

Brian Neelon, Ph.D.

CONTACT INFORMATION

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Charleston, SC 29425

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CURRENT POSITIONS

Professor and Graduate Training Director for Biostatistics, Division of Biostatistics, Department of Public Health Sciences, Medical University of South Carolina

Core COIN Investigator, Ralph H. Johnson VA Medical Center, Charleston, South Carolina

Core Member, Biostatistics Shared Resource, Hollings Cancer Center, Medical University of South Carolina

RESEARCH INTERESTS

Bayesian methods; longitudinal data analysis; latent variable models; two-part models for zero-inflated and semicontinuous data; spatial statistics; health services research.

EDUCATION

University of North Carolina at Chapel Hill, Chapel Hill, North Carolina USA

Ph.D., Biostatistics, May 2005

— Dissertation: “Bayesian Order-Restricted Inference”

— Advisor: David B. Dunson

M.S., Biostatistics, May 1999

Duke University, Durham, North Carolina USA

B.A., Philosophy, December 1988

HONORS AND AWARDS

Biometrics Showcase Selection, Joint Statistics Meeting, July 2012

Lawrence L. Kupper Dissertation Award, May 2004

NIEHS Student Temporary Employee Fellowship, 2001–2003

NIEHS Predoctoral Training Grant, 1997–2001

Delta Omega Society (National Public Health Honor Society), April 1999

Special Commendation: MS qualifying exams, Department of Biostatistics, University of North Carolina at Chapel Hill, June 1998

A most-cited paper in *Statistical Modelling* January 2017 – June 2017, June 2018

ACADEMIC APPOINTMENTS

Department of Public Health Sciences, Medical University of South Carolina

Charleston, South Carolina USA

Professor, Division of Biostatistics

January 2021 – Present

Graduate Training Director for Biostatistics PhD/MS Programs

July 2016 – Present

Associate Professor, Division of Biostatistics

January 2015 – December 2020

MUSC Hollings Cancer Center, Biostatistics Shared Resource

Charleston, South Carolina USA

Core Member

June 2020 – Present

Health Equity and Rural Outreach Innovation Center (HEROIC)

Ralph H. Johnson VA Medical Center, Charleston, South Carolina USA

Core COIN Investigator

July 2015 – Present

Department of Biostatistics, University of North Carolina

Chapel Hill, North Carolina USA

Adjunct Associate Professor

December 2015 – December 2018

Department of Biostatistics and Bioinformatics, Duke University School of Medicine
Durham, North Carolina USA
Assistant Professor, Primary Appointment January 2012 – December 2014

Center for Health Services Research in Primary Care, Durham VA Medical Center
Durham, North Carolina USA
Faculty Statistician, Secondary Appointment January 2012 – December 2014

Children’s Environmental Health Initiative, Nicholas School of the Environment, Duke University, Durham, North Carolina USA
Statistician September 2009 – December 2011

Department of Health Care Policy, Harvard Medical School
Boston, Massachusetts USA
Postdoctoral Research Fellow June 2007 – August 2009

Department of Biostatistics, University of North Carolina at Chapel Hill
Chapel Hill, North Carolina USA
Research Assistant Professor July 2006 – May 2007

PUBLICATIONS

*Denotes mentored graduate student or postdoctoral fellow.

1. Bloom M, Commodore S, Ferguson L, **Neelon B**, Pearce JL, Baumer A, Newman RB, Grobman W, Tita A, Roberts J, Skupski D, Palomares K, Nageotte M, Kurunthachalam K, Kang C, Wapner R, Vena JE, Hunt KJ (2021). Association between gestational PFAS exposure and children’s adiposity in a diverse population. *Environmental Research*. In press.
2. Hildebrand J, Ferguson PL, Sciscione A, Grobman W, Newman R, Tita A, Wapner R, Nageotte M, Palomares K, Skupski D, Cooper D, Zhang C, **Neelon B**, Vena J, Hunt KJ (2021). Breastfeeding associations with childhood obesity and body composition: findings from a racially diverse maternal-child cohort. *Childhood Obesity*. In press.
3. Emond JA, O’Malley AJ, **Neelon B**, Kravitz RM, Østbye T, Benjamin-Neelon SE (2021). Associations between daily screen time and sleep in a racially and socioeconomically diverse sample of US infants: a prospective cohort study. *BMJ Open*, 11(6):e044525.
4. Pearce JL, **Neelon B**, Bloom M, Buckley JP, Ananth CV, Parera F, Vena JE, Hunt KJ (2021). Exploring associations between prenatal exposure to multiple endocrine disruptors and birth weight with exposure continuum mapping. *Environmental Research*, 200:111386.
5. **Neelon B**, Mutiso F*, Mueller NT, Pearce JL, Benjamin-Neelon SE (2021). Spatial and temporal trends in social vulnerability and COVID-19 incidence and death rates in the United States. *PLOS ONE*, 16(3): e0248702.
6. Davis ML*, **Neelon B**, Nietert PJ, Hunt KJ, Burgette LF, Lawson AB, Egede LE (2021). Propensity score matching for multilevel spatial data: accounting for geographic confounding in health disparity studies. *International Journal of Health Geographics*, 20, 10.
7. **Neelon B**, Mutiso F*, Mueller NT, Pearce JL, Benjamin-Neelon SE (2021). Associations between governor political affiliation and COVID-19 cases and deaths in the United States. *American Journal of Preventive Medicine*, 61, 115-119.
8. Allen CA*, Benjamin-Neelon SE, **Neelon B** (2021). A Bayesian multivariate mixture model for skewed longitudinal data with intermittent missing observations: An application to infant motor development. *Biometrics*, 77, 675–688.
9. Fadus MC, Valad EA, Bryant BE, Garcia AM, **Neelon B**, Tomko RL, Squeglia, L. M. (2020). Racial disparities in elementary school disciplinary actions: Findings from the ABCD Study. *Journal of the American Academy of Child and Adolescent Psychiatry*, 60, 998–1009.

