CURRICULUM VITAE
ALEXANDER C. MCLAIN
WEBSITE, GITHUB

Department of Epidemiology and Biostatistics

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Statistical Interests: High-dimensional regression models; variable selection; longitudinal, clustered, and spatial data; length-biased survival analysis.

Scientific Interests: Neuroimaging data, maternal and child health outcomes, global nutrition, and preventative science.

Personal Interests: Running, basketball, hiking, sour IPAs, and my three kids.

PROFESSIONAL APPOINTMENTS

· *Full Professor,* Department of Epidemiology and Biostatistics, University of South Carolina.   *2025 -*

· *Associate Professor,* Department of Epidemiology and Biostatistics, University of South Carolina.   *2018 - 2024*

· *Assistant Professor,* Department of Epidemiology and Biostatistics, University of South Carolina.   *2012 - 2018*

· *Research Fellow,* Biostatistics and Bioinformatics Branch, Division of Intramural Population Health Research, NICHD.   *2011 - 2012*

· *IRTA Postdoctoral Fellow,* Biostatistics and Bioinformatics Branch, Division of Intramural Population Health Research, NICHD.   *2009 - 2011*

· *NSF-VIGRE Postdoctoral Fellow,* Department of Statistics North Carolina State University.   *2008 - 2009*

· *Graduate Assistant,* Department of Statistics, University of South Carolina.   *2003 - 2008*

EDUCATION

· Ph.D. in Statistics, University of South Carolina, Columbia, SC   *August 2008*

· M.S. in Statistics, University of South Carolina, Columbia, SC   *December 2005*

· B.S. in Mathematics, University of Massachusetts, Amherst, MA   *May 2002*

<h1 style="text-align:center">PROFESSIONAL ACTIVITIES</h1>

EDITORIAL SERVICE

· Associate Editor for *Statistics in Medicine* (2022–).

· Associate Editor for *The American Statistican* (2020–2023).

· Statistical Consultant for *The American Journal of Obstetrics & Gynecology* (AJOG) (2022–).

· Member of the American Society of Nutrition Statistical Review Board for *Advances in Nutrition*, *The American Journal of Clinical Nutrition*, *The Journal of Nutrition* and *Current Developments in Nutrition* (2019–2023).

· Methodological Member of the Editorial Review Board for *Neurosurgery* and *Operative Neurosurgery* (2016–2019).

· Ad-hoc reviewer for most journals in statistics and biostatistics, along with many in epidemiology and maternal child health.

GRANT REVIEW PANELS

· NCCIH Mind & Body Intervention Clinical Trials study section (ZAT1 SUP), *October 2022, January 2023, October 2023, February 2024.*

· Multi-ethnic Study of Atherosclerosis (MESA): Field Centers & Coordinating Center special emphasis review panel, *September 2019.*

· Medical Research Council (MRC) Methodology Research Panel, *October 2017, March 2018.*

OTHER EXTERNAL SERVICE

· Mentor for the National Alliance for Doctoral Studies in the Mathematical Sciences (2020–).

· President (2017–2019), Vice President (2015–2017), and Secretary (2013–2015) for the South Carolina Chapter of the *American Statistical Association*.

· Organized *"Modern Statistical Methods for Neuroimaging data"* session for the *International Chinese Statistical Association* meeting for March 2019.

· Co-organizer of SCSC at Clemson University *October 2018.*

· Co-developer of the initial *South Carolina Statistics Consortium (SCSC)* Conference at Clemson University *November 2014.*

· Organized *"Methods for assessing environmental factors on reproductive outcomes"* session at the Joint Statistical Meetings, August 2013.

· Co-developer of the "Division of Intramural Population Health Research Summer Course 2011," *Studies in Child Health & Human Development: Theory, Design and Methods.*

Institutional Service

· University of South Carolina Faculty Senator (2024-).

· Chair of Epidemiology and Biostatistics Search Committee (2018–2019, 2022–2023).

· Organizer and host the methodology portion of the Research Center for Child Well-Being *Distinguished Speaker Series* (2021–). Former speakers include Susan Murphy, Elizabeth Stuart, Ciprian Crainceanu, Joseph G. Ibrahim, and Ralph B. D'Agostino Jr.

· Member of Biostatistics Curriculum Committee (2021-)

· Division of Biostatistics Admissions Committee (2013-2019, 2023-)

· Member of Epidemiology and Biostatistics Search Committee (2012-2013, 2016-2017 & 2021-2022).

