

STEPHEN L. RATHBUN

CURRICULUM VITAE

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PERSONAL: Born May 16, 1954 at Bogalusa, Louisiana; married; U.S. Citizen

EDUCATION:

Iowa State University, Ames, Iowa

Ph.D.: Statistics, August, 1990

Thesis Title: Estimation and Statistical Inference for Space-Time Point Processes

Iowa State University, Ames, Iowa

M.S.: Statistics, August 1987

Creative Component: An Illustrated Review of Methods for the Analysis of Spatial Point Patterns and Marked Point Patterns

Florida State University, Tallahassee, Florida

M.S.: Biology, June 1980

Thesis Title: Latitudinal Variation in the Spatial Patterns of Tree Species

Florida State University, Tallahassee, Florida

B.S.: Biology, June 1976

Major: Biology Minor: Chemistry, Mathematics

EXPERIENCE:

2010-present

Professor of Biostatistics, University of Georgia

2005-2010

Associate Professor of Biostatistics, University of Georgia

2007-2008

Interim Head, Department of Epidemiology and Biostatistics,
University of Georgia

2001-2005

Associate Professor of Statistics, Pennsylvania State University

1997-2001

Director Statistical Consulting Center, University of Georgia

1996-2001

Associate Professor of Statistics, University of Georgia

1990-1996

Assistant Professor of Statistics, University of Georgia

Summers 1991-1993

Visiting Assistant Professor, Oregon State University

Summer 1988

Research Assistant, Department of Botany, Louisiana State University

1985-1990

Research Assistant, Department of Statistics, Iowa State University,

1979-1985

Research Assistant, Tall Timbers Research Station, Tallahassee,

AWARDS AND HONORS:

Phi Beta Kappa

Mu Sigma Rho

PACE Award, Iowa State University, 1985-1986

Shell Fellowship, 1989

Best Student Paper, 1990 Iowa Chapter Meetings of the American Statistical Association, Ames, Iowa

Research Excellence Award, Iowa State University, 1990

Excellence in Research Award, College of Public Health, University of Georgia, 2009.

PROFESSIONAL AFFILIATIONS:

American Statistical Association

PROFESSIONAL ACTIVITIES:

Manuscript referee: Ecology, Journal of Biogeography, Biometrics, Annals of Applied Probability, Communications in Statistics, Genetics, Journal of the American Statistical Association, The American Statistician, Landscape Ecology, Journal of Statistical Planning and Inference, Journal of Ecological and Environmental Statistics, Technometrics, Annals for the Institute of Statistical Mathematics. Journal of Computational and Graphical Statistics, Journal of Economic and Business Statistics, Journal of Agricultural, Biological, and Environmental Statistics, Journal of Computational and Graphical Statistics, Mathematical Geology, Journal of Mathematical Imaging and Vision, Environmetrics, International Journal of Health Geographics, Biometrika, Journal of Applied Statistics, Annals of Applied Statistics, Biostatistics, American Statistician, Journal of Time Series Analysis.

Statistical Reviewer: Estuarine Review Group in the Environmental Monitoring and Assessment Program (EMAP), sponsored by the Environmental Protection Agency and the American Statistical Association, 1991-1992.

Member, American Statistical Association Committee on Environmental Monitoring and Assessment Program, 1994-1996.

Reviewer: Mathematical Reviews, National Science Foundation Grant Proposals.

Regional Advisory Board, Eastern North American Region, Biometric Society, 1996-1999.

Peer Review Panel for the Water and Watersheds competition, National Science Foundation/Environmental Protection Agency Partnership for Environmental Research, 1996.

Statistical Review Panel, Fisheries Assessment, Florida Marine Research Institute, 1999-2001.

Associate Editor, *Environmental and Ecological Statistics*, 2004-present.

Representative of the Eastern North American Region/Western North American Region of the Biometric Society to the American Association for the Advancement of Science Section on Geology and Geography, 2005-2007.

Program Committee, 2009 Meeting of the Eastern North American Region (ENAR) of the International Biometric Society, 2008-2009.

Distinguished Achievement Awards Committee, Environmetrics Section of the American Statistical Association, 2007-2010 (chair, 2009-2010).

Member, Environmental Protection Agency Science Advisory Board (SAB) Panel to conduct an independent review “Technical Support Document: National mercury Assessment Supporting the Appropriate and necessary Finding for Coal and oil-Fired Electric Generating Units.”, 2011

Research

GRANTS (awarded):

UGA Faculty Research Grant. 1991. \$3,500.

UGA Faculty Overseas Travel Grant. 1993. \$950.

Review and evaluation of environmental monitoring designs for the Carolina Province of EMAP-Estuaries. Sponsored by South Carolina Wildlife and Marine Resources Department. 1992-1993. \$10,000.

Computing equipment for function estimation and inference for stochastic processes. NSF equipment grant DMS-9406979. 1994-1995. \$22,078.80.

Statistical issues in regional environmental monitoring. National Biological Service grant USDI RF NBS#29. 1995-1998. \$67,881.00.

Everglades habitat assessment and statistical modeling. USDI, National Forest Service. 1998-1999. \$25,174.00.

Distribution and large-scale habitat association of snowshoe hares in Pennsylvania. Pennsylvania Game Commission - State Wildlife Grants. 2003-2004. \$80,000.

Scientific computing research environments for the mathematical sciences. National Science Foundation DMS-0322673. 2003-2004. \$65,347.

A Probability-Sampling Framework for Modeling the Impact of Time-Varying Covariates on Event History Data. National Science Foundation SES-0720195. 2007-2011, \$236,240.

Probability-Sampling Framework for Modeling the Impact of Time-Varying Covariates: Ecological Momentary Assessment of Smoking. National Institutes of Health 1R01DA024687-01, 2008-2012, \$336,899.

SCORE Biostatistics - Schistosomiasis Consortium for Operational Research and Evaluation, Subcontract from Bill and Melinda Gates Foundation Grant (D. Colley, PI), \$136,015.