10. Commodore S, Ferguson, **Neelon B**, Newman R, Grobman W, Tita A, Pearce J, Bloom MS, Svendsen E, Roberts J, Skupski D, Sciscione A, Palomares K, Miller R, Wapner R, Vena JE, Hunt KJ. (2020). Reported neighborhood traffic and the odds of asthma/asthma like symptoms: a cross-sectional analysis of a multi-racial cohort of children. *International Journal of Environmental Research and Public Health*, 18(1):243.
11. Neff RA, Zaltz DA, Hecht AA, Pate RR, **Neelon B**, O'Neill JR, Benjamin-Neelon SE (2020). Preschool healthy food policy did not increase percent of food wasted: Evidence from the Carolinas. *Nutrients*, 12(10):3024.
12. Li H, Benitez A, **Neelon B** (2020). A Bayesian hierarchical change point model with parameter constraints. *Statistical Methods in Medical Research*, 30, 316–330.
13. Hunt KJ, David ML, Pearce J, Bian J, Guagliardo MF, Moy E, Axon NR, **Neelon B** (2020). Geographic and racial/ethnic variation in glycemic control and treatment in a national sample of veterans with diabetes. *Diabetes Care*, 43, 2460–2468.
14. Benjamin-Neelon SE, **Neelon B** (2020). Associations between maternal and paternal feeding styles of infants in a racially diverse US birth cohort. *Pediatric Obesity*, 15(10):e12712.
15. Zaltz DA, Hecht AA, Neff RA, Pate RR, **Neelon B**, O'Neill JR, Benjamin-Neelon SE (2020). Healthy eating policy improves children's diet quality in early care and education in South Carolina. *Nutrients*, 12(6):1753.
16. Benjamin-Neelon SE, Allen CA*, **Neelon B** (2020). Household food security and infant adiposity. *Pediatrics*, 146(3):e20193725.
17. Stevens DR, **Neelon B**, Roberts JR, Taylor SB, Newman RB, Vena JE, Hunt KJ (2020). Mediation of the association between maternal pre-pregnancy overweight/obesity and childhood overweight/obesity by birth anthropometry. *Journal of Developmental Origins of Health and Disease*, Feb20:1–8.
18. Zaltz DA, Hecht AA, Pate RR, **Neelon B**, O'Neill JR, Benjamin-Neelon SE (2020). Participation in the child and adult care food program is associated with fewer barriers to serving healthier foods in early care and education. *BMC Public Health*, 20(1):856.
19. Shoaibi A*, **Neelon B**, Lenert L (2020). Shared decision making: From decision science to data science. *Medical Decision Making*, 40, 254–265.
20. Benjamin-Neelon SE, Bai J, Østbye T, **Neelon B**, Pate RR, Crainiceanu C (2020). Physical activity and adiposity in a racially diverse cohort of US infants. *Obesity*, 28, 631–637.
21. Stevens DR, Taylor SB, Roberts JR, **Neelon B**, Newman RB, Vena JE, Hunt KJ (2019). Breastfeeding initiation by maternal diabetes and race/ethnicity in South Carolina: 2004–2016. *Breastfeeding Medicine*, 14, 630–639.
22. Gonzalez-Nahm S, Hoyo C, Østbye T, **Neelon B**, Allen C*, Benjamin-Neelon SE (2019). Associations of maternal diet with infant adiposity at birth, 6 months, and 12 months. *BMJ Open*, 9:e030186.
23. Benjamin-Neelon SE, Platt A, Bacardi-Gascon M, Armstrong S, **Neelon B**, Jimenez-Cruz A (2019). Greenspace, physical activity, and BMI in children from two cities in Northern Mexico. *Preventive Medicine Reports*, 14, 100870.
24. **Neelon B** (2019). Bayesian zero-inflated negative binomial regression based on Pólya-Gamma mixtures. *Bayesian Analysis*, 14, 829–855.
25. Davis ML*, **Neelon B**, Nietert PJ, Hunt KJ, Burgette LF, Lawson AB, Egede LE (2019). Analysis of racial differences in hospital stays in the presence of geographic confounding. *Spatial and Spatio-temporal Epidemiology*, 30, 100284.
26. **Neelon B**, Shoaibi A*, Benjamin-Neelon SE (2019). A multivariate discrete failure time model for the analysis of infant motor development. *Statistics in Medicine*, 38, 1543–1557.

27. Davis ML*, **Neelon B**, Nietert PJ, Hunt KJ, Burgette LF, Lawson AB, Egede LE (2019). Addressing geographic confounding through spatial propensity scores: a study of racial disparities in diabetes. *Statistical Methods in Medical Research*, 28, 734–748.
28. Shoaibi A*, **Neelon B**, Benjamin-Neelon SE (2019). Longitudinal associations of gross motor development, motor milestone achievement, and weight-for-length z-score in a racially diverse cohort of US infants. *BMJ Open*, 9(1):e024440.
29. Pearce JL, **Neelon B**, Bozigar M, Hunt KJ, Commodore A, Svendsen E, Vena J (2018). Associations between multipollutant day types and select cardiorespiratory outcomes in Columbia, South Carolina, 2002 to 2013. *Environmental Epidemiology*, 2(4):e030
30. Benjamin-Neelon SE, **Neelon B**, Pearce J, Grossman E, Gonzalez-Nahm S, Slining M, Duffey K, Frost N (2018). State regulations promoting infant physical activity in early care and education. *Childhood Obesity*, 14, 368–374.
31. Zaltz DA, Pate RR, O’Neill JR, **Neelon B**, Benjamin-Neelon SE (2018). Barriers and facilitators to compliance with a state healthy eating policy in early care and education centers. *Childhood Obesity*, 14, 349–357.
32. Khatiwada A*, Shoaibi A*, **Neelon B**, Emond JA, Benjamin-Neelon SE (2018). Household chaos during infancy and infant weight status at 12 months. *Pediatric Obesity*, 13, 607–613.
33. Walker RJ, **Neelon B**, Davis ML*, Egede LE (2018). Racial differences in spatial patterns for poor glycemic control in the southeastern United States. *Annals of Epidemiology*, 28, 153–159.
34. Pearce JL, Commodore A, **Neelon B**, Boaz R, Bozigar M, Wilson S, Svendsen E (2017). A novel approach for characterizing neighborhood-level trends in particulate matter using concentration and size fraction distributions: A case study in Charleston, SC. *Air Quality, Atmosphere & Health*, 10, 10.1007/s11869-017-0503-y.
35. Benjamin Neelon SE, Gonzalez-Nahm S, Grossman E, Davis MN, **Neelon B**, Ayers Looby A, Frost N (2017). State variations in infant feeding regulations for child care. *Pediatrics*, 140, 2017–2076.
36. Walker RJ, **Neelon B**, Egede LE (2017). Advancing the understanding of social determinants of health through geospatial analysis. *Journal of General Internal Medicine*, 32, 371–372.
37. Smith VA*, **Neelon B**, Maciejewski ML, Preisser JS (2017). Two parts are better than one: Modeling marginal means of semicontinuous data. *Health Services and Outcomes Research Methodology*, 17, 198–218.
38. **Neelon B** and Chung D (2017). The LZIP: A Bayesian latent factor model for correlated zero-inflated counts. *Biometrics*, 73, 185–196.
39. Benecha H, **Neelon B**, Divaris K, Preisser JS (2017). Marginalized mixture models for count data from multiple source populations. *Journal of Statistical Distributions*, 4:3, 1–17.
40. O’Neill JR, Dowda M, Benjamin Neelon SE, **Neelon B**, Pate, RR (2017). Effects of a new state policy on physical activity practices in childcare centers in South Carolina. *American Journal of Public Health*, 107, 144–146.
41. Duan-Porter W, Hastings SN, **Neelon B**, Van Houtven CH (2017). Control beliefs and risk for 4-year mortality in older adults: A prospective cohort study. *BMC Geriatrics*, 17:13, 1–10.
42. Smith VA*, **Neelon B**, Preisser JS, Maciejewski ML (2017). A marginalized two-part model for longitudinal semicontinuous data. *Statistical Methods in Medical Research*, 26, 1949–1968.
43. Benjamin Neelon SE, Finkelstein J, **Neelon B**, Gillman MW (2017). Evaluation of a physical activity regulation for child care in Massachusetts. *Childhood Obesity*, 13, 36–43.
44. **Neelon B**, Chang HC, Ling Q, Hastings SN (2016). Spatiotemporal hurdle models for zero-inflated count data: exploring trends in emergency department visits. *Statistical Methods in Medical Research*, 25, 2558–2576.