· Student Recruitment Coordinator for the Department of Epidemiology and Biostatistics (2018-2021).

· Chair of the Biostatistics Division Exam Committee (2016–2017)

· Member of the Arnold School of Public Health, Scholastic Standards and Petitions Committee (2013–2016).

· Chair of the Biostatistics Forum (2014–2017)

· Department of Epidemiology and Biostatistics Fun and Frolic Committee (2014–2020).

· Member of the Division of Intramural Population Health Research Professional Development Committee, *2010-2012*.

Publications

†Student Author. *Dual first-authors. ‡Corresponding Author. *Senior Author.

Selected Publications

1. Olejua† P, **AC Mclain***‡, N Inak, M Dowda, and RR Pate (2025+). Clustering patterns of 24-hour physical activity in children 6 to 36 months old. *Pediatric Exercise Science,* (available online).

2. Huang†, R, C McMahan, B Herrin, **AC McLain**, B Cai and S Self (2025). Gradient Boosting: A Computationally Efficient Alternative to Markov Chain Monte Carlo Sampling for Fitting Large Bayesian Spatio-Temporal Binomial Regression Models. *Infectious Disease Modeling,* 10:1, 189–200.

3. Guo†, S, J Zhang, and **AC McLain***‡ (2024). Joint modelling of survival and backwards recurrence outcomes: an analysis of factors associated with fertility treatment in the U.S.. *Journal of the Royal Statistical Society: Series C,* 73:5, 1355–1369.

4. Zhang† S, **AC McLain***‡, J Habiger, C Rorden, and J Fridriksson (2024). False Discovery Rate Control for Lesion Symptom Mapping with Heterogeneous data via Weighted P-values. *Biometrical Journal*, 66:6, e202300198.

5. Bradshaw J, JM Eberth, A Zgodic, A Federico, K Flory, **AC McLain***‡ (2024). County-Level Prevalence Estimates of Autism Spectrum Disorder in Children in the United States. *Journal of Autism and Developmental Disorders,* 54, 2710–2718.

6. Guo[†], S, Y Wu, **AC McLain**, JW Hardin, B Olatosi, X Li, and J Zhang (2024). Functional multi-variable logistic regression with an application to HIV viral suppression prediction. *Biometrical Journal,* 66:5, e202300081.

7. Self S, X Zhao[†], A Zgodic[†], A Overby, D White, **AC McLain**[*], and C Dyckman (2024). A Hypothesis Test for Detecting Spatial Patterns in Categorical Areal Data. *Spatial Statistics,* 61, 100839.

8. Huang[†], R, **AC McLain**, B Herrin, M Nolan, B Cai and S Self (2024). Bayesian Group Testing Regression Models for Spatial Data. *Spatio and Spatio-Temporal Epidemiology,* 50, 100677.

9. Self S, A Overby, A Zgodic[†], D White, **AC McLain**[*], and C Dyckman (2023). A hypothesis test for detecting distance-specific clustering and dispersion in areal data. *Spatial Statistics* 55, 100757.

10. Zgodic[†‡] A, **AC McLain**[*], JM Eberth, A Federico, J Bradshaw, K Flory (2023). County-Level Prevalence Estimates of ADHD in Children in the United States. *Annals of Epidemiology* 79, 56–64.

11. Hong[†], Y, JM Eberth, B Cai, and **AC McLain**[*‡] (2022). Estimating confidence intervals for spatial hierarchical mixed-effects models with post-stratification. *Spatial Statistics* 51, 100670.

12. Saraswati[†], CM, E Borghi, JJ Rodrigues da Silva Breda, CM Flores-Urrutia, J Williams, C Hayashi, EA Frongillo, and **AC McLain**[*] (2022). Estimating childhood stunting and overweight trends in the European region from sparse longitudinal data. *Journal of Nutrition* 150:7, 1773–1782.

   – Editorial published by the *Journal of Nutrition* and blog post by the *American Society for Nutrition*, discussing the results.

13. Hess[*], SY, **AC McLain**[*], H Lescinsky, KH Brown A Afshin, R Atkin, and SJM Osendarp (2022). Basis for changes for global burden of disease estimates related to vitamin A and zinc deficiency in the GBD 2017 and 2019 Studies. *Public Health Nutrition* 25:8, 2225–2231.