Advancing Real Time Data Collection: Adaptive Sampling and Innovative Technology. National Institutes of Health RO1HL107370, 2011-2016. \$699,897.00 (Lora Burke, Co-PI, Rathbun, Co-PI).

Psychological predictors of compensatory responses to an exercise intervention. National Institutes of Health R21HL113742, 2012-2014. \$408,375.00 (Michael Schmidt, PI).

Community transmission of tuberculosis in urban Africa. National Institutes of Health RO1AI093856-01, 2012-2017. \$559,224.00 (Christopher Whalen, PI).

Potential fire mediated flux to air and inhalation exposure to radionuclides from contaminated forest wetlands at the Savannah River Site, SC. United States Department of Agriculture, 2013-2015, \$34,935.00 (Luke Naeher, PI).

PUBLICATIONS:

Appeared

1. James, F.C., and S. Rathbun. 1981. Rarefaction, relative abundance, and diversity of avian communities. *The Auk* **98**: 785-800.
2. Karlin, A.A., S.I. Guttman, and S.L. Rathbun. 1984. Spatial autocorrelation analysis of heterozygosity and geographic distribution in populations of *Desmognathus fuscus* (Amphibia: Plethodontidae). *Copeia* **1984**: 341-354.
3. Platt, W.J., G.W. Evans, and S.L. Rathbun. 1988. The population dynamics of a long-lived conifer (*Pinus palustris*). *The American Naturalist* **131**: 491-525.
4. Strong, D.R., M.F. Antolin, and S. Rathbun. 1990. Variance and patchiness in rates of population change: a planthopper's case history. In B. Shorrocks and I. Swingland (eds.), *Living in a Patchy Environment*, (pp. 75-90). Oxford: Oxford University Press.
5. Rathbun, S.L. 1991. Parameter estimation for a nonstationary Cox process whose directing intensity is a Markov random field. *Proceedings of the Section on Statistics and the Environment, American Statistical Association*, American Statistical Association Washington, D.C., pp. 86-95.

6. Rathbun, S.L. 1993. Modeling marked spatio-temporal point patterns. *Bulletin of the International Statistical Institute* **55**: 379-396.
7. Meier, A.J., Noble, R.E., and Rathbun, S.L. 1993. Population status and notes on the biology and behavior of the St. Croix ground lizard on Green Cay. *Caribbean Journal of Science* **29**: 147-152.
8. Rathbun, S.L., and Cressie, N. 1994. Asymptotic properties of estimators for the parameters of spatial inhomogeneous Poisson point processes. *Advances in Applied Probability* **26**: 122-154.
9. Rathbun, S.L., and Cressie, N. 1994. A space-time survival point process for a longleaf pine forest in southern Georgia. *Journal of the American Statistical Association* **89**: 1164-1174.
10. Platt, W.J., and Rathbun, S.L. 1995. Population dynamics of longleaf pine. *Proceedings of the Eighteenth Tall Timbers Fire Ecology Conference*, Tall Timbers Research Station, Tallahassee, Florida, pp. 275-297.
11. Rathbun, S.L. 1996. Estimation of Poisson intensity using partially observed concomitant variables. *Biometrics* **52**, 226-242.
12. Rathbun, S.L. 1996. Asymptotic properties of the maximum likelihood estimator for spatio-temporal point processes. *Journal of Statistical Planning and Inference* **51**, 55-74.
13. Conroy, M.J., Anderson, J.E., Rathbun, S.L., and Krementz, D.G. 1996. Statistical inference on patch-specific survival and movement rates from marked animals. *Journal of Ecological and Environmental Statistics* **3**, 99-118.
14. Rathbun, S.L. 1998. Review of "Environmental Statistics and Data Analysis," by W. Ott. *Journal of the American Statistical Association* **93**, 402-403.
15. Rathbun, S.L. 1998. Spatial modeling in irregularly shaped regions: kriging estuaries. *Environmetrics* **9**, 109-129.
16. Burke, V.J., Rathbun, S.L., Bodie, J.R., and Gibbons, J.W. 1998. Predation of turtle nests in a heterogeneous landscape – a test of density effects. *Oikos* **83**, 3-11.
17. Ettema, C.H., Coleman, D.C., Vellidis, G., Lowrance, R., and Rathbun, S. 1998. Spatiotemporal distributions of bacterivorous nematodes and soil resources in a restored riparian wetland. *Ecology* **79**, 2721-2734.
18. Rathbun, S.L. 1998. Discussion of "Analyzing maps of dispersion around a single focus." *Journal of Ecological and Environmental Statistics* **5**, 345-347.
19. Stober, J., Scheidt, D., Jones, R., Thornton, K., Gandy, L., Stevens, D., Trexler, J., and Rathbun, S. 1998. South Florida Ecosystem Assessment. Monitoring for Adaptive Management: Implications for Ecosystem Restoration. United States Environmental Protection Agency, EPA-904-R-98-002. 5