45. Jackson GL, Weinberger M, . . . , **Neelon B** et al. (2016). Open-label randomized trial of titrated disease management for patients with hypertension: Study design and baseline sample characteristics. *Contemporary Clinical Trials*, 50, 5–15.
46. Benjamin Neelon SE, Mayhew M, O’Neill JR, **Neelon B**, Li F*, Pate RR (2016). Comparative evaluation of a South Carolina policy to improve nutrition in child care. *Journal of the Academy of Nutrition and Dietetics*, 16, 949–956.
47. **Neelon B**, O’Malley AJ, Smith VA (2016). Modeling zero-modified count and semicontinuous data in health services research, part 1: Background and overview. *Statistics in Medicine*, 35, 5070–5093.
48. **Neelon B**, O’Malley AJ, Smith VA (2016). Modeling zero-modified count and semicontinuous data in health services research, part 2: Case studies. *Statistics in Medicine*, 35, 5094–5112.
49. Menya D, Platt A, Manji I, Sang E, Wafula R, Ren J, Cheruiyot O, Armstrong J, **Neelon B**, O’Meara WP (2015). Using pay for performance incentives (P4P) to improve management of suspected malaria fevers in rural Kenya: a cluster randomized controlled trial. *BMC Medicine*, 13:268.
50. **Neelon B**, Li F*, Burgette LF, Benjamin Neelon SE (2015). A spatiotemporal quantile regression model for emergency department expenditures. *Statistics in Medicine*, 34, 2559–2575.
51. Duan-Porter W, Hastings SN, **Neelon B**, Van Houtven CH (2015). Control beliefs and risk for death, stroke, and myocardial infarction in middle-aged and older adults: an observational study. *Journal of General Internal Medicine*, 30, 1156–1163.
52. Benjamin Neelon SE, Namenek Brouwer RJ, Østbye T, Evenson KR, **Neelon B**, Martinie A, Bennett GG (2015). A community-based intervention increases physical activity and reduces obesity in school-age children in North Carolina. *Childhood Obesity*, 11(3): 297–303.
53. **Neelon B**, Zhu L*, Neelon Benjamin SE (2015). Bayesian two-part spatial models for semicontinuous data with application to emergency department expenditures. *Biostatistics*, 16, 465–479.
54. Zhao L, Feng D, **Neelon B**, Buyse M (2015). Evaluation of treatment efficacy using a Bayesian mixture piecewise linear model of longitudinal biomarkers. *Statistics in Medicine*, 34, 1733–1746.
55. Amatya A, Bhaumik D, Normand S-L, Greenhouse J, Kaizar E, **Neelon B**, Gibbons RD (2015). Likelihood-based random effect meta-analysis of binary events. *Journal of Biopharmaceutical Statistics*, 25, 984–1004.
56. Smith VA*, Preisser JS, **Neelon B**, Maciejewski ML (2014). A marginalized two-part model for semicontinuous data. *Statistics in Medicine*, 33, 4891–4903.
57. **Neelon B**, Gelfand AE, Miranda ML (2014). A multivariate spatial mixture model for areal data: examining regional differences in standardized test scores. *Journal of the Royal Statistical Society: Series C*, 6, 737–761.
58. Van Houtven CH, Oddone EZ, Hastings SN, Hendrix C, Olsen MK, **Neelon B**, Lindquist J, Weidenbacher H, Boles J, Chapman J, Weinberger M (2014). Helping Invested Families Improve Veterans’ Experiences (HI-FIVES) Study: Study design and methodology. *Contemporary Clinical Trials*, 38, 260–269.
59. McVay MA, Yancy WS, Vijan S, Van Scoyoc L, **Neelon B**, Voils CI, Maciejewski ML (2014). Effects of obesity-related health status changes on weight loss treatment utilization in an integrated healthcare setting. *American Journal of Preventive Medicine*, 46, 465–472.
60. **Neelon B** and Lawson AB (2014). Special issue on spatial methods for health policy research. *Statistical Methods in Medical Research*, 23, 117–118.
61. **Neelon B**, Anthopolos RA, Miranda ML (2014). A spatial bivariate probit model for correlated binary data with application to adverse birth outcomes. *Statistical Methods in Medical Research*, 23, 119–133.
62. Voils CI, King H, **Neelon B**, Hoyle RH, Reeve BB, Maciejewski ML, Yancy WS (2014). Characterizing weekly self-reported antihypertensive medication nonadherence across repeated occasions.

