIES/SPRUCE (The International Environmetrics Society/ Statistics in Public Resources and Utilities, and in Care of the Environment) International Conference, University of Sheffield, Sheffield, UK, September 2000.

Invited presenter of one-day short course: Searle Research and Development Laboratories, St. Louis, MO, September 2000.

Invited presenter of one-day short course: Pfizer Pharmaceuticals, Groton, CT, December 2000.

Invited co-presenter, First Annual Short Course in Bayesian Biostatistics: Applications to Clinical and Pharmaceutical Research, University of Texas, M.D. Anderson Cancer Center, January 2001.

Invited paper and organized invited paper session: Biometric Society (ENAR) Regional Meeting, Charlotte, NC, March 2001.

Invited plenary lecture: International Society for Bayesian Analysis (ISBA) Regional Meeting, Laguna Beach, CA, April 2001.

Invited paper: Chicago ASA Chapter Annual Spring Conference, Chicago, IL, May 2001.

Invited presenter of three-day short course: Alaska Department of Fish and Game, Sport Fish Division, Anchorage, AK, June 2001.

Contributed paper: Royal Statistical Society Theme Conference on Spatial Modelling, University of Glasgow, Glasgow, Scotland, July 2001.

Invited paper and invited presenter of one-day short course: National ASA/IMS Meeting, Atlanta, GA, August 2001.

Myrto Lefkopoulou Distinguished Lectureship: Department of Biostatistics, Harvard School of Public Health, September 2001.

Contributed paper: Sixth Workshop on Case Studies in Bayesian Statistics, Carnegie Mellon University, Pittsburgh, PA, September 2001.

Invited paper and organized invited paper session: National APHA Meeting, Atlanta, GA, October 2001.

Invited paper: Medtronic Statistical Conference, Minneapolis, MN February 2002.

Invited co-presenter of read paper: Ordinary meeting of the Royal Statistical Society, London, England, March 2002.

Contributed paper: Biometric Society (ENAR) Regional Meeting, Washington, DC, March 2002.

Invited presenter of one-day short course: University of Connecticut Department

of Statistics, April 2002.

Invited paper: 34th Symposium on the Interface: Computing Science and Statistics, Montreal, Canada, April 2002.

Invited paper: Seventh Valencia International Meeting on Bayesian Statistics, Tenerife, Canary Islands, Spain, June 2002.

Invited presenter of two-day short course: Medtronic, Inc., Minneapolis, MN, June 2002.

Invited discussant, National ASA/IMS Meeting, New York, NY, August 2002.

Invited paper, First Cape Cod Workshop on Monte Carlo Methods, Hyannis, MA, September 2002.

Invited tutorial: Statistical and Applied Mathematical Sciences Institute (SAMSI), Research Triangle Park, NC, September 2002.

Invited presenter of two-day short course: ASA LearnSTAT program, George Washington University, Washington, DC, October 2002.

Invited paper, Introduction and Recent Advances in Bayesian Biostatistics symposium, University of Texas, M.D. Anderson Cancer Center, January 2003.

Invited paper: Biometric Society (ENAR) Regional Meeting, Tampa, FL, March 2003.

Invited presenter of two-day short course: Boise State University, Boise, ID, May 2003.

Invited paper: SAMSI/NCAR Workshop on Spatio-Temporal Modeling, Boulder, CO, June 2003.

Invited plenary speaker: 20th Annual Summer Political Methodology Meeting, Minneapolis, MN, July 2003.

Invited paper: International Society for Bayesian Analysis (ISBA)/IMS World Meeting, Isla Verde, San Juan, Puerto Rico, July 2003.

Invited paper and Section on Bayesian Statistical Science Program Chair: National ASA/IMS Meeting, San Francisco, CA, August 2003.

Invited presenter of three-day short course: 13th Erasmus Summer Programme in Quantitative Medical Research, Rotterdam, The Netherlands, August 2003.

Invited keynote speaker: 2003 Army Conference on Applied Statistics, Napa, CA, October 2003.

Invited presenter of one-day short course: Ortho-McNeil Pharmaceutical, Raritan, NJ, November 2003.

Invited co-presenter (with P. Thall) of three-day short course: Food and Drug Administration, Gaithersburg, MD, December 2003.

Invited co-presenter (with S. Banerjee and A.E. Gelfand) of one-day short course: Biometric Society (ENAR) Regional Meeting, Pittsburgh, PA, March 2004.

Invited presenter of two-day short course: State of Minnesota Department of Natural Resources, Minneapolis, MN, May 2004.

Invited presentation: NSF Summer Institute on Uncertainty and Variability in Ecological Inference, Forecasting, and Decision Making, Duke University, Durham, NC, June 2004.

Invited presenter of one-day short course: Biometric Society (WNAR) Regional Meeting, Albuquerque, NM, June 2004.

Invited paper: National ASA/IMS Meeting, Toronto, Canada, August 2004.