20. Rathbun, S.L. (1998). Discussion of "Analyzing maps of dispersal around a single focus". *Journal of Ecological and Environmental Statistics* **5**, 345-347.
21. Olsen, A.R., Sedransk, J., Edwards, D. Gotway, C.A. Rathbun, S., Reckhow, K., and Young, L. 1999. Statistical issues for monitoring ecological and natural resources in the United States. *Environmental Monitoring and Assessment* **54**, 1-45.
22. Rathbun, S.L. 1999. Combining judgment and probability sample data across space and time. *Bulletin of the International Statistical Institute* **58** (Book 2), 451-454.
23. Rathbun, S.L. 2000. Review of "Interpolation of Spatial Data: Some Theory for Kriging," by M.L. Stein. *Journal of the American Statistical Association* **95**, 1010-1011.
24. Ettema, C.H., Rathbun, S.L., and Coleman, D.C. 2000. On spatiotemporal patchiness and the coexistence of five species of *Chronogaster* (Nematoda: Chronogasteridae) in a riparian wetland. *Oecologia* **125**, 444-452.
25. Calvert, C.A., Jacobs, G.J. Smith, D.D., Rathbun, S.L., and Pickus, C.W. 2000. Association between results of ambulatory electrocardiography and development of cardiomyopathy during long-term follow-up of Doberman Pinschers. *Journal of the American Veterinary Medical Association* **216**, 34-39.
26. Stober QJ, Thornton K, Jones R, Richards J, Ivey C, Welch R, Madden M, Trexler J, Gaiser E, Scheidt D, Rathbun S. (2001). South Florida ecosystem assessment: phase I. II USEPA Region 4.
27. Rathbun, S.L., and Gerritsen, J. 2001. Statistical issues and sampling in wetlands. In R.B. Rader, D.P. Batzer, and S.A. Wissinger (eds.), *Biomonitoring and Management of North American Freshwater Wetlands*, pp. 45-58, Wiley: New York.
28. Singleton, D.R., Furlong, M.A., Rathbun, S., and Whitman, W.B. 2001. Quantitative comparisons of 16S rDNA sequence libraries from environmental samples. *Applied and Environmental Microbiology* **67**, 4374-4376.
29. Rathbun, S.L. 2002. Environmental resource modeling. In A.H. El-Shaarawi and W.W. Piegorsch (eds.), *Encyclopedia of Environmetrics*, Vol. **3**, pp. 1362-1370, Wiley, New York.
30. Rathbun, S.L. 2002. Seismological modeling. In A.H. El-Shaarawi and W.W. Piegorsch (eds.), *Encyclopedia of Environmetrics*, Vol. **4**, pp. 1961-1968. Wiley, New York.
31. Rathbun, S.L. 2002. Discussion of "What shall we teach in environmental statistics?" *Journal of Ecological and Environmental Statistics* **9**, 140-141.
32. Lin, H., and Rathbun, S.L. 2003. Hierarchical frameworks for multiscale bridging in hydrogeology. In Y. Pachepsky, D. Radcliffe and H.M. Selim (eds.). *Scaling Methods in Soil Physics*, pp. 347-371. CRC Press, Baton Rouge, FL.

33. Rathbun, S.L. (2003). Discussion of "CUSUM environmental monitoring in time and space". *Journal of Ecological and Environmental Statistics* **10**, 249-251.
34. Bacchus, S.T., Archibald, D.D., Brook, G.A., Britton, K.O., Haines, B.L., Rathbun, S.L., and Madden, M. 2003. Near-infrared spectroscopy of a hydroecological indicator: new tool for determining sustainable yield for Floridan aquifer system. *Hydrological Processes* **17**, 1785-1809..
35. Singleton, D.R., Rathbun, S.L., Dyszynski, G.E., and Whitman, W.B. 2004. LIB-SHUFF comparisons of 16S rRNA gene clone libraries. In Kowalchuk, G.G.; de Bruijn, F.J.; Head, I.M.; Akkermans, A.D.; van Elsas, J.D. (Eds.), *Molecular Microbial Ecology Manual*, 2nd. Edition, pp. 1361-1372. Springer-Verlag, New York
36. Rathbun, S.L., Shiffman, S., and Gwaltney, C. 2006. Point process models for event history data: Applications in the behavioral sciences. In T.A. Walls and J.S. Schafer (eds.), *Models for Intensive Longitudinal Data*. pp. 219-253. Oxford University Press, New York.
37. Zhao, D., Borders, B., Wilson, M., and Rathbun, S.L. 2006. Modeling neighborhood effects on the growth and survival of individual trees in a natural temperate species-rich forest. *Ecological Modelling* **196**, 90-102.
38. Rathbun, S.L., and Fei, S. 2006. A Spatial Zero-Inflated Poisson Regression Model for Oak Regeneration. *Environmental and Ecological Statistics* **13**, 409-426.
39. Rathbun, S.L., and Black, B. 2006. Modeling and Spatial Prediction of Pre-Settlement Patterns of Forest Distribution using Witness Tree Data. *Environmental and Ecological Statistics* **13**, 427-448.
40. Rathbun, S.L. 2006. Spatial Prediction with Left-Censored Observations. *Journal of Agricultural, Biological, and Environmental Statistics* **11**, 317-336.
41. Rathbun, S.L., Shiffman, S., and Gwaltney, C. 2007. Modeling the effects of partially observed covariates on Poisson process intensity. *Biometrika* **94**, 153-165.
42. Patil, G.P., Acharya, R., Modarras, R., Myers, WL., and Rathbun, S.L. 2007. Hot-spot geoinformatics for digital governance. In A.-V. Anttiroiko, and M. Mälkiä (Eds.), *Encyclopedia of Digital Governance*, pp. 919-927. Idea Group Reference, Hershey, PA.
43. Pearce, J.L., Rathbun, S.L., Aguilar-Villalobos, M., and Naeher, L.P. (2009). Characterizing the spatiotemporal variability of PM_{2.5} in Cusco, Peru using kriging with external drift. *Atmospheric Environment* **43**, 2060-2069.
44. Hufford, K.M., Hamrick, J.L., and Rathbun, S.L. (2009). Male reproductive success at three early stages in the tropical tree, *Platypodium elegans*. *International Journal of Plant Sciences* **170**, 724-734.