14. Luo[†], X, G Cai, **AC McLain**, C I Amos, B Cai, and F Xiao (2022) BMI-CNV: a Bayesian framework for multiple genotyping platforms detection of copy number variation. *Genetics* 222:4, iyac147.

15. Self, SCW, R Huang, S Amin, J Ewing, C Rudisill, and **AC McLain**[*] (2022). A Bayesian Susceptible-Infectious-Hospitalized-Ventilated-Recovered Model to Predict Demand for COVID-19 Inpatient Care in a Large Healthcare System. *PLoS One* 17:12, e0260595.

16. **McLain**[‡]**, AC**, S Guo, ME Thoma, and J Zhang (2021). Length-biased semicompeting risks models for cross-sectional data: An application to current duration of pregnancy attempt data. *Annals of Applied Statistics* 15:2, 1054–1067. Link to code.

17. Zgodic[†], A, J Eberth, C Brennen, ME Wende, EW Stowe, AT Kaczynski, AD Liese and **AC McLain**[*‡] (2021). Estimates of Childhood Overweight and Obesity at the Region, State, and County Levels: A Multilevel Small Area Estimation Approach. *American Journal of Epidemiology* 190:12, 2618–2629.

18. Hess[*], SY, **AC McLain**[*], EA Frongillo, A Afshin, NJ Kassebaum, SJM Osendarp, R Atkin, R Rawat, and KH Brown (2021). Challenges for estimating the global prevalence of micronutrient deficiencies and related disease burden: A case study of the Global Burden of Disease Study. *Current Developments in Nutrition* 5:12, nzab141.

19. Zhou[†], J, J Zhang, **AC McLain**, W Lu, X Sui, and JW Hardin (2020). Semiparametric Regression of the Illness-Death Model with Interval Censored Disease Incidence Time: an Application to the ACLS Data. *Statistical Methods in Medical Research* 29:12, 3707-3720.

20. **McLain**[‡] **AC**, EA Frongillo, E Borghi, and J Feng (2019). Prediction intervals for heterogeneous penalized longitudinal models with multi-source summary measures: an application to estimating child malnutrition rates. *Statistics in Medicine* 38:1, 1002–1012. Link to R code.

21. **McLain, AC**, EA Frongillo, SY Hess, E Piwoz (2019). Comparison of methods used to estimate the global burden of disease related to undernutrition and suboptimal breastfeeding. *Advances in Nutrition* 10:3, 380–390.

22. Zhang[†] Y, **AC McLain**[‡], B Davis, S McDermott (2019). Fecundity and infertility among women with disability in the United States. *Journal of Women's Health* 28:7, 934–940.

23. Zhou[†], J, **AC McLain**, W Lu, X Sui, JW Hardin, and J Zhang (2019). A Varying-Coefficient Generalized Odds Rate Model with Time-Varying Exposure: An Application to Fitness and CVD Mortality. *Biometrics* 75:3, 853–863.

24. Eberth[*] JM, **AC McLain**[*], Y Hong[†], E Sercy, A Diedhiou, D J Kilpatrick (2018). Estimating county-level tobacco use and exposure in South Carolina: a spatial model-based small area estimation approach. *Annals of Epidemiology* 28:7, 481–488.e4.

25. Geraci, M, and **AC McLain** (2018). Multiple imputation for bounded variables. *Psychometrika* 83:4 919–940.

26. Polis, CB, CM Cox, Ö Tunçalp, **AC McLain**, ME Thoma (2017). Estimating infertility prevalence in low-to-middle-income countries: An application of a current duration approach to Demographic and Health Survey data. *Human Reproduction*, 32:5, 1064–1074.

    – Link to corresponding *Global Health Now* blog post, University of Maryland School of Public Health post and the University of South Carolina Arnold School of Public Health post.
    – Honorable mention for the Winners of the Untold Global Health Stories of 2019.

27. **McLain**[‡] **AC**, R Sundaram, and GM Buck Louis (2016). Modeling fecundity in the presence of a sterile fraction using a semi-parametric transformation model for grouped survival data. *Statistical Methods in Medical Research* 25, 22–36.

28. Mulatya[†] CM, **AC McLain**[*‡], B Cai, JW Hardin, PS Albert (2016). Estimating time to event characteristics via longitudinal threshold regression models – an application to cervical dilation progression. *Statistics in Medicine* 35, 4368–4379.