Invited co-presenter (with A.E. Gelfand) of five-day short course: 14th Erasmus Summer Programme in Quantitative Medical Research, Rotterdam, The Netherlands, August 2004.

Invited presenter of half-day short course: FDA/Industry Statistics Workshop, Washington, DC, September 2004.

Invited presenter of two-day short course: ASA LearnSTAT program, George Mason University, Alexandria, VA, October 2004.

Invited plenary speaker: Seventh Regional Workshop in the Mathematical Sciences, University of Nebraska, Lincoln, NE, November 2004.

Conference organizer and chair of program committee: International Society for Bayesian Analysis (ISBA)/IMS Second World Meeting, Bormio, Italy, January 2005.

Invited presenter of two-day short course: Medtronic, Inc., Minneapolis, MN, January 2005.

Invited tutorial: Biometric Society (ENAR) Regional Meeting, Austin, TX, March 2005.

Invited presenter of two-day short course: New England Research Institute, Boston, MA, April 2005.

Invited paper: Biometric Society (WNAR) Regional Meeting, Fairbanks, AK, June 2005.

Invited presenter of half-day short course: Association of General Clinical Research Center (GCRC) Statisticians annual meeting, Minneapolis, MN, August 2005.

Invited paper and co-presenter (with S. Banerjee and A.E. Gelfand) of one-day

short course: National ASA/IMS Meeting, Minneapolis, MN, August 2005.

Invited co-presenter (with A.E. Gelfand) of five-day short course: 15th Erasmus Summer Programme in Quantitative Medical Research, Rotterdam, The Netherlands, August 2005.

Contributed paper: Eighth Workshop on Case Studies in Bayesian Statistics, Carnegie Mellon University, Pittsburgh, PA, September 2005.

Invited presenter of half-day short course: 61st Deming Conference on Applied Statistics, Atlantic City, NJ, December 2005.

Invited presenter of two-day short course: RAND Corporation, Santa Monica, CA, January 2006.

Invited plenary talk: First BUGS Users Group Meeting (“IceBUGS”), Tvärminne Zoological Station, University of Helsinki, Finland, February 2006.

Invited introductory overview lecture: Biometric Society (ENAR) Regional Meeting, Tampa, FL, March 2006.

Invited presenter of two-day short course: ASA LearnSTAT program, George Mason University, Alexandria, VA, April 2006.

Invited co-presenter (with T.A. Louis) of two-day short course: NICHD, Washington, DC, May 2006.

Refereed contributed paper: Valencia/ISBA Eighth World Meeting on Bayesian Statistics, Benidorm, Alicante, Spain, June 2006.

Invited co-presenter (with T.A. Louis) of one-day short course: XXIII International Biometric Conference (IBC2006), Montreal, Canada, July 2006.

Invited panelist: Public Meeting on Guidance for Industry and FDA Staff on the Use of Bayesian Statistics in Medical Device Clinical Trials, Rockville, MD, July 2006.

Invited co-presenter (with T.A. Louis) of one-day short course: National ASA/IMS Meeting, Seattle, WA, August 2006.

Invited co-presenter (with A.E. Gelfand) of five-day short course: 16th Erasmus Summer Programme in Quantitative Medical Research, Rotterdam, The Netherlands, August 2006.

Invited tutorial and organized invited session: Biometric Society (ENAR) Regional Meeting, Atlanta, GA, March 2007.

Invited paper: Fifth Workshop on Bayesian Inference in Stochastic Processes (BISP5), Valencia, Spain, June 2007.

Invited co-presenter (with A.E. Gelfand) of five-day short course: 17th Erasmus

Summer Programme in Quantitative Medical Research, Rotterdam, The Netherlands, August 2007.

Invited presenter of half-day short course: FDA/Industry Statistics Workshop, Washington, DC, September 2007.

Contributed paper: Ninth Workshop on Case Studies in Bayesian Statistics, Carnegie Mellon University, Pittsburgh, PA, October 2007.

Invited presenter of two-day short course: Population Studies and Training Center, Department of Sociology, Brown University, Providence, RI, November 2007.

Invited co-presenter (with T. Love) of two-day short course: 63rd Deming Conference on Applied Statistics, Atlantic City, NJ, December 2007.

Conference organizer and chair of program committee: International Society for Bayesian Analysis (ISBA)/IMS Third World Meeting, Bormio, Italy, January 2008.

Invited presenter of half-day workshop: 7th International Conference on Health Policy Statistics, Philadelphia, PA, January 2008.

Invited co-presenter and member of program committee: 2008 Bayesian Biostatistics Conference, University of Texas M.D. Anderson Cancer Center, January 2008.

Invited presenter of two-day short course: Takeda Corporation Statistical Unit, Deerfield, IL, February 2008.

Invited paper: Biometric Society (ENAR) Regional Meeting, Washington, DC, March 2008.

Invited presenter of two-day short course: Eli Lilly Research Laboratories, Indianapolis, IN, May 2008.