45. Pearce, J.L., Aguilar-Villalobos, M., Rathbun, S., and Naeher, L.P. (2009). Residential Exposures to PM2.5 and CO in Cusco, A High-Altitude City in the Peruvian Andes: A Pilot Study. *Archives of Environmental and Occupational Health* **64**, 278-282.
46. Ma, X., Blanton, J.D., Rathbun, S.L., Recuenco, S., and Rupprecht, C.E. (2010). Time series analysis of the impact of oral vaccination on raccoon rabies in West Virginia 1990-2007. *Vector-Borne and Zoonotic Diseases* **10**, 801-809.
47. Rathbun, S.L. (2010). Discussion of "Geostatistical inference under preferential sampling," by P.J. Diggle, R. Menezes, and T.-L. Su. 2009. *Journal of the Royal Statistical Society C* **59**, 214-215.
48. Hale, B.D., Fairchild, B., Worley, J., Harper, L., Ritz, C., Czarick, M., Rathbun, S., and Naeher, L.P. (2010). Comparison of ammonia measurement methods inside and outside of tunnel ventilated broiler houses. *Journal of Applied Poultry Research* **19**, 245-262.
49. Burke, L.E., Music, E., Rathbun, S., Olguin-Olguin, D., French, B., Styn, M.A., and Shiffman, S. (2010). Feasibility of using smart phones for EMA data collection in a study of weight loss maintenance. *Obesity* **18**, S160.
50. Shiffman, S., and Rathbun, S.L. (2011). Point process analyses of variations in smoking rate by setting, mood, gender, and dependence. *Psychology of Addictive Behaviors* **25**, 501-510.
51. Pearce JL, Rathbun S, Achtemeier GL, Naeher LP. (2011). Effect of distance, meteorology, and burn attributes on ground-level particulate matter emissions from prescribed fires. *Atmospheric Environment* **56**, 203-211.
52. Wagner, S.E., Rathbun, S.L., Bayakly, A.R., and Vena, J.E. (2011). Spatial analysis of environmental radionuclides and cancer risk in Georgia counties. *American Journal of Epidemiology* **173**, S163.
53. Neustifter, B., Rathbun, S.L. and Shiffman, S. (2012). Mixed-Poisson point process with partially-observed covariates: ecological momentary assessment of smoking. *Journal of Applied Statistics* **39**, 883-899.
54. Commodore, A.A., Jannik, G.T., Eddy, T.P., Rathbun, S.L., Hejl, A.M., Pearce, J.L., Irvin-Barnwell, E.A., and Naeher, L.P. (2012). Radioactivity in smoke particulates from prescribed burns at the Savannah River site and at selected southeastern United States forests. *Atmospheric Environment* **54**, 643-656.
55. Fitzgerald, C., Aguilar-Villalobos, M., Eppler, A.R., Dorner, S.C., Rathbun, S.L., and Naeher, L. (2012). Testing the effectiveness of two improved interventions in the Santiago de Chuco Province of Peru. *Science of the Total Environment* **420**, 54-64.
56. Porter, J.W., Meyers, M.K., Ruzika, R., Callahan, M.K., Colella, M., Kidney, J., Rathbun, S.L., and Sutherland, K.P. (2012). Catastrophic loss of *Acropora palmata*

in the Florida Keys. *Proceedings of the 12th International Coral Reef Symposium ICRS2012* 19A 5.

57. Rathbun, S.L., Song, X., Neustifter, B., and Shiffman, S. (2013). Survival Analysis with Time-Varying Covariates Measured at Random Times by Design. *Journal of the Royal Statistical Society, Series C* **62**, 419-434.
58. Rathbun, S.L. (2013). Optimal estimation of Poisson intensity with partially observed covariates. *Biometrika* **100**, 277-281.
59. Hejl, A., Ottmar, R.D., Jannik, G.T., Eddy, T.P., Rathbun, S.L., Agyepong, A.D., Pearce, J.L., and Naeher, L.P. (2013) Radionuclide concentrations in forest surface fuels at the Savannah River Site. *Journal of Environmental Management*. **115**, 217-226.
60. Hejl AM, Adetona O, Diaz-Sanchez D, Carter J, Commodore A, Rathbun SL, Naeher LP. (2013). Inflammatory effects of Woodsmoke Exposure among Wildland Firefighters Working at Prescribed Burns at the Savannah River Site, SC. *Journal of Occupational & Environmental Hygiene* **10**, 173-180.
61. Colley, D.G., Binder, S., Campbell, C., King, C.H., Tchuente, L.-A.T., N'Goran, E.K., Erko, B., Karanja, D.M.S., Kabatereine, N.B., van Lieshou, L., and Rathbun, S. (2013). A Five-Country Evaluation of a Point-of-Care Circulating Cathodic Antigen Urine Assay for the Prevalence of *Schistosomiasis Mansoni*. *American Journal of Tropical Medicine and Hygiene* **2013**, 426-432.
62. de Silva, V., Hausman, D., Kauwell, G., Tackett, R., Rathbun, S., and Bailey, L. (2013). Obesity affects short-term folic acid pharmacokinetics in women of childbearing age. *International Journal of Obesity* **37**, 1608-1610.
63. Horton, D.K., Adetona, O., Aguilar-Villabolas, M., Pfeiffer, C.M., Schleicher, R.L., Caldwell, K.L., Rathbun, S.L., Vena, J.E., and Naeher, L.P. (2013). Changes in the concentrations of biochemical indicators of diet and nutritional status of pregnant women across pregnancy trimesters in Trujilla, Peru, 2004-2005. *Nutrition Journal* **12**, 80.
64. Eppler, A.R., Fitzgerald, C., Dorner, S.C., Aguilar-Villabos, M., Rathbun, S.L., Adetona, O, and Naeher, L.P. (2013). Using exhaled carbon monoxide and carboxyhemoglobin to evaluate the effectiveness of chimney stove model in Peru. *International Journal of Occupational and Environmental Health* **19**, 325-331.
65. Music, E., Styn, M. A., Burke, L. E., French, B., Siewiorek, D. P., Smailagic, A., Rathbun, S. (2013). Development of Technology Infrastructure to Support real-time Data Collection in Behavioral Research. *Annals of Behavioral Medicine* **45** (Suppl.), s123.
66. Burke, L.E., Rathbun, S., Styn, M.A., Smailagic, A., Siewiorek, D.P., Ewing, L.J., and Shiffman, S. (2013). EMA adherence among adults seeking weight loss treatment. *Annals of Behavioral Medicine* **45** (Suppl.), s282.