63. Miranda ML, Ferranti J, Strauss B, **Neelon B**, Califf R. (2013). Geographic health information systems: A platform to support the integration function of the triple aim. *Health Affairs*, 32, 1608–1615.
64. Menya D, Logedi J, Manji I, Armstrong J, **Neelon B**, Meara WP (2013). An innovative pay-for-performance (P4P) strategy for improving malaria management in rural Kenya: protocol for a cluster randomized controlled trial. *Implementation Science*, 8:48.
65. **Neelon B**, Ghosh P, Loebs PF (2013). A spatial Poisson hurdle model for exploring geographic variation in emergency department visits. *Journal of the Royal Statistical Society: Series A*, 176, 389–413.
66. Montagna S, Tokdar ST, **Neelon B**, Dunson DB (2012). Bayesian latent factor regression for functional and longitudinal data. *Biometrics*, 68: 1064–1073.
67. Bhaumik DK, Amatya A, Normand SL, Greenhouse J, Kaizar E, **Neelon B**, Gibbons RD (2012). Meta-analysis of binary rare adverse event data. *Journal of the American Statistical Association*, 107, 555–567.
68. Busch AB, **Neelon B**, Zelevinsky K, He Y, Normand SL (2012). Accurately predicting bipolar disorder mood outcomes: implications for the use of electronic databases. *Medical Care*. 50, 311–319.
69. **Neelon B**, Swamy GK, Burgette LF, Miranda ML (2011). A Bayesian growth mixture model to examine maternal hypertension and birth outcomes. *Statistics in Medicine*, 30, 2721–2735.
70. **Neelon B**, O’Malley AJ, Normand SL (2011). A Bayesian two-part latent class model for longitudinal medical expenditure data: assessing the impact of mental health and substance abuse parity. *Biometrics*, 67, 280–289.
71. **Neelon B**, O’Malley AJ, Normand SL (2010). Bayesian models for repeated measures zero-inflated count data with application to mental health services utilization. *Statistical Modelling*, 10, 421–439.
72. Miranda ML, Edwards SE, Swami GK, Paul CJ, **Neelon B** (2010). Blood lead levels among pregnant women: historical versus contemporaneous exposures. *International Journal of Environmental Research and Public Health*, 7, 1508–1519
73. **Neelon B** and O’Malley AJ (2010). Bayesian analysis using power priors with application to pediatric quality of care. *Journal of Biometrics and Biostatistics*, 1:103.
74. Busch AB, Huskamp HA, **Neelon B**, Manning T, Normand SL, McGuire TG (2009). Longitudinal racial/ethnic disparities in antimanic medication use in bipolar-I disorder. *Medical Care*, 47, 1217–1228.
75. Gehrie ER, Reynolds HR, Chen AY, **Neelon B**, Roe MT, Gibler BW, Ohman EM, Newby LK, Peterson ED, Hochman, JS (2009). Characterization and outcomes of women and men with non-ST-segment elevation myocardial infarction and nonobstructive coronary artery disease: Results from the Can Rapid Risk Stratification of Unstable Angina Patients Suppress Adverse Outcomes with Early Implementation of the ACC/AHA Guidelines (CRUSADE) Quality Improvement Initiative. *American Heart Journal*, 158, 688–694.
76. Benjamin SE, Copeland KA, Craddock A, Walker E, Slining MM, **Neelon B**, Gillman MW (2009). Menus in child care: A comparison of state regulations to national standards. *Journal of the American Dietetic Association*, 109, 109–115.
77. Margolis PA, McLearn KT, Earls MR, Duncan PA, Rexroad A, Reuland CP, Fuller S, Paul K, **Neelon B**, Bristol TE, Schoettker PJ (2008). Assisting primary care practices in using office systems to promote early childhood development. *Ambulatory Pediatrics*, 8, 383–387.
78. Ward DS, Benjamin SE, Ammerman AS, Ball SC, **Neelon B**, Bangdiwala SI (2008). Nutrition and physical activity in child care: results from an environmental intervention. *American Journal of Preventive Medicine*, 35, 352–356.

79. Benjamin SE, Tate DF, Bangdiwala SI, **Neelon B**, Ammerman AS, Dodds JM, Ward DS (2008). Preparing Child Care Health Consultants to address childhood overweight: a randomized controlled trial comparing web to in-person training. *Maternal and Child Health Journal*, 12(5), 662-669.
80. Evenson KR, **Neelon B**, Ball SC, Vaughn A, Ward DS (2008). Validity and reliability of a school travel survey. *Journal of Physical Activity and Health*, 5, 1-15.
81. Ward DS, Linnan L, Vaughn A, **Neelon B**, Martin SL, Fulton JE (2007). Characteristics associated with US Walk to School programs. *International Journal of Behavioral Nutrition and Physical Activity*, 4:67.
82. Benjamin SE, **Neelon B**, Ball SC, Bangdiwala SI, Ammerman AS, Ward DS (2007). Reliability and validity of a nutrition and physical activity environmental self-assessment for child care. *International Journal of Behavioral Nutrition and Physical Activity*, 5, 4-29.
83. Benjamin SE, Ammerman A, Sommers J, Dodds J, **Neelon B**, Ward DS (2007). Nutrition and physical activity self-assessment for child care (NAP SACC): results from a pilot intervention. *Journal of Nutrition Education and Behavior*, 39(3), 142-149.
84. **Neelon B** and Dunson DB (2004). Bayesian isotonic regression and trend analysis. *Biometrics*, 60, 177-191.
85. Dunson DB and **Neelon B** (2003). Bayesian inference on order constrained parameters in generalized linear models. *Biometrics*, 59, 286-295.
86. Stitzenberg KB, Calvo BF, Iacocca MV, **Neelon B**, Sansbury LB, Dressler LG, Ollila DW (2002). Cytokeratin immunohistochemical validation of the sentinel node hypothesis in patients with breast cancer. *American Journal of Clinical Pathology*, 117, 729-737.
87. Maheshwari SR, Mukherji SK, **Neelon B**, Schiro S, Fatterpekar GM, Stone JA, Castillo M (2000). The choline/creatine ratio in five benign neoplasms: comparison with squamous cell carcinoma by use of in vitro MR spectroscopy. *American Journal of Neuroradiology*, 21, 1930-1935.
88. Stone JA, Mukherji SK, Semelka R, Kelekis N, **Neelon B**, Castillo M. Contrast-enhanced 3D FISP MR angiography of the aortic arch ostia: preliminary results. *Journal of Computer Assisted Tomography*, 24, 369-374.
89. Mukherji SK, Gapany M, **Neelon B**, McCartney W (2000). Evaluation of 201Tl SPECT for predicting early treatment response in patients with squamous cell carcinoma of the extracranial head and neck treated with nonsurgical organ preservation therapy: Initial results. *Journal of Computer Assisted Tomography*, 24, 146-151.
90. Mukherji SK, Gapany M, Phillips D, **Neelon B**, O'Brien S, McCartney W, Buejenovich S, Parekh JS, Noordzij JP, Castillo M. (1999). Thallium-201 single-photon emission CT versus CT for the detection of recurrent squamous cell carcinoma of the head and neck. *American Journal of Neuroradiology*, 20, 1215-1220.
91. Stone JA, Castillo M, **Neelon B**, Mukherji SK (1999). Evaluation of CSF leaks: high-resolution CT compared with contrast-enhanced CT and radionuclide cisternography. *American Journal of Neuroradiology*, 20, 706-712.