Invited presenter of two-day short course: Monsanto Company Technology Development, St. Louis, MO, June 2008.

Co-organizer of invited session: XXIV International Biometric Conference (IBC 2008), Dublin, Ireland, July 2008.

Invited paper: World Meeting of the International Society for Bayesian Analysis (ISBA 2008), Hamilton Island, Queensland, Australia, July 2008.

Invited paper and invited co-presenter (with T.A. Louis) of one-day short course: National ASA/IMS Meeting, Denver, CO, August 2008.

Invited presenter of two one-day ASA Traveling short courses: Las Vegas, NV and Portland, OR, October 2008.

Invited presenter of one-day short course: Food and Drug Administration (Center for Devices and Radiological Health), Washington, DC, November 2008.

Invited presenter of one-day ASA Traveling short course: Washington Statistical Society, Washington, DC, November 2008.

Invited presenter of half-day short course: 64th Deming Conference on Applied Statistics, Atlantic City, NJ, December 2008.

Invited paper: 2009 Bayesian Biostatistics Conference, University of Texas M.D. Anderson Cancer Center, January 2009.

Organizer/moderator of invited panel discussion and invited presenter of half-day short course: Biometric Society (ENAR) Regional Meeting, San Antonio, TX, March 2009.

Invited paper: 2009 Midwest Biopharmaceutical Statistics Workshop, Ball State University, Muncie, IN, May 2009.

Invited presenter of one-day short course: Food and Drug Administration (Center for Biologics Evaluation and Research), Washington, DC, June 2009.

Topic contributed paper: National ASA/IMS Meeting, Washington, DC, August 2009.

Invited presenter of “visiting statistician” short course series, Center for Applied Statistics, Washington University, St. Louis, MO, September and December 2009.

Invited participant: 2009-10 Statistical and Applied Mathematical Sciences Institute (SAMSI) Program on Space-time Analysis for Environmental Mapping, Epidemiology and Climate Change, Research Triangle Park, NC, September 2009.

Invited presenter of two-day short course: Food and Drug Administration (Center for Drug Evaluation and Research), Washington, DC, September 2009.

Invited presenter of webinar on Bayesian statistics: ASA Biopharmaceutical Section, October 2009.

Invited presenter of two-day short course: Astellas Corporation Statistical Unit, Deerfield, IL, November 2009.

Invited co-presenter (with S. Berry and P. Müller) of full-day short course: 9th International Conference on Health Policy Statistics, Washington, DC, January 2010.

Invited presenter of one-day short course: Amgen Biostatistical Unit, Thousand Oaks, CA, February 2010.

Invited co-presenter (with P. Müller) of full-day short course: Frontiers of Statistical Decision Making and Bayesian Analysis: A Conference in Honor of James O. Berger, San Antonio, TX, March 2010.

Invited paper: Society for Clinical Trials Annual Meeting, Baltimore, MD, May 2010

Invited discussant: Valencia/ISBA Ninth World Meeting on Bayesian Statistics, Benidorm, Alicante, Spain, June 2010.

Invited paper and invited co-presenter (with D. Berry, S. Berry, and J.J. Lee) of one-day short course: National ASA/IMS Meeting, Vancouver, BC, August 2010.

Invited presenter of one-day short course: Centers for Disease Control and Prevention, Atlanta, GA, September 2010.

Invited panelist and presenter of one-day short course: Merck Pharmaceuticals, Philadelphia, PA, October 2010.

Invited co-presenter (with S. Berry) of two-day short course: 66th Deming Conference on Applied Statistics, Atlantic City, NJ, December 2010.

Conference organizer and chair of program committee: International Society for Bayesian Analysis (ISBA)/IMS Fourth World Meeting, Park City, Utah, January 2011.

Invited paper, tutorial, and leader of luncheon discussion: Biometric Society (ENAR) Regional Meeting, Miami, FL, March 2011.

Invited presenter of plenary lecture and full-day short course: 25th Annual New England Statistics Symposium, Storrs, CT, April 2011.

Invited co-presenter (with L. Hatfield) of two-day short course: Centers for Disease Control and Prevention, Atlanta, GA, June 2011.

Invited co-presenter (with D. Berry, S. Berry, and J.J. Lee) of one-day special invited short course and topic contributed paper: National ASA/IMS Meeting, Miami Beach, FL, August 2011.

Invited presenter of one-day short course: International Statistical Institute World Statistics Conference, Dublin, Ireland, August 2011.

Invited co-presenter (with S. Berry) of half-day short course: FDA/Industry Statistics Workshop, Washington, DC, September 2011.

Invited co-presenter (with L. Hatfield) of two-day short course: Yale Center for Analytical Sciences, Yale University, New Haven, CT, November 2011.

Invited presenter of three-day lecture series: Swiss Probability and Statistics Conference, Les Diablerets, Switzerland, February 2012.

Invited paper and short course (with S. Berry): Biometric Society (ENAR) Regional Meeting, Washington, DC, April 2012.