67. Anderson, A.K, da Silva, V.R., Lewis, R.D., Rathbun, S., Hausman, D.B, and Bailey, L.B. (2013). Response to short-term folic acid intake in relation to the body composition of women of reproductive age. *The Federation of Aamerican Societies for Experimental Biology Journal* **27**, 1b 249.
68. Burke, L.E., Rathbun, S., Smailagic, A., Siewiorek D.P., Ewing, L.J., French, B., Music, E., and Shiffman, S. (2014). EMA reported triggers for temptations display diurnal patterns. *Annals of Behavioral Medicine* **47** (Suppl.), s174.
69. Rathbun, S.L., and Shiffman, S. (2016). Mixed effects models for recurrent events data with partially observed time-varying covariates: Ecological momentary assessment of smoking. *Biometrics* **72**, 46-55. NIHMSID 728077
70. Mendez, D.D., Rathbun, S.L., Ma, Q., Goode, R.W., Zheng, Y., Mattos, M., Imes, C.C., Danford, C.A., Sereika, S.M., Hu, L. and Burke, L.E. (2016). Neighborhood Grocery Store Density is Associated with Daily Self-efficacy Among Individuals Enrolled in a Behavioral Weight Loss Intervention Study. *Circulation*, **133**(Suppl 1), A40-A40.
71. Burke, L.E., Shiffman, S., Siewiorek, D., Smailagic, A., Kriska, A., Ewing, L.I., Zheng, Y., Mancino, J. and Rathbun, S.L.(2016). Abstract P251: Triggers of Temptations and Urges Do Not Change During a 12-Month Behavioral Intervention for Weight Loss. *Circulation*, **133**(Suppl 1), AP251-AP251.
72. Diefenbach, D., Rathbun, S.L., Vreeland, J.K., Grove, D., and Kanapaux, W.J. (2016). Evidence for range contraction in snowshoe hare in Pennsylvania. *Northeastern Naturalist*.**23**, 229-248.
73. Ezeamama, A.E., He, C., Shen, Y., Yin, X.-P., Binder, S.C., Campbell, C.H., Rathbun, S.L., Whalen, C.C., N’Goran, E.K., Utzinger, J., Olsen, A., Magnussen, P., Kingung’hi, S., Fenwick, A., Phillips, A., Ferro, J., Karanja, D.M.S., Mwinzi, N.M, Montgomery, S., Secor, W.E., Hamidou, A., Garba, A., King, C.H., and Colley, D.G. (2016). *BMC Infectious Diseases* **16**: 229.
74. Jangid, K., Kao, M.-H., Lahamge, A., Williams, M.A., Rathbun, S.L. and Whitman, W.B. (2016) K-Shuff: A novel algorithm for characterizing structural and compositional diversity in gene libraries. *PLOS One* (to appear).
75. Schmidt, M.D., Fedewa, M.V., Hathaway, E.D., Rees, E., Rathbun, S.L., and Evans, E.M. (2016). Relative changes in diet and neat in response to initiating a walking exercise program. *Medicine and Science in Sports and Exercise* **48**, 1027.
76. Burke, L.E., Shiffman, S., Siewiorek, D., Smailagic, A., Kriska, A., Ewing, L.I., Zheng, Y., Mancino, J. and Rathbun, S.L. (2016). Triggers of Temptations and Urges Do Not Change During a 12-Month Behavioral Intervention for Weight Loss. *Circulation* **133**, P251.

77. Mendez, D.D., Rathbun, S.L., Ma, Q.H., Goode, R.W., Zhang, Y.G., Mattos, M., Imes, C.C., Danford, C.A., Sereika, S.M., Hu, L., and Burke, L.E. (2016). Neighborhood Grocery Store Density is Associated with Daily Self-efficacy Among Individuals Enrolled in a Behavioral Weight Loss Intervention Study. *Circulation* **133**, 40.

Submitted

1. Rathbun, S.L., Shiffman, S., and Fan, W. (2012). Periodic recurrent event modeling with partially observed time-varying covariates. *Computational Statistics and Data Analysis* (in revision).
2. Hathaway, E.D., Guilbault, R.W., Rathbun, S.L., and Schmidt, M.D. (2015). Validity of Individual Actigraph Prediction Equations to Measure Energy Expenditure.

Invited Talks at Regional, National, and International Meetings

1. Cressie, N.A.C., and S.L. Rathbun. 1990. Space-time survival point processes. Fifth International Congress of Ecology, August 23-30, Yokohama, Japan.
2. Platt, W.J., and Rathbun, S.L. 1991. Population dynamics of longleaf pine. 18th Tall Timbers Fire Ecology Conference, May 30-June 2, Tallahassee, Florida.
3. Rathbun, S.L. 1991. A nonstationary Cox process for ecological data. IMS/WNAR Meeting, July 1-3, Santa Barbara, California.
4. Rathbun, S.L. 1991. Parameter estimation for a nonstationary Cox process whose directing intensity is a Markov random field. Joint Statistical Meetings, August 18-22, Atlanta, Georgia.
5. Rathbun, S.L. 1992. Modeling spatial point patterns in ecology. Atlanta Chapter Meetings of the ASA, February 11, Commerce, Georgia.
6. Rathbun, S.L. 1992. Modeling the effects of partially observed concomitant variables on spatial point patterns. ENAR Meeting, March 22-25, Cincinnati, Ohio.
7. Rathbun, S.L. 1992. Modeling the effects of environmental variation on the spatial point patterns of sedentary organisms. 1992 Math/Stat Ecology Conference, April 11, Amicalola Falls State Park, Georgia.
8. Rathbun, S.L. 1993. Discussant for "Asymptotics in Spatial Statistics," by Michael Stein. Institute of Mathematical Statistics Meeting, March 21-24, Philadelphia, Pennsylvania.
9. Rathbun, S.L. 1993. Modeling marked spatio-temporal point patterns. 49th Session of the International Statistical Institute, August 25-September 2, Firenze, Italy.
10. Rathbun, S.L. 1994. Spatial modeling in irregularly shaped regions: kriging estuaries. Joint Statistical Meetings, August 14-18, Toronto, Canada.