29. McMahan, C, **AC McLain**, C Gallagher, and E Schisterman (2016). Estimating covariate-adjusted measures of diagnostic accuracy based on pooled biomarker assessments. *Biomedical Journal* 58:4, 944–961.

30. Zhou[†], J, J Zhang, **AC McLain** and B Cai (2016) A multiple imputation approach for semiparametric cure model with interval censored data. *Computational Statistics and Data Analysis* 99, 105–114.

31. Cipolli[†], W, T Hanson, and **AC McLain** (2016). Bayesian Nonparametric Multiple Testing. *Computational Statistics and Data Analysis*, 101, 64–79.

32. **McLain AC**, R Sundaram, and GM Buck Louis (2015). Joint analysis of longitudinal and survival data measured on nested time-scales using shared parameter models: an application to fecundity data. *Journal of the Royal Statistical Society: Series C* 64, 339–357.

33. Cummings[†], T H, J W Hardin, **AC McLain**, J R Hussey, K J Bennett and G M Wingood (2015). Modeling Heaped Count Data. *The Stata Journal* 15, 457–479.

34. Sapra[†], KJ, **AC McLain**, JM Maisog, R Sundaram, GM Buck Louis (2015). Clustering of retrospectively reported and prospectively observed time-to-pregnancy among women in a preconception cohort. *Annals of Epidemiology* 25, 959–963.

35. **McLain**[‡] **A C**, R Sundaram, M E Thoma, and G M Buck Louis (2014). Semiparametric modeling of grouped current duration data with preferential reporting. *Statistics in Medicine*, 33:23, 3961–3972.

    – Featured article of the October 2014 issue of Statistics in Medicine.

36. **McLain**[‡] **AC** and Albert P (2014). A random-effects model for longitudinal data with random change-point and no time zero: an application to modeling and prediction of individualized labor curves. *Biometrics* 70 (4), 1052–1060.

37. **McLain**[‡] **AC** and Ghosh S (2013). Efficient sieve maximum likelihood estimation of time-transformation models. *Journal of Statistical Theory and Practice,* 7, 285–303.

38. Thoma ME, **AC McLain**, JF Louis, RB King, AC Trumble, R Sundaram, and GM Buck Louis (2013). The prevalence of infertility in the United States as estimated by the current duration approach and a traditional construct approach. *Fertility and Sterility,* 99, 1324–1331.

    – Link to corresponding news media on Reuters or Mommyish.com discussing the results.
    – Recognized in November 2017 as one of the most highly cited articles in *Fertility and Sterility* since 2012 (link).

39. Albert, P, R Sundaram, and **AC McLain** (2013). Innovative applications of shared random parameter models for analyzing longitudinal data subject to dropout. In ISS-2012 *Proceedings Volume On Longitudinal Data Analysis Subject to Measurement Errors, Missing Values, and/or Outliers,* pp. 139–156. Springer New York.

40. **McLain**[‡] **AC**, K Lum, and R Sundaram (2012). A joint mixed effects dispersion model for menstrual cycle length and time-to-pregnancy. *Biometrics* 68, 648–656.

41. Sun W, and **AC McLain** (2012). Multiple testing of composite null hypotheses in heteroscedastic models. *Journal of the American Statistical Association* 107, 673–687.

42. Sundaram R, **A C McLain**, and G M Buck Louis (2012). A survival analysis approach to modeling human fecundity. *Biostatistics* 13, 4–17.

43. **McLain**[‡] **AC**, R Sundaram, M Cooney, A Gollenberg, and G Buck Louis (2011). Clustering of fecundability within women. *Paediatric and Perinatal Epidemiology* 25, 460–465.

44. **McLain**[‡] **AC** and Ghosh S (2011). Nonparametric estimation of the conditional mean residual life function with censored data. *Lifetime Data Analysis* 17, 514–532.

Collaborative Publications

45. Dugger R, T Williams, S Burkart, Z Xuanxuan, L Reesor-Oyer, C Pfledderer, L von Klingraeff, H Parker, J White III, **AC McLain**, RG Weaver, B Armstrong, MW Beets (2025+). Family and Home Environment Predictors of Children's 24-hour Movement Guideline Adherence: A mixed-methods study. *Childhood Obesity.* (In Press)

46. Bucko[†], AG, B Armstrong, K Cordan, **AC McLain**, and RR Pate (2025+). Longitudinal associations between sleep duration and physical activity in infants and toddlers. *Pediatric Exercise Science* (available online).