Invited presenter of half-day short course: Frontiers in Biostatistical Methods conference, Cerner Corporation Vision Center, Kansas City, MO, April 2012.

Invited paper: World Meeting of the International Society for Bayesian Analysis (ISBA 2012), Kyoto, Japan, June 2012.

Invited co-presenter (with L. Hatfield) of one-day short course and topic contributed paper: National ASA/IMS Meeting, San Diego, CA, July 2012.

Invited paper: FDA/Industry Statistics Workshop, Washington, DC, September 2012.

Invited co-presenter (with L. Hatfield) of two-day short course: Erasmus University Department of Biostatistics, Rotterdam, The Netherlands, October 2012.

Invited presenter of two-day short course: Vistakon (Johnson & Johnson Vision Care), Jacksonville, FL, December 2012.

Invited paper and invited co-presenter (with L. Hatfield) of tutorial: Biometric Society (ENAR) Regional Meeting, Orlando, FL, March 2013.

Invited presenter of one-day ASA Traveling courses: Northeastern Illinois and Central Indiana ASA Chapters, Chicago, IL and Indianapolis, IN, May 2013.

Invited plenary speaker: Southern Regional Council on Statistics 2013 Summer Research Conference, Montgomery Bell State Park (Nashville, TN), June 2013.

Invited paper: DIA 2013, 49th Annual Meeting, Boston, MA, June 2013.

Invited presenter of one-day ASA Traveling course: Boston ASA Chapter, Cambridge, MA, June 2013.

Organizer/chair of invited session and topic contributed paper: National ASA/IMS/SSC Meeting, Montreal, Quebec, Canada, August 2013.

Organizer/chair of invited session: FDA/Industry Statistics Workshop, Washington, DC, September 2013.

Organizer/chair of invited session and invited co-presenter (with L. Hatfield) of half-day short course: 10th International Conference on Health Policy Statistics, Chicago, IL, October 2013.

Invited presenter of one-day ASA Traveling course: Nebraska ASA Chapter, Lincoln, NE, November 2013.

Invited keynote speaker: Biostatistics and Research Decision Sciences (BARDS) 75th Anniversary Symposium, Merck Research Labs, Upper Gwynedd, PA, November 2013.

Invited presenter of one-day short course: Forest Research Labs, Jersey City, NJ, November 2013.

Conference co-organizer and member of program committee: International Society for Bayesian Analysis (ISBA)/IMS Fifth World Meeting, Chamonix-Mont-Blanc, France, January 2014.

Invited presenter of one-day short course: Department of Biostatistics, Vanderbilt University, Nashville, TN, February 2014.

Invited paper and invited presenter of one-day short course: Biometric Society (ENAR) Regional Meeting, Baltimore, MD, March 2014.

Invited presenter of one-day ASA Traveling course: Cleveland ASA Chapter, Independence, OH, April 2014.

Invited presenter of two-day short course: AbbVie Pharmaceutical Research and Development, North Chicago, IL, April 2014.

Plenary paper: Frontiers of Hierarchical Modeling in Observational Studies, Complex Surveys and Big Data: A Conference Honoring Malay Ghosh, College Park, MD, May 2014.

Invited paper and invited co-presenter (with K.L. Price) of half-day short course: DIA 2014, 50th Annual Meeting, San Diego, CA, June 2014.

Organizer of invited session: World Meeting of the International Society for Bayesian Analysis (ISBA 2014), Cancun, Mexico, July 2014.

Invited co-presenter (with A. Gelfand and S. Banerjee) of one-day short course, organizer/chair of invited session, and topic contributed paper: National ASA/IMS Meeting, Boston, MA, August 2014.

Invited paper: FDA/Industry Statistics Workshop, Washington, DC, September 2014.

Invited presenter of half-day short course: Takeda Global AnSci Statistics Summit, Takeda Pharmaceutical, Cambridge, MA, October 2014.

Invited presenter of two-day short course: Traveler's Insurance Corporation, Hartford, CT, November 2014.

Invited presenter of half-day short course: 70th Deming Conference on Applied Statistics, Atlantic City, NJ, December 2014.

Invited presenter of half-day short course: Food and Drug Administration (Center for Drug Evaluation and Research), Silver Spring, MD, February 2015.

Invited paper: Biometric Society (ENAR) Regional Meeting, Miami, FL, March 2015.

Conference co-organizer and invited paper: Conference in Honor of Alan Gelfand's 70th Birthday, Durham, NC, April 2015

Invited presenter of three-day short course: Roche Translational and Clinical Research Center, New York, NY, May-June 2015

Invited paper: NSF Conference on Statistics for Complex Systems, Madison, WI, June 2015

Topic contributed paper: National ASA/IMS Meeting, Seattle, WA, August 2015.

Invited presenter of one-day ASA Traveling courses: Philadelphia and Princeton/Trenton ASA Chapters, Philadelphia, PA and Trenton, NJ, September 2015.