11. Rathbun, S.L. 1995. Spatial modeling for environmental applications, a short course. Delaware Chapter of the American Statistical Association, April 27-29.
12. Olsen, A.R., Sedransk, J., Edwards, D., Gotway, C., Liggett, W., Rathbun, S., Reckhow, K., and Young, L. 1996. Statistical issues for monitoring ecological and natural resources in the United States. Workshop on Statistical Issues for Ecological and Natural Resource Monitoring Programs, sponsored by the American Statistical Association. March 14-16, Washington, D.C.
13. Rathbun, S.L. 1996. Spatio-temporal point process models for ecological and seismological data. Summer Research Conference, Southern Region Council on Statistics, June 9-12, DeGray State Park, Arkansas.
14. Rathbun, S.L. 1996. Spatial prediction with left-censored observations. Joint Statistical Meetings, August 4-8, 1996, Chicago, Illinois.
15. Olsen, A.R., Sedransk, J., Edwards, D., Gotway, C., Liggett, W., Rathbun, S., Reckhow, K., and Young, L. 1996. Statistical issues for monitoring ecological and natural resources in the United States. Joint Statistical Meetings, August 4-8, 1996, Chicago, Illinois.
16. Rathbun, S.L. 1996. Statistical issues toward the design of environmental monitoring programs. Third Annual Conference of The Wildlife Society, Cincinnati, Ohio, October 1-5, 1996.
17. Rathbun, S.L. 1997. Geostatistical methods for estimating the total mass of mercury in the waters of the Florida Everglades. Spring Meeting of the Eastern North American Region of the International Biometric Society, March 23-26, Memphis, Tennessee.
18. Rathbun, S.L. 1997. Geostatistical methods for estimating the total mass of mercury in the waters of the Florida Everglades. Interface '97, May 11-14, Houston, Texas.
19. Rathbun, S.L. 1997. Geostatistical methods for estimating the total mass of mercury in the waters of the Florida Everglades. International Conference on Combinatorics, Information Theory, and Statistics, July 18-20, Portland, Maine
20. Rathbun, S.L. 1997. Adoption of Probability-Based Sampling Designs by Section 305(b) Water Quality Monitoring Programs: Combining Data Across Time. National Research Center for Statistics and the Environment Workshop on Combining Information from Programs that Monitor Ecological and Natural Resources, November 21-22, Seattle, Washington.
21. Rathbun, S.L. 1998. Spatial prediction with left-censored observations: Sulfate in the Florida Everglades. The Ninth International Conference on Quantitative Methods in Environmental Sciences, July 3-6, Gold Coast, Queensland, Australia.
22. Rathbun, S.L. 1999. Geostatistical methods for estimating mercury contamination of soils in the Florida Everglades. Spring Meeting of the Eastern North American Region of the International Biometric Society, March 28-31, Atlanta, Georgia.

23. Rathbun, S.L. 1999. Geostatistical methods for estimating mercury contamination of soils in the Florida Everglades. Ninth Lukacs Symposium, Frontiers of Environmental and Ecological Statistics for the 21st Century, April 23-25, Bowling Green, Ohio.
24. Rathbun, S.L. 1999. Combining judgment and probability sample data across space and time. 52nd Session of the International Statistical Institute, August 10-18, Helsinki, Finland.
25. Rathbun, S.L. 2000. Empirical likelihood for combining judgment and probability sample data across space and time. Seventh International Conference on Statistics, Combinatorics, and Related Fields, December 19-21, Mumbai, India.
26. Rathbun, S.L. 2001. Opportunities and challenges with using the web to teach statistics. Roundtable Luncheon, Spring Meeting of the Eastern North American Region of the International Biometric Society, March 25-28, Charlotte, North Carolina.
27. Rathbun, S.L. 2001. Geostatistical Issues for Modeling Mercury Contamination in the Florida Everglades. EMAP Symposium: Coastal Monitoring Through Partnerships, April 24-27, Pensacola Beach, Florida.
28. Rathbun, S.L. 2001. Geostatistical Issues for Modeling Mercury Contamination in the Florida Everglades. Statistics 2001 Canada: The Fourth Canadian Conference in Applied Statistics, July 6-8, Montreal.
29. Rathbun, S.L. 2001. Teaching Environmental Statistics. Roundtable Luncheon, Joint Statistical Meetings, August 4-8, 2001, Atlanta.
30. Rathbun, S.L., and Lin, H. 2002. Statistical Issues for Geostatistical Modeling of Soil Moisture. Annual Conference of The International Environmetrics Society, June 18-22, Genova, Italy.
31. Rathbun, S.L. 2004. Modeling and Spatial Prediction of Pre-Settlement Patterns of Forest Distribution using Witness Tree Data. Fifth Biennial International Conference on Statistics, Probability, and Related Areas, May14-16, Athens, Georgia.
32. Rathbun, S.L. 2004. Point process models for intensive longitudinal data in the human sciences. 24th Biennial Conference of the Society for Multivariate Analysis in the Behavioral Sciences, July 17-21, Jena, Germany.
33. Rathbun, S.L. 2004. Detection and Delineation of Mercury Hot Spots in the Florida Everglades. International Conference on Future of Statistical Theory, Practice, and Education, December 29, 2004-January 1, 2005, Hyderabad, India..
34. Rathbun, S.L., Patil, G.P., and Taillie, C. 2005. Biosurveillance Geoinformatics of Hotspot Detection for Biosecurity. Spring Meeting of the Eastern North American Region of the International Biometric Society, March 20-23, Austin, Texas.