47. M Dowda, EA Frongillo, RP Saunders, **AC McLain**, K Cordan, and Pate RR (2025+). Early life, environment, and demographic factors associated with toddlers' objectively measured sedentary behavior between 18 and 36 months. *Journal of Sports Sciences* (available online).

48. Pate RR, M Dowda, **AC McLain**, EA Frongillo, RP Saunders, N Inak, and K Cordan (2025). Longitudinal Change in Physical Activity in Children 6 to 36 Months of Age. *Journal of Pediatrics* 276, 114358.

49. Bell, SO, C Moreau, F Makumbi, D Sarnak, S Kibira, P Anglewicz, P Gichangi, G Guiella, R Mosso, **AC McLain**, M Thoma (2024). Measuring non-events: Infertility estimation using cross-sectional, population-based data from four countries in sub-Saharan Africa. *Human Reproduction* 39:12, 2848–2860.

50. Beets MW, S Burkart, C Pfledderer, E Adams, RG Weaver, B Armstrong, K Brazendale, X Zhu, Z Chen, and **AC McLain** (2024). Free Summer Programming and Body Mass Index Among School-children From Low-Income Households: A Randomized Clinical Trial. *JAMA Pediatrics* 178:12, 1252–1259.

51. Beets MW, S Burkart, C Pfledderer, E Adams, RG Weaver, B Armstrong, K Brazendale, X Zhu, **AC McLain**, B Turner-Mcgrievy, R Pate, A Kaczynski, A Fairchild, B Saelens, and P Hannah (2024). Differences in elementary-age children's accelerometer – measured physical activity between school and summer: three-year findings from the What's UP (Undermining Prevention) with summer observational cohort study. *International Journal of Behavioral Nutrition and Physical Activity* 21:1, 86.

52. von Klinggraeff[†], L, S Burkart, CD Pfledderer, **AC McLain**, B Armstrong, RG Weaver, MW Beets (2024). Balancing Best Practice and Reality in Behavioral Intervention Development: A Survey of Principal Investigators Funded by the National Institutes of Health. *Translational Behavioral Medicine* 14:5, 273–284.

53. Shull[†], ER, KL McIver, **AC McLain**, E Monsma and RR Pate (2024). The Influence of Coaching Behaviors, Experience, and Training on Children's Physical Activity Levels during Youth Sport. *International Journal of Sports Science & Coaching* 19:3, 956–964..

54. Hantman[†] RM, A Zgodic, K Flory, **AC McLain**, J Bradshaw, JM Eberth (2024). Geographic Disparities in Availability of General and Specialized Pediatricians in the U.S. and Prevalence of Childhood Neurodevelopmental Disorders. *The Journal of Pediatrics* 275, 114188.

55. Federico[†] A, A Zgodic, K Flory, R M Hantman, J Eberth, **AC McLain**, J Bradshaw (2024). Predictors of Autism Spectrum Disorder and ADHD: Results from the National Survey of Children's Health. *Disability and Health Journal* 17:1, 101512.

56. Jianyong W, **AC McLain**, R Paul, DB Hood (2024). Association between autism spectrum disorder and environmental quality in the United States. *ISPRS International Journal of Geo-Information* 13:9, 308.

57. Elmore[†] AL, NS Boghossian, **AC McLain**, S McDermott, JL Salemi (2024). Trends in maternal opioid use: Statewide differences by sociodemographic characteristics in Florida from 2000 to 2019. *Journal of Addictive Diseases* 42:4, 524–534.

58. Wende ME, SM Hughey, **AC McLain**, S Hallum, JA Hipp, J Schipperjin, EW Stowe, and AT Kaczynski (2024). Identifying multilevel predictors of behavioral outcomes like park use: A comparison of conditional and marginal modeling approaches. *PLOS ONE* 19:4, e0301549.

59. Yell[†] N, JM Eberth, AJ Alberg, P Hung, M Schootman, **AC McLain**, RF Munden (2024). Comparison of the characteristics of the population eligible for lung cancer screening under 2013 and population newly eligible under 2021 US Preventive Services Task Force recommendations. *Cancer Causes & Control* 35, 1233–1243 .

60. Burch J, A Delage, H Zhang, AC McLain, M Ray, A Miller, S Adams and JR Hébert (2024). Sleep Disorders and Cancer Incidence: Examining Duration and Severity of Diagnosis among Veterans. *Frontiers in Oncology* 14:1336487.