Invited paper: Statistics Making a Difference: A Conference in Honor of Tom Louis' 70th Birthday, Baltimore, MD, October 2015.

Invited paper: 11th International Conference on Health Policy Statistics, Providence, RI, October 2015.

Invited presenter of half-day short course: First Annual Twin Cities ASA Chapter Fall Research Conference, Mayo Clinic, Rochester, MN, October 2015.

Conference co-organizer and program committee: International Society for Bayesian Analysis (ISBA)/IMS Sixth World Meeting, Lenzerheide, Switzerland, January 2016.

Invited paper: Biometric Society (ENAR) Regional Meeting, Austin, TX, March 2016.

Invited special topic paper: World Meeting of the International Society for Bayesian Analysis (ISBA 2016), Sardinia, Italy, June 2016.

Invited paper: National ASA/IMS Meeting, Chicago, IL, August 2016.

Invited presenter of one-day short course: The Advances in Research Designs Symposium (TARDIS) 2016, University of North Texas, Denton, TX, September 2016.

Invited paper: ASA Biopharmaceutical Section Regulatory-Industry Statistics Workshop, Washington, DC, September 2016.

Invited paper: Duke Margolis-FDA Workshop on Exploring Novel Statistical Methods for Rare Disease and Small Population Clinical Trials, Washington, DC, October 2016.

Invited presenter of one-day short course: Novartis Pharmaceuticals, East Hanover, NJ, November 2016.

Invited presenter of one-day short course: Mallinckrodt Pharmaceuticals, Hampton, NJ, February 2017.

Invited paper: National ASA/IMS Meeting, Baltimore, MD, August 2017.

Invited paper: ASA Biopharmaceutical Section Regulatory-Industry Statistics Workshop, Washington, DC, September 2017.

Invited paper: BiostatMCW 2017 Conference on Biostatistics in the Modern Computing Era, Medical College of Wisconsin, Milwaukee, WI, September 2017.

Organizer/chair of two invited sessions: ASA Symposium on Statistical Inference (the “*p*-value meeting”), Bethesda, MD, October 2017.

Organizer of invited session: Biometric Society (ENAR) Regional Meeting, Atlanta, GA, March 2018.

Organizer of invited session: World Meeting of the International Society for Bayesian Analysis (ISBA 2018), Edinburgh, Scotland, June 2018.

Co-organizer of invited session: ASA Biopharmaceutical Section Regulatory-Industry Statistics Workshop, Washington, DC, September 2018.

Invited paper: Joint Statistical Meetings, Philadelphia, PA, August 2020.

Contributed paper: Biometric Society (ENAR) Regional Meeting, Online (due to COVID pandemic), March 2021.

Contributed paper: Biometric Society (ENAR) Regional Meeting, Houston, TX, March 2022.

Organizer/chair of two invited sessions: Midwest Biopharmaceutical Workshop, Indianapolis, IN, June 2022.

Contributed paper: International Biometric Society (IBS) World Meeting, Riga, Latvia, July 2022.

Invited paper: Phacilitate Advanced Therapies Week, Miami Beach, FL, January 2023.

Organizer/chair of invited paper session: Biometric Society (ENAR) Regional Meeting, Nashville, TN, March 2023.

Organizer/chair of invited session, short course instructor, and organizing committee member: Midwest Biopharmaceutical Statistics Workshop, Indianapolis, IN, May 2023.

Organizer/chair of topic contributed paper session: National ASA/IMS Meeting, Toronto, ON, August 2023.

Organizer/chair of invited paper session: ASA Biopharmaceutical Section Regulatory-Industry Statistics Workshop, Rockville, MD, September 2023.

Invited paper, organizer/chair of plenary sessions and organizing committee member: Bayesian Biostatistics (BAYES2023) conference, Utrecht, Netherlands, October 2023.

Invited presenter of half-day short course: 79th Deming Conference on Applied Statistics, Philadelphia, PA, December 2023.

Invited paper and organizer of invited paper session: Biometric Society (ENAR) Regional Meeting, Baltimore, MD, March 2024.

Invited paper: Duke Industry Statistics Symposium, Durham, NC, April 2024.

Organizer/chair of invited session, invited speaker, and organizing committee member: Midwest Biopharmaceutical Statistics Workshop, Indianapolis, IN, June 2024.

Organizer/chair of topic contributed paper session: National ASA/IMS Meeting, Portland, OR, August 2024.

Chair of parallel paper session: ASA Biopharmaceutical Section Regulatory-Industry Statistics Workshop, Rockville, MD, September 2024.

Organizer/chair of plenary sessions and organizing committee member: Bayesian Biostatistics (BAYES2024) conference, Bethesda, MD, October 2024.

Contributed paper: Biometric Society (ENAR) Regional Meeting, New Orleans, LA, March 2025.

Organizer/chair of invited paper session: Duke Industry Statistics Symposium, Durham, NC, April 2025.