35. Rathbun, S.L. 2005. Detection and Delineation of Hotspots in the Florida Everglades. Ecological Society of America-International Congress of Ecology Joint Meeting, August 7-12, Montreal, Quebec, Canada.
36. Modarres, R., and Rathbun, S.L. 2005. Surveillance geoinformatics for hotspot detection, prioritization, intervention, and sustainable management. Joint Statistical Meetings, August 7-12, Minneapolis, Minnesota.
37. Rathbun, S.L. 2006. Point Process Models for the Effects of Time-Varying Covariates on Rates of Repeated Behavioral Events. International Meeting of the Psychometric Society, June 14-17, Montreal, Quebec, Canada.
38. Rathbun, S.L., and Patil, G.P. 2006. Spatiotemporal geoinformatic disease surveillance. Joint Statistical Meetings, August 6-10, Seattle, Washington.
39. Rathbun, S.L. 2009. Discussion of "Geostatistical inference under preferential sampling," by P.J. Diggle, R. Menezes, and T.-L. Su. 2009. Regular meeting of the Royal Statistical Society, September 23, London, United Kingdom.
40. Rathbun, S.L. 2010. Bayesian inference for spatial zero-inflated Poisson regression models: oak regeneration. Annual Conference of The International Environmetrics Society, June 20-25, Margarita Island, Venezuela.
41. Rathbun, S.L., and Wagner, S. 2012. Statistical challenges to linking spatial pattern of cancer to radiation exposure. Summer Research Conference, Southern Region Council on Statistics, June 3-6, Jekyll Island, Georgia.
42. Wagner, S., Rathbun, S., Burch, J. Bayakly, R, and Vena, J. (2012). Spatial modeling of environmental radionuclides and cancer risk in Georgia. ISEE Conference, Augst 26-30, Columbia, South Carolina.
43. Vena, J.E., Wagner, S.E., and Rathbun, S.L. Applications of Geographic Information Systems and Geo-Spatial Modeling in Environmental Epidemiology. 35th International Conference on Information Technology Interfaces, July 24-27, 2013, Cavtat, Croatia.
44. Rathbun, S.L. Bayesian hierarchical modeling framework for Balkin endemic nephropathy. One Health Symposium, June 5-7, 2014. Slavonski Brod, Croatia.
45. Rathbun, S.L. Mixed effects models for the effects of partially observed covariates on dependent recurrent events data. Seminar, Department of Biostatistics and Epidemiology, Augusta University, January 22, 2016.
46. Schmidt, M.D., Fedewa, M.V., Hathaway, E., Rees, E., Rathbun, S.L. and Evans, E.M. (2016) Relative changes in diet and neat in response to initiating a walking exercise program. *Medicine and Science in Sports and Exercise* **48**, 1027.
47. Burke, L.E., Shiffman, S.,

1. Rathbun, S.L., and Cressie, N.A.C. 1989. A model for a spatial birth process. Contributed paper presented at the Joint Statistical Meetings, August 6-10, 1989, Washington, D.C.
2. Rathbun, S.L., and Cressie, N. 1990. A space-time survival point process for a longleaf pine forest in southern Georgia. Contributed paper presented at the Joint Statistical Meetings, August 6-9, 1990, Anaheim, California.
3. Rathbun, S.L. 1998. Combining data across space and time. Joint Statistical Meetings, August 9-13, Dallas, Texas.
4. Turner, S.A. and Rathbun, S.L. (2002). Modeling plant spatial relationships using a neighborhood density index. 87th Annual Meeting of the Ecological Society of America, August 4-9, Tucson.
5. Rathbun, S.L. 2008. Probability Sampling Framework for Survival Analysis with Time-Varying Covariates. Joint Statistical Meetings, August 3-7, Denver, Colorado.
6. Rathbun, S.L. 2009. Ecological Momentary Assessment: Opportunities for Statistical Research. Joint Statistical Meetings, August 2-6, Washington, D.C.
7. Burke, L.E., Music, E., Rathbun, S., Olguin, D., French, B., Styn, M.A., and Shiffman, S. 2010. Feasibility of using smart phones for EMA data collection in a study of weight loss maintenance. Obesity 2010, 28th Annual Scientific Meeting, October 8-12, San Diego, CA.
8. Orpinas, P., Lacy, M.E., and Rathbun, S.L. (2011). Influence of family structure and parental involvement on adolescent dating and dating violence: The Health Teens longitudinal study. National Summit on Gender-Based Violence Among Young People, April 6, Arlington, VA.
9. Rathbun, S.L. (2011). Mixed effects models for the effects of partially observed covariates on dependent recurrent events data. Joint Statistical Meetings, July 31 – August 4, Miami, Florida.
10. Wagner, S.E., Rathbun, S.L., Bayakly, A.R., and Vena, J.E. (2011). Spatial analysis of environmental radionuclides and cancer risk in Georgia counties. Third North American Congress in Epidemiology, June 21-24, Montreal.
11. Rathbun, S.L., and Wagner, S. 2012. Statistical challenges to linking spatial pattern of cancer to radiation exposure. Joint Statistical Meetings, July 29-August 2, San Diego, CA.
12. Music, E., Styn, M. A., Burke, L. E., French, B., Siewiorek, D. P., Smailagic, A., Rathbun, S. (2013). Development of Technology Infrastructure to Support real-time Data Collection in Behavioral Research. Annual Meeting of the Society for Behavioral Medicine, March 20-23, San Francisco.