BOOK CHAPTERS

- Neelon B** and O'Malley AJ (2019). Two-part models for zero-modified count and semicontinuous data. In Levy A., Goring S., Gatsonis C., Sobolev B., van Ginneken E., Busse R. (eds.) *Health Services Evaluation*. Health Services Research Series. Springer, New York, NY.
- Neelon B** (2016). Spatial data analysis for health services research. In Andrew Lawson, Sudipto Banerjee, Robert Haining and Lola Ugarte (eds.) *Handbook of Spatial Epidemiology*. Chapter 29, pages 549-562. CRC Press: Boca Raton.
- O'Malley, AJ and **Neelon B** (2014). Accommodating heterogeneity: structural equation, latent factor and latent class models. In Tony Culyer (ed.), *Encyclopedia of Health Economics*. Elsevier: Amsterdam.

BOOKS

Lawrence L. Kupper, **Brian Neelon**, and Sean M. O'Brien (2013). *Exercises and Solutions in Statistical Theory*. CRC Press: Boca-Raton.

Lawrence L. Kupper, **Brian Neelon**, and Sean M. O'Brien (2010). *Exercises and Solutions in Biostatistical Theory*. CRC Press: Boca-Raton.

CURRENT FUNDING

HX002299-01A1 Department of Veterans Affairs HSR&D (Neelon/Hunt)

Impact of neighborhood and workforce deprivation on diabetes outcomes in Veterans

Role: MPI

Project Period: 05/01/2018–10/31/2021

This project puts forth a comprehensive geospatial framework to leverage information technologies, analytics, and models of healthcare to optimize individual well-being and population health outcomes.

COVID-19 Rapid Pilot Department of Veterans Affairs HSR&D (Hunt/Neelon)

Impact of the COVID-19 pandemic on chronic disease care within the VA

Role: MPI

Project Period: 10/01/2020–10/31/2021

This Rapid Pilot proposal will examine the impacts of the pandemic on chronic medical conditions using diabetes as a template. Moreover, we will evaluate the role that VA Video Connect can play in preserving access to care and preserving/improving care quality.

R21LM012866 National Institutes of Health (NLM) (Neelon/Lenert)

A Bayesian nonparametric collaborative filtering algorithm to improve health care decisions

Role: MPI

Project Period: 06/01/2018–05/31/2022 (NCE)

This application seeks to develop an enhanced method for shared decision making that can be incorporated in a broad range of clinical settings.

R21DA052661 National Institutes of Health (NIDA) (McClure/Baker)

Quantifying Data Driven Metrics of Meaningful Cannabis Reduction

Role: Co-Investigator

Project Period: 09/01/2021–08/31/2023

The goal of this proposal is to characterize a biomarker of meaningful cannabis reduction by conducting a secondary analysis of multiple cannabis treatment trials.

HX001229 (Axon, Director)

VA HSR&D Center Award

Role: Core COIN Investigator

Project Period: 10/01/2016–09/30/2021

Charleston Health Equity and Rural Outreach Innovation Center (HEROIC)

HEROIC's mission is to improve access and equity in health care for all Veterans by eliminating geographic, racial/ethnic, and gender-based disparities.

U54 DA016511-16 National Institutes of Health (NIAMS) (McCrae-Clark/Brady)

Specialized Center of Research Excellence (SCORE) on Sex Differences

Role: Statistician

Project Period: 09/01/2018–07/31/2023

The specific aims of this SCORE are to support and enhance translational scientific collaborations among the investigators conducting primary and pilot research projects, catalyze further growth of interdisciplinary sex- and gender-based research on the MUSC campus, expand foundational research training for Early Career Investigators dedicated to sex and gender-focused translational research, and develop strategic partnerships to enhance the translation and dissemination of SCORE findings and other relevant research to improve health outcomes.

R01HD093784 National Institutes of Health (NIDDK) (Benjamin-Neelon and Pate)

Promoting Nutrition and Physical Activity in Family Child Care

Role: Co-Investigator/Subcontract PI

Project Period: 06/01/2020 - 05/31/2022

This study evaluates the impact of a new statewide nutrition policy for licensed and subsidized South Carolina family child care homes serving low-income children.

P30 CA138313 National Institutes of Health (NCI) (Guttridge)
Medical University of South Carolina-Cancer Center Support Grant: Biostatistics Shared Resource
Role: Biostatistics Shared Resource Core Member

Project Period: 04/01/2009 - 03/31/2024

The major goal of this grant is to support the ongoing research infrastructure, research programs, shared resources, developmental funds, and administration of the Hollings Cancer Center at the Medical University of South Carolina to ensure the development of more effective approaches to cancer prevention, diagnosis, and therapy.