Invited paper and invited short course presenter: International Symposium on Modern Statistics and Biostatistics (SYMSTAT2025), University of Pretoria, Future Africa Campus, Pretoria, South Africa, July 2025.

Organizer/chair of plenary sessions and organizing committee member: Bayesian Biostatistics (BAYES2025) conference, Utrecht, Netherlands, October 2025.

Organizer/chair of topic contributed paper session: National ASA/IMS Meeting, Nashville, TN, August 2025.

Course

Instruction:

At the University of Nebraska:

Algebra and Trigonometry (Fall 1983, Spring 1984)

Calculus I and II (Fall 1984, Spring 1985)

At the University of Connecticut:

Honors Elementary Mathematical Statistics (Spring 1987, Fall 1987)

At Carnegie-Mellon University:

Advanced Data Analysis 1 and 2 (Fall 1989, Spring 1990)

Regression Analysis (Fall 1989, Fall 1990)

Applied Bayesian Methods (Spring 1991)

Linear Models and Experimental Design (Spring 1991)

At the University of Minnesota:

Introduction to the Mathematical Foundation of Biostatistics (Springs 1992–93)

Bayes and Empirical Bayes Methods (Winters 1992–96)

Statistical Computing II (Winters 1994–99)

Advanced Bayesian Methods (Springs 1997–98, Winter 1999)

Bayesian Decision Theory and Data Analysis (Springs 2000–04)

Spatial Biostatistics (Springs 2002–04, Falls 2004–06, Spring 2008)

Biostatistics I (Falls 2004–06)

Introduction to Bayesian Analysis (Springs 2007–12)

Topics in Hierarchical Bayesian Analysis (Summers 2012–17)

Research Skills in Biostatistics (Falls 2012–16)

PhD Thesis Advising:

1. Mary Kathryn Cowles, “Practical Issues in Gibbs Sampler Implementation with Application to Bayesian Hierarchical Modeling of Clinical Trial Data,” June 1994. (Finalist for the 1994 Van Ryzin Prize, Biometrics Society – ENAR)
2. Hong (Amy) Xia, “Bayesian Spatio-Temporal Hierarchical Models for Mapping Disease Rates,” December 1997.
3. Andrew S. Mugglin, “Fully Model-Based Approaches for Spatially Misaligned Data,” January 1999. (Honorable Mention, 1999 Savage Thesis Award Competition)
4. Li Zhu, “Hierarchical Modeling of Spatio-Temporally Misaligned Data,” August 2000.

5. Murali Haran, “Efficient Perfect and MCMC Sampling Methods for Bayesian Spatial and Components of Variance Models,” May 2003. (Co-advised by Prof. Luke Tierney, School of Statistics)
 6. Margaret Short, “Hierarchical Spatial Models and Spatial CDFs for Cancer Control and Epidemiology,” October 2003. (Winner of the 2003 Minority Health Statistics Dissertation Fellowship from the Center for Research in Health Statistics)
 7. Xiaoping Jin, “Multivariate Areal Modeling with Application to Mapping Multiple Disease Data,” June 2005.
 8. Haolan Lu, “Bayesian Areal Wombling, with Application to Cancer Boundary Analysis,” July 2005.
 9. Haijun Ma, “Bayesian Hierarchical Boundary Analysis for Areal Public Health Data,” August 2006.
 10. Shengde Liang, “Bayesian Geostatistical and Point Process Models for Cancer Data with Spatial and Non-Spatial Covariates,” September 2008.
 11. Brian Hobbs, “Bayesian Hierarchical Modeling For Adaptive Incorporation Of Historical Information In Clinical Trials,” August 2010. (Winner of the 2010 Van Ryzin Prize, Biometrics Society – ENAR)
 12. Lindsay Renfro, “Bayesian Evaluation and Adaptive Trial Design for Surrogate Time-to-Event Endpoints in Clinical Trials,” March 2011.
 13. Laura Hatfield, “Bayesian Hierarchical Joint Modeling for Longitudinal and Survival Data,” August 2011.
 14. Wei Zhong, “Bayesian Adaptive Designs in Phase I/II Clinical Trials,” August 2012. (Co-advised by Prof. Joe Koopmeiners, Division of Biostatistics)
 15. Harrison Quick, “Spatiotemporal Gradient Modeling with Applications,” July 2013. (Co-advised by Prof. Sudipto Banerjee, Division of Biostatistics)
 16. Hwanhee Hong, “Hierarchical Bayesian Methods for Multiple Outcomes in Mixed Treatment Comparisons,” August 2013.
 17. Thomas Murray, “Hierarchical Models that Flexibly Incorporate Supplemental Information for Settings with Unknown Nonlinear Functions,” August 2014.
 18. Hong Zhao, “Detecting Inconsistency and Using Non-randomized studies in Research Synthesis,” June 2016.
 19. Patrick Schnell, “Bayesian Methods for Subpopulation Identification in Clinical Trials,” May 2017.
 20. Cynthia Basu, “Commensurate Prior Methods in Rare and Pediatric Disease Settings,” July 2017.
- Co-advisor for Erin Conlon (1999; advisor Lance Waller), Fujun Wang (2002; advisor Melanie Wall), Freda Cooner (2006; advisor Sudipto Banerjee), Luping Zhao (2008; advisor Tim Hanson), Ran Li (2011; advisor Baolin Wu), and Jing Zhang (2014; advisor Haitao Chu).
 - PhD final exam committee member for numerous additional students in biostatistics, statistics, environmental health, and health informatics, and advisor for 17 MS projects in biostatistics, 15 of which culminated in published papers in refereed journals.