13. Burke, L.E., Rathbun, S., Styn, M.A., Smailagic, A., Siewiorek, D.P., Ewing, L.J., and Shiffman, S. (2013). EMA adherence among adults seeking weight loss treatment. Annual Meeting of the Society for Behavioral Medicine, March 20-23, San Francisco.
14. da Silva, V., Hausman, D., Kauwell, G., Tackett, R., Rathbun, S., and Bailey, L. (2013). Obesity affects short-term folic acid pharmacokinetics in women of childbearing age. Joint Annual Meeting of the ASPET/BPS at Experimental Biology, April 20-24, Boston.
15. Anderson, A.K., da Silva, V.R., Lewis, R.D., Rathbun, S., Hausman, D.B., and Bailey, L.B. (2013). Response to short-term folic acid intake in relation to the body composition of women of reproductive age. Joint Annual Meeting of the ASPET/BPS at Experimental Biology, April 20-24, Boston.
16. Burke, L.E., Rathbun, S., Stollo, P., Chasens, E., Smailagic, A., Siewiorek, D.P., Ewing, L.J., French, B., and Shiffman, S. (2014). EPI|NPAM 2014, Epidemiology and Prevention. Nutrition, Physical Activity and Metabolism, sponsored by the American Heart Association, March 18-21, San Francisco.
17. Dorothy B. Hausman, Hea Jin Park, Gail P. A. Kauwell, Marie A. Caudill, Richard B. Meagher, Alicia K. Smith, Alex B. Anderson, Richard D. Lewis, Leann Birch, Stephen L. Rathbun, Susan Fisher, Lynn B. Bailey. (2014). Impact of Obesity on Folate Metabolism and Requirements of Women of Childbearing Age. SEC Symposium: Prevention of Obesity: Overcoming a 21st Century Public Health Challenge. September 21-23, Atlanta, Georgia.
18. Burke, L.E., Rathbun, S., Smailagic, A., Siewiorek D.P., Ewing, L.J., French, B., Music, E., and Shiffman, S. (2014). EMA reported triggers for temptations display diurnal patterns. Annual Meeting of the Society for Behavioral Medicine, April 23-26, Philadelphia, PA.
19. Burke, L.E., Rathbun, S., Smailagic, A., Siewiorek D.P., Ewing, L.J., Mendez, D.D., Ye, L., Zheng, Y., and Shiffman, S. (2015). Environmental Predictors of Weight Loss/Gain in a Longitudinal Study Using EMA. Annual Meeting of the Society for Behavioral Medicine, April 22-25, San Antonio.
20. Burke, L.E., Ewing, L.J., Shiffman, S., Siewiorek, D., Smailagic, A., Kriska, A., and Rathbun, S. (2015). Day-to-Day Variation in Self-Efficacy is Associated with Weight Loss and Risk of Dietary Lapses. EPI|NPAM 2015, Epidemiology and Prevention. Nutrition, Physical Activity and Metabolism, sponsored by the American Heart Association, March 3-6, Baltimore.
21. Mendez, D., Rathbun, S., Ma, Q., Goode, R., Zheng, Y., Mattos, ., Imes, C.D., Sereika, S., and Burke, L. (2016). EPI/Lifestyle 2016, American Heart Association, March 1-4, 2016, Phoenix, Arizona.
22. Porter, J., Bryan, S., Arseniadis, K., Caldwell, L., Rathbun, S., Corso, P., Lee, J., Davis, M. (2016). Preventing pedestrian fatalities using state transportation policy:

Multi-method process and outcome evaluation of Florida's Complete Streets (Routine Accomodation) Statute. American Public Health Association Annual Meeting and Expo, October 29-November 2, Atlanta, Georgia.

Participation in Workshops

1. Combining information from programs that monitor ecological and environmental resources. Sponsored by the National Research Center for Statistics and the Environment, November 21-22, 1997, Seattle, Washington.
2. Point Process Modeling and Seismological Applications of Statistics. Sponsored by the Institute for Mathematics and its Applications, June 10-14, 2002, Minneapolis, Minnesota.
3. Emerging Infectious Disease and Social-Ecological Systems, March 9-11, 2005, Honolulu, Hawaii.

Teaching

STUDENTS:

PhD:

Shiyao Wang, University of Georgia 2015
Nat Kulvanich, University of Georgia 2013
Benjamin Neustifter, University of Georgia 2009
Wenjiong Zhou, University of Georgia, 1999.

Masters:

Anastasia Pashiardi, Penn State University, 2004
Deanna Wiedenhamer, Penn State University, 2002
Timothy McCay, University of Georgia, 1998.
Mohammud Jaleel, University of Georgia, 1996.
Janis Thomas, University of Georgia, 1993.
Edward Berg, University of Georgia, 1992.

TEACHING EXPERIENCE

Department of Statistics, University of Georgia

New Courses Originated:

STAT 8270 Spatial Statistics
STAT 8040 Environmental Statistics

Courses Taught :

STAT 6220 Statistical Methods II
STAT 8040 Environmental Statistics
STAT 8000 Supervised Statistical Consulting
STAT 8060 Computing Techniques in Statistics I
STAT 8070 Computing Techniques in Statistics II
STAT 8200 Design of Experiments for Research Workers
STAT 8250 Multivariate Theory and Methods
STAT 8260 Linear Statistical Analysis
STAT 8270 Spatial Statistics
STAT 8290 Advances in Experimental Design

Department of Statistics, Pennsylvania State University

Courses Taught :

STAT 505 Applied Multivariate Statistical Analysis
STAT 460 Intermediate Applied Statistics
STAT 597 Spatial Statistics
STAT 510 Applied Time Series Analysis

Department of Epidemiology and Biostatistics

New Courses Originated:

BIOS 2010/2010L Biostatistics for Public Health Sciences

BIOS 7020 Introductory Biostatistics II

BIOS 7100E Biostatistical Applications in the Pharmaceutical and Biotechnology Industries

BIOS 8100 Case Studies in Nonlinear Biostatistics

BIOS 8130 Multivariate Design for Public Health

Courses Taught :

BIOS 2010 Biostatistics for Public Health Sciences

BIOS 7010 Introductory Biostatistics I

BIOS 7020 Introductory Biostatistics II

BIOS 7100E Biostatistical Applications in the Pharmaceutical and Biotechnology Industries

BIOS 8100 Case Studies in Nonlinear Biostatistics

BIOS 8130 Multivariate Design for Public Health

BIOS 8900 Spatial Epidemiology

Service to the University of Georgia

Department of Epidemiology and Biostatistics

Head Search Committee (Chair), 2007

Epidemiology Faculty Search Committee, 2006-2008

Food Safety Epidemiology Faculty Search Committee, 2007-2008

Biostatistics Faculty Search Committee (Chair), 2005-present

Interim Head, 2007-2008

Associate Head, 2008-present

College of Public Health

College Organization Committee, 2006-2007

MPH Advisory Committee, 2006-2007

DrPH Advisory Committee, 2006-2007

Curriculum and Academic Programs Committee, 2006-2008

Accreditation Working Group, 2006-2009

University of Georgia

University Curriculum Committee, 2006-2007

University Council, 2006-2009

Faculty Affairs Committee, 2007-2010

Benefits Committee, 2007-2010

Educational Affairs Committee, 2008-2011

Research Computing Advisory Committee, 2009-present