61. von Klinggraeff[†], L, S Burkart, CD Pfledderer, MNS Nishat, B Armstrong, RB Weaver, **AC McLain**, and MW Beets (2023). Scientists' Perception of Pilot Study Quality Was Influenced by Statistical Significance and Study Design. *Journal of Clinical Epidemiology* 159, 70–78.

62. Shull[†], ER, KL McIver, **AC McLain**, E Monsma and RR Pate (2023). Factors associated with children's physical activity during youth soccer practices. *Research Quarterly for Exercise and Sport*. 95:2, 398–404.

63. Wende ME, M Lohman, DB Friedman, **AC McLain**, GE Sarto, AH Shadyab, CE Bird, BW Chrisinger, K Pan, L Garcia, and AT Kaczynski (2023). Neighborhood socioeconomic status, green space, and walkability and risk for falls among postmenopausal women: The Women's Health Initiative. *Women's Health Issues* 33:4, 443–458.

64. Bucko[†], AG, B Armstrong, K Cordan, **AC McLain**, and RR Pate (2023). Longitudinal associations between sleep and weight status in infants and toddlers. *Pediatric Obesity* 18:8, e13056.

65. Wang, X, EE Kishman, J Liu, LA Castleberry, **AC McLain**, JR Sparks, and JW Cook (2023). Body Weight and Fat Trajectories of Black and White Women in the First Year Postpartum. *Obesity* 31:6, 1655–1665.

66. Weaver, RG, B Armstrong, E Adams, MW Beets, J White, K Flory, D Wilson, **AC McLain**, B Tennie (2023). Feasibility & Preliminary Efficacy of Structured Programming and a Parent Intervention to Mitigate Accelerated Summer BMI Gain: A pilot study. *Pilot and Feasibility Studies* 9:83.

67. Nevels[†], TL, MD Wirth, JP Ginsberg, **AC McLain**, and JB Burch (2023). The Role of Sleep and Heart Rate Variability in Metabolic Syndrome: Evidence from the Midlife in the United States (MIDUS II) Study. *Sleep* 46:5, zsad013.

68. Farrell[†], ET, MD Wirth, **AC McLain**, TG Hurley, R Shook, G Hand, JR Hébert, and SN Blair (2023). Associations between the Dietary Inflammatory Index and sleep metrics in the Energy Balance Study (EBS). *Nutrients* 15:2, 419.

69. Kristinsson[†], S, A Basilakos, DB den Ouden, C Cassarly, LA Spell, L Bonilha, C Rorden, AE Hillis, G Hickok, L Johnson, N Hetherington, N Busby, GM Walker, **AC McLain**, and J Fridriksson (2023). Predicting Outcomes of Language Rehabilitation: Prognostic Factors for Immediate and Long-Term Outcomes After Aphasia Therapy. *Journal of Speech, Language, and Hearing Research* 24, 1–7.

70. Crouch, E, J Probst, S Shi, **AC McLain**, JM Eberth, M Brown, M Merrell, K Bennett (2023). Examining the association between rurality and positive childhood experiences among a national sample. *The Journal of Rural Health* 39:1 105–112.

71. Shull[†], ER, M Dowda, K Cordan, **AC McLain**, S Neelon, B Ulrich, and RR Pate (2022). Behavioral, Environmental, and Demographic Factors Associated with Objectively Measured Physical Activity in Infants. *Childhood Obesity* 18:7, 466–475.

72. Newman-Norlund RD, SE Newman-Norlund, SA Sayers, **AC McLain**, N Riccardi, J Fridriksson (2022). Effects of Social Isolation on Quality of Life in Elderly Adults. *PLoS One* 17:11, e0276590.

73. Wirth, MD, D Fekedulegn, ME Andrew, **AC McLain**, JB Burch, JE Davis, JR Hébert, JM Violanti (2022). Longitudinal and Cross-sectional Associations between the Dietary Inflammatory Index and Objectively and Subjectively Measured Sleep among Police Officers. *Journal of Sleep Research* 31:4, e13543.

74. Wirth, M, J Liu, M K Wallace, G Turner-McGrievy, N Ryan, **AC McLain**, J Davis, and J Hébert (2022). Dietary Inflammatory Index and Sleep Quality and Duration among Pregnant Women with Overweight or Obesity. *Sleep* 45:12, zsac241.

75. Eisenberg ML, ME Thoma, and **AC McLain** (2021). Trends in time-to-pregnancy in