Service *For the Department of Statistics, Carnegie Mellon University:*
Activities: Computer committee, 1989–91
 Seminar committee, 1989–91 (chair, 1990–91)
 Library committee, 1989–91
 For the Division of Biostatistics, University of Minnesota:
 Computer committee, 1991–92, 2003–05

Examination committee, 1992–97, 2005–2009 (chair, 1993–97, 2005–2009)
 Seminar committee, 1992–95, 2002–05 (chair, 1992–94, 2002–03, 2004–05)
 Research management committee, 1993–95, 1999–2001
 Curriculum committee, 1995–97
 Faculty search committee, 1995, 1998, 2002, 2003, 2005, 2007, 2010
 (chair, 1995, 1998, 2005, 2010)
 Faculty Computing Coordinator, 1995–2002
 Admissions committee, 1998–99, 2007–2010
 Student recruitment committee, 1998–2000, 2003, 2005 (chair, 2003)
 Library committee, 1998–2000 (chair, 1998–2000)
 Division Head, 2010–

For the School of Public Health, University of Minnesota:

Faculty consultative committee, 1991–93
 Computer network committee, 1992, 1998
 Training Resource Center organizing and management committee, 1998–2002
 Research committee, 1994–98
 Recognition, Awards, and Honors committee, 1998–2002, 2008–09 (chair, 1999–2001)
 Incentive Task Force, 1999–2000
 Appointment, Promotion, and Tenure Policy ad hoc review committee, 1992
 Appointment, Promotion, and Tenure committee, 1995–97, 1998, 2000–01, 2002–06
 Strategic Facility Planning coordinating committee, 2002
 Educational Policy committee, 2007

For the Graduate School, University of Minnesota:

Grant-in-Aid review committee, 2007–2010

**Professional
Activities:**

Member, American Statistical Association, 1986 –
 Member, Institute of Mathematical Statistics, 1989 –
 Member, Society of Actuaries Section on Education and Research, 1990–1995
 Member, Biometric Society, 1991 –
 Member, ASA Committee on Ethics, 1991–1993
 Member, ASA Section on Bayesian Statistical Science Nominating Committee, 1995
 Ordinary member, International Statistical Institute, 1995 –
 Member, ENAR Regional Advisory Board (RAB), 2000–2003
 Member, The International Environmetric Society (TIES), 2002–
 Member, International Society for Bayesian Analysis (ISBA), 2002–
 Member, ENAR Regional Committee (RECOM), 2008–2010
 Member, Data and Safety Monitoring Board (DSMB), Angel Medical Systems
 in Cardiology, 2008–2013
 Member, Data and Safety Monitoring Board (DSMB), St. Jude Medical, 2013–

 Member of the editorial board, *Statistics in Medicine*, 1994 – 1996
 Associate Editor, *Journal of the American Statistical Association*, 1996 – 2002
 Member of the organizing and editorial board, *Case Studies in Bayesian Statistics*
 biannual conference series, 1996–2000
 Member of the Project Oversight Group, Society of Actuaries Committee on
 Knowledge Extension Research, 1996
 Member of the editorial board, *Bayesian Statistics 6* and *Bayesian Statistics 7*
 (Valencia volumes), 1998, 2002
 Member of the editorial board, *Bayesian Methods with Applications to Science,
 Policy and Official Statistics* (ISBA 2000 volume), 2000

Member, NIH Social Sciences, Nursing, Epidemiology and Methods (SNEM-5) Study Section, 1999–2003

Member, NIH Biostatistical Methods and Research Design (BMRD) Study Section, 2003–05

Editor-in-Chief, *Bayesian Analysis* (official journal of the International Society for Bayesian Analysis), 2007–09.