R37CA251165 National Institutes of Health (NCI) (Wang)

Novel Functions of CDK6 in T-Cell Leukemia Progression

Role: Co-Investigator

Project Period: 08/01/2021 - 07/31/2026

The aim of this R01 is to explore the unknown function of CDK6 in leukemia infiltration and immune evasion.

5U01CA226052 National Institutes of Health (NCI) (Mehta)

Glycopathology of HCC: Identification of the Source Cells of Serum Fucosylation

Role: Co-Investigator

Project Period: 03/14/2019 - 02/28/2024

Major Goals: The goals of this project are to 1) examine the specific glycans that are associated with genetically characterized Hepatocellular Carcinoma (HCC); 2) determine the diagnostic performance of the Glycotest Panel in HCC with varying genetic; and 3) identification of serum glycoproteins that reflect the glycosylation pattern of HCC tissue.

PAST FUNDING

UG3 OD023316 National Institutes of Health ECHO Program (Vena/Wapner)

Environmental Contributors to Child Health Originating from National Fetal Growth Study (ECCHO-NFGS)

Role: Co-Investigator

Project Period: 09/21/2016–08/31/2021

The proposed cohort study assessed the prenatal determinants of two key health outcomes - obesity and neuroimpairment - and supported the ECHO Consortium in its broader research efforts.

R01 DA040968 National Institutes of Health (NIDA) (Killeen)

Mindfulness Meditation for the Treatment of Women with PTSD and SUD

Role: Statistician

Project Period: 09/15/2015–07/31/2021

This proposed randomized study explored the addition of Mindfulness Based Relapse Prevention, revised to include PTSD Treatment, to standard intensive outpatient treatment in a group of women with comorbid PTSD and SUD enrolled in community substance abuse treatment.

R01DK09383801-01A1 National Institutes of Health (NIDDK) (Benjamin-Neelon)

Role: Co-Investigator

Preventing obesity in infants and toddlers in child care

Project Period: 01/01/2013–01/01/2017

This study assessed the effectiveness of a cluster-randomized trial to improve diet in child care centers.

Duke University / NIH / ECHO - Opportunities and Infrastructure Fund (Pearce)

Environmental contributors to child health originating from the NICHD Fetal Growth Studies Role: Co-Investigator

Project Period: 04/01/2018–07/31/2020

This study developed statistical tools to assist with exposure characterization of associations between health outcomes and complex environmental exposures.

IIR 13-063 Department of Veterans Affairs HSR&D (Jackson)

Role: Co-Investigator

Nurse practitioners and physician assistants: primary care roles and outcomes
Project Period: 06/01/14–06/31/17
This nationwide study evaluated the impact of primary care roles on diabetes-related outcome in veterans.

IIR 11-345 Department of Veterans Affairs HSR&D
Helping invested families improve veterans experiences study (Van-Houtven)
Role: Co-Investigator
Funding Period: 2013–2017
This study tested an intervention to improve family support in caring for elderly veterans.

Duke University Medical Center Research Grant (Neelon)
Spatiotemporal Two-Part Models for Zero-Inflated Count and Semicontinuous Data
Role: PI
Project Period: 07/01/14–12/31/15
This internal grant, sponsored by the Duke University Department of Biostatistics, focused on new methods for analyzing zero-inflated data, with applications to health services utilization and medical expenditures.

IIR 10-383 Department of Veterans Affairs HSR&D (Bosworth)
Randomized trial of titrated disease management for patients with hypertension
Role: Co-Investigator
Funding Period: 2011–2015
This randomized control trial evaluated a titrated approach to managing hypertension among veterans.

1R21AI095979-01A1 National Institutes of Health (NIAID) (O'Meara)
Sustainable financial incentives to improve prescription practices for malaria
Role: Co-Investigator
Project Period: 04/01/12–03/31/14
This study tested solutions to the problem of poor adherence to evidence-based clinical guidelines for malaria treatment, thereby reducing inappropriate antimalarial drug use.

DIB 98-001 Department of Veterans Affairs HSR&D (Maciejewski)
Variation in body mass index and VA expenditure trends
Role: Co-Investigator
Project Period: 2012–2013
This study examined relationships between obesity and medical expenditures among US veterans.

RWJ-69551 Robert Wood Johnson Foundation Healthy Eating Research (Benjamin-Neelon)
Evaluation of South Carolina nutrition standards for child care
Role: Co-Investigator
Project period: 2011–2013
This study evaluated the impact of new state policies to improve nutrition standards on child adiposity in child care settings.

A103032 Robert Wood Johnson Foundation Active Living Research (Benjamin)
NC on the Move: Assessing a community campaign on childhood obesity
Role: Co-Investigator
Project Period: 2/1/2011–6/30/2012
This project evaluated a health campaign promoting physical activity in school-age children within a small southern community.

RD83329301-4 Environmental Protection Agency (Miranda)
Southern Center on Environmentally-Driven Disparities in Birth Outcomes
Role: Statistician
Project Period: 05/01/07–04/30/12
This grant established a Southern Center on Environmentally-Driven Disparities in Birth Outcomes. The Center seeks to determine how environmental, social, and host factors drive health disparities in birth outcomes.

INVITED/MENTORED
PRESENTATIONS

*Denotes mentored graduate student or postdoctoral fellow.

Allen C*, **Neelon B**, Benjamin-Neelon SE. A Bayesian multivariate skew-normal mixture model for longitudinal data with intermittent missing observations: An application to infant motor development. ENAR, Nashville, TN; March, 2020.

Allen C*, **Neelon B**, Benjamin-Neelon SE. A novel Bayesian modeling framework for clustering infant growth trajectories. Southern Regional Council on Statistics 2019 Summer Research Conference (SRCOS), Carrollton, KY; June 2019. *Presented by Allen Carter, **winner of the R.L. Anderson student poster award**.

Neelon B. Bayesian zero-inflated negative binomial regression based on Pólya-Gamma mixtures. The International Conference on Advances in Interdisciplinary Statistics and Combinatorics (AISC). Greensboro, NC; October 2018.

Davis ML* and **Neelon B**. Addressing geographic confounding through spatial propensity scores. 28th Annual Conference of The International Environmetrics Society (TIES). Guanajuato, Mexico; July 2018. *Presented by Melanie Davis.

Davis ML* and **Neelon B**. Addressing geographic confounding through spatial propensity scores. ENAR, Atlanta. Georgia; March 2018. *Presented by Melanie Davis.

Allen C*, **Neelon B**, Benjamin-Neelon S. Bayesian skew-normal and skew-t modeling of birth weight and food security. South Carolina chapter of the American Statistical Association Meeting, Clemson, South Carolina; 2018. *Presented by Carter Allen.

Neelon B. Spatial Analysis for Health Services Research. The Dartmouth Institute, Hanover, NH, December, 2016.

Neelon B. Bayesian latent factor regression for correlated zero-inflated counts. The Dartmouth Institute, Hanover, NH; December, 2016.

Neelon B. Bayesian latent factor regression for correlated zero-inflated counts. University of South Carolina, Columbia, SC, November; 2016.

Neelon B. Bayesian latent factor regression for correlated zero-inflated counts. International Biometric Conference, Victoria, British Columbia; July 2016.

Neelon B. Bayesian latent factor regression for correlated zero-inflated counts. ENAR, Austin, Tx; March 2016.

Neelon B. A spatiotemporal quantile regression model for emergency department expenditures. International Conference on Health Policy Statistics (ICHPS), Providence, RI; October 2015. *Presented by Fan Li, student travel award winner.

Neelon B. Bayesian two-part spatial models for semicontinuous data with application to emergency department expenditures. International Biometric Society Western Regional (WNAR), Boise, ID; June 2015.

Neelon B. Bayesian two-part spatial models for semicontinuous data with application to emergency department expenditures. ENAR, Miami, FL; March 2015.

Smith VA*, Preisser JS, **Neelon B**, Maciejewski ML. A marginalized two-part model for semicontinuous data. ENAR, Miami, FL; March 2015.

Neelon B. A spatiotemporal quantile regression model for emergency department expenditures. Department of Biostatistics, Yale University; December 2014.

Neelon B. A spatiotemporal quantile regression model for emergency department expenditures. Department of Statistics, Western Michigan University; October 2014.

Neelon B. A multivariate spatial mixture model for areal data: examining regional differences in standardized test scores. Joint Statistical Meetings, Boston, MA; August 2014.

Neelon B. A spatiotemporal quantile regression model for emergency department expenditures. Department of Public Health Sciences, Medical University of South Carolina; April 2014.

Neelon B. A Bayesian two-part latent class model for longitudinal medical expenditure data. Joint Statistical Meetings, San Diego, CA; July 2012. *Biometrics showcase selection.*

Neelon B. A spatial Poisson hurdle model for exploring geographic variation in emergency department visits. ICHPS, Cleveland, OH; October 2011.

Neelon B. A spatial Poisson hurdle model for exploring geographic variation in emergency department visits. Durham VA Medical Center Health Services Research Division, Durham, NC; August 2011.

Neelon B. Bayesian analysis using historical data. Department of Health Care Policy, Harvard Medical School, Boston, MA; November 2009.

Neelon B. Bayesian models for repeated measures zero-inflated count data. Department of Health Care Policy, Harvard Medical School, Boston, MA; January 2009.

Neelon B. Introduction to Bayesian inference using WinBUGS. Department of Health Care Policy, Harvard Medical School, Boston, MA, December; 2008.

Neelon B. Introduction to latent class models. Department of Health Care Policy, Harvard Medical School, Boston, MA; January 2008.

CONTRIBUTED
PRESENTATIONS

Chung D and **Neelon B.** A Bayesian regression framework for the analysis of paired compositional data. ENAR, Nashville TN; March 2020.

Benjamin-Neelon SE, Allen C, **Neelon B.** Household food insecurity is associated with higher BMI in a US cohort of infants. American Society for Nutrition, Baltimore, Maryland; 2019.

Benjamin-Neelon SE, Gonzalez-Nahm S, **Neelon B.** Income and unemployment are associated with proportion of Baby-Friendly Hospital Initiative facilities in US states American Society for Nutrition, Baltimore, Maryland; 2019.

Benjamin-Neelon SE, Allen C, **Neelon B.** Household food insecurity is associated with higher BMI in a US cohort of infants. Pediatric Academic Societies. Baltimore, Maryland; 2019.

Chung D, Sun Z, Lawson A, **Neelon B,** Kelemen L. Pathway-guided integrative analysis of high throughput genomic datasets to improve cancer subtype identification. ENAR, Atlanta, Georgia; March 2018.

Zaltz D, Hecht A, Pate RR, Neff R, **Neelon B,** O'Neill JR, Benjamin-Neelon SE. Impact of a New Healthy Eating Policy on Children's Diet Quality in South Carolina Child Care. The Obesity Society. Nashville, Tennessee; 2018.

Shoabi A, **Neelon B,** Lenert L. A Flexible Bayesian Nonparametric Model for Preference-based Clustering: Toward a Netflix-like Collaborative Filtering Algorithm to Improve Healthcare Decisions. Annual Conference of the American Medical Informatics Association. San Francisco, CA, 2017.

Benecha HK, Preisser JS, Das K, **Neelon B.** Marginalized bivariate zero-inflated Poisson regression. ENAR, Washington, DC; March 2017.

Benjamin Neelon SE, Mayhew M, O'Neill J, **Neelon B,** Pate RR. Evaluation of nutrition standards for child care centers in South Carolina. Healthy Eating Research, Robert Wood Johnson Foundation. Chapel Hill, North Carolina; 2014.

Neelon B. Spatiotemporal hurdle models for zero-inflated count data: exploring trends in emergency department visits. ENAR, Baltimore, MD; March 2014.

Neelon B. Multivariate spatial analysis via mixtures. International Biometrics Society, Eastern North American Region (ENAR), Washington, DC; April 2012.

Neelon B. Benjamin Neelon SE, Brouwer R, Østbye T, Martini A, Neelon B, Bennett G. Evaluation of a community campaign on obesity. Robert Wood Johnson Foundation, Active Living Research. San Diego, California; 2012.

Neelon B. Bivariate spatial analysis of birth weight and gestational age. ICHPS, Cleveland, OH; October 2011.

Neelon B. A Bayesian growth mixture model to examine maternal hypertension and birth outcomes. Duke University Department of Biostatistics and Bioinformatics, Durham, NC, May 2011.

Neelon B. A Bayesian two-part latent class model for longitudinal medical expenditure data. ICHPS, Washington, DC; January 2010.

Neelon B. Bayesian analysis using priors from historical data. Joint Statistical Meetings, Denver, CO; August 2008.

Neelon B. A Bayesian latent class model for semi-continuous data. ENAR, Washington, DC; March 2008.

Benjamin SE, **Neelon B.**, Ball S, Bangdiwala SI, Ammerman AS, Ward D. Reliability and validity of a nutrition and physical activity environmental self-Assessment for child care. The Obesity Society. New Orleans, Louisiana; 2007.

TEACHING
EXPERIENCE

Instructor, Bayesian Biostatistics (Bmrt 719), MUSC, Fall 2021.

Instructor, Principles of Statistical Inference (Bmrt 785), MUSC, Summer 2021.

Instructor, Longitudinal Data Analysis (Bmrt 767), MUSC, Summer 2017, 2018; Spring 2020

Instructor, Statistical Theory II (Bmrt 707), MUSC, Spring 2016, 2019, 2021

Co-Instructor, Advanced Bayesian Computation and Methods (Bmrt 789-19), MUSC, Fall 2018

Instructor, Principles of Biostatistics (Bios 600), UNC-CH, Fall 2006 and Spring 2007

Teaching Assistant, Statistical Methods for Practicing Physicians, UNC-CH, Fall 2004

Teaching Assistant, Health Careers Enrichment Program, UNC-CH, Summer 2004

Teaching Assistant, Principles of Statistical Inference (Bios 110), UNC-CH, Spring 2001

Teaching Assistant, Intermediate Statistical Methods (Bios 162), UNC-CH, Fall 2000

Teaching Assistant, Probability and Statistical Inference II (Bios 161), UNC-CH, Spring 2000

Teaching Assistant, Principles of Experimental Analysis (Bios 145), UNC-CH, Spring 1999

DOCTORAL
STUDENTS AT
MUSC

Doctoral advisor for Chun-Che Wen. Spring 2021 – Present.

Doctoral advisor for Fedelis Mutiso. Spring 2019 – Present.

Doctoral co-advisor for Joanne Kim. Summer 2019 – Present.

Doctoral committee member for Jonathan Beal. Spring 2019 – Summer 2021. Currently Research Assistant Professor at MUSC.

Doctoral committee member for Daniel Baer. Spring 2019 – Spring 2021. Currently Postdoctoral Fellow at the University of Pennsylvania.

Faculty mentor for Carter Allen. Fall 2017 – Fall 2019.

Doctoral committee member for Ray Boaz. Fall 2017 – Summer 2019.

Doctoral committee member for Zhenning Yu. Fall 2017 – Summer 2019.

Doctoral committee member for Danielle Stevens. Fall 2017 – May 2019. Currently Postdoctoral Fellow, National Institute for Child Health and Human Development.

Doctoral advisor for Melanie Davis. Jan 2015 – May 2018. Currently PhD statistician and Co-Investigator at the Charleston VA Center for Innovation.

Doctoral committee member for Lin Dai. Fall 2015 – 2017.

Doctoral committee member for Delia Voronca. Fall 2014 – Spring 2016. Currently Biostatistician at The Emmes Corporation, Washington, DC.

MASTER’S AND
DOCTORAL
STUDENTS AT
OTHER
INSTITUTIONS

Doctoral committee member for Habtamu Benecha, UNC-CH Department of Biostatistics. Fall 2015 – July 2016.

Doctoral co-advisor for Valerie Smith, UNC-CH Department of Biostatistics. Fall 2013 – Spring 2015. Currently Assistant Professor, Department of Population Health Sciences, Duke University.

Master’s thesis advisor for Li Zhu, Duke University Biostatistics and Bioinformatics. Spring 2013 – Spring 2014. Currently Data Scientist, Google.

Master’s thesis advisor for Fan Li, Duke University Biostatistics and Bioinformatics. Spring 2013 – Spring 2014. Currently Assistant Professor, Department of Biostatistics, Yale University.

Doctoral committee member for Leann Long, UNC-CH Department of Biostatistics. Fall 2012 – Spring 2013. Currently Assistant Professor, Department of Biostatistics, University of Alabama, Birmingham.

NIH STUDY
SECTIONS

Ad-hoc member for the Biostatistical Methods and Research Design (BMRD) study section. March 10-12, 2021. Internet Assisted Review (IAR).

Ad-hoc member for the Biostatistical Methods and Research Design (BMRD) study section. October 21-23, 2020. IAR.

Ad-hoc member for the Social Sciences and Population Section A (SSPA) study section. February 6-7, 2020. Denver, CO.

Ad-hoc member for NIEHS Study Section ZES1 LAT-D (K1), K99/R00 Career Development in Environmental Research. National Institute of Environmental Sciences. March 1, 2018.

PROFESSIONAL
SERVICE

Education Advisory Committee, ENAR 2022, Houston Tx.

MUSC Graduate Admissions Committee, 2017–Present.

Organized invited speaker session “Recent Approaches to Multivariate Data Analysis in the Health Sciences,” ENAR 2020, Nashville, TN.

MUSC Health Services Research Task Force, 2018–2019.

Student Travel Awards Committee, ENAR 2014–2016.

Organized invited speaker session “Advances in modeling zero-inflated data,” ENAR 2015, Miami, FL.

Guest Editor, special issue on Spatial Methods for Health Policy Research, *Statistical Methods in Medical Research*, Volume 23 Issue 2, April 2014.

Planning committee member for the 2013 International Conference on Health Policy Statistics.

Planning committee member for the 2011 International Conference on Health Policy Statistics.

— Organized session on spatial statistics in health policy research

— Organized tutorial on quantile regression methods in health policy

REFEREED
JOURNALS

American Journal of Psychiatry, Annals of Applied Statistics, Bayesian Analysis, Biometrics, Communications in Statistics, Ecological Statistics, Health Services Outcomes and Research Methodology, Journal of the American Medical Informatics Association, Journal of the American Statistical Association, Journal of Environmental and Journal of Education and Behavioral Statistics, Journal of the Royal Statistical Society Series A, Journal of the Royal Statistical Society Series C, Spatial and

Spatiotemporal Epidemiology, Spatial Statistics, Statistical Methods in Medical Research, Statistical Science, Statistics in Medicine.