Member, NIH R13 Conference Grants Special Emphasis Panel, 2008, 2011–

Member, NIH ARRA Challenge Grants initial review panel, 2009

Member, P-01 Project External Advisory Committee, Division of Biostatistics, Harvard School of Public Health, 2010–2015

Member, NIH Biostatistical Methods and Research Design (BMRD) Member-Conflict Review Panel, 2012–2014

Member, American Statistical Association Committee on Statistical Significance and *P*-Values, 2015–2016 (statement published in *The American Statistician*, May 2016)

Chair, NIH Biomedical Computer and Health Informatics Study Section Member-Conflict Review Panel, June 2017

Organizing committee member, ASA Symposium on Statistical Inference, 2017

Organizing committee member, ISBA 2018 World Meeting, 2017–18

Member, NIH R43/R44 Small Business Special Emphasis Panel on Neuroscience Assay, Diagnostics and Animal Model Development, 2018–

Associate editor, *The American Statistician* special issue arising from the ASA Symposium on Statistical Inference, 2018

Member, COPSS R.A. Fisher Lecture and Award Committee, 2000–02

Member, APHA Spiegelman Award selection committee, 2001–03 (chair, 2003)

Member, ISBA Leonard J. Savage Thesis Award selection committee, 2001–02

Elected program chair, ASA Section on Bayesian Statistical Science, 2001–03

Member, ENAR Education Advisory Committee, 2003–04

Elected member, ISBA Board of Directors, 2004–06

Editorial board member, Texts in Statistical Science series, Chapman and Hall publishers, 2004–2010

ISBA Nominations Committee, 2011–12

Founding Member, Bayesian Scientific Working Group, Drug Information Association, 2011–

Elected section chair, ASA Section on Bayesian Statistical Science, 2012–14

IBS Representative Council Member for ENAR, 2014–17

Founding Member, North American Biostatistics Chairs Working Group, 2015– (chair, 2016–17)

Book reviewer, Springer-Verlag, Chapman and Hall, and John Wiley publishers

Proposal referee, National Science Foundation, Statistics and Probability Program, Australian Research Council, Large Research Grants Program, Wellcome Trust (U.K.) Grant Program, Multidisciplinary Pilot Project Program, SUNY–Buffalo, Los Alamos National Laboratory Directed Research and Development Program, the Engineering and Physical Sciences Research Council (UK), the Health Effects Institute, the Carleton College Special Endowment Fund, the Swiss National Science Foundation (SNSF), and the Banff International Research Station (BIRS).

Manuscript referee:

Ambulatory Child Health

American Journal of Epidemiology

American Mathematical Monthly
The American Statistician
The Annals of Statistics
The Annals of Applied Statistics
Bayesian Analysis
Bayesian Statistics 5 and 6 (Valencia volumes)
Bernoulli
Biometrics
Biometrika
Canadian Journal of Statistics
Chance
Clinical Trials
Communications in Statistics
Computational Statistics and Data Analysis
Computers and Operations Research
Environmental and Ecological Statistics
Environmetrics
European Journal of Epidemiology
Geographical Analysis
Insurance: Mathematics and Economics
International Statistical Review
Journal of Aerosol Science
Journal of Agricultural, Biological, and Environmental Statistics
Journal of the American Statistical Association
Journal of Biopharmaceutical Statistics
Journal of Business and Economic Statistics
Journal of Clinical Epidemiology
Journal of Computational and Graphical Statistics
Journal of Econometrics
Journal of Official Statistics
Journal of the Royal Statistical Society, Series B and C
Journal of Statistical Computation and Simulation
Management Science
Medical and Pediatric Oncology
Nature Reviews Drug Discovery
North American Actuarial Journal
PLOS ONE
Psychometrika
Scandinavian Journal of Statistics
Science
Scholarpedia
Seminar on Bayesian Inference in Econometrics and Statistics
Statistica Neerlandica
Statistica Sinica
Statistical Methods in Medical Research
Statistical Papers
Statistical Science
The Statistician
Statistics and Computing
Statistics and Probability Letters
Statistics in Medicine

Systematic Reviews
Technometrics
Test (Trabajos de Estadística)
Therapeutic Innovation & Regulatory Science
Transactions of the Society of Actuaries

Selected Emory University, Rollins School of Public Health (1996–8)
Consulting: Fred Hutchinson Cancer Research Center (1997)
Eli Lilly Research Laboratories (1997, 2007, 2009–2014)
Medtronic, Inc. (1998–9, 2001–2, 2005, 2007–2014)
Minnesota Department of Health (1999–2008)
Sulzer Spine-Tech, Inc. (2000)
ALTEC Solutions, Inc. (2000)
HealthPartners Research Foundation (2001)
Regulatory and Clinical Research Institute, Inc. (2002–05)
Amgen, Inc. (2004, 2008–2010, 2013–)
Ortho-McNeil Pharmaceutical (2004–05)
Louisiana State University School of Public Health (2007–2009, 2013)
Astellas Corporation (2009–10)
Vistakon (Johnson & Johnson) Vision Care (2012–14)
AbbVie Pharmaceutical Research and Development (2014–2017)
Roche-Genentech Pharmaceuticals (2015–2018)
Vireo Health/Minnesota Medical Solutions (2016–2017)
Minnesota Department of Health, Office of Medical Cannabis (2017)
Sanofi Pharmaceuticals (2018–2019, 2020–)
Kognate, Inc. (2019)
ExploreData (2019)
Synergy Med (2019–2020)
Boston Scientific (2019–2021)
ACI Clinical (2020–2021)
Cencora-PharmaLex (2020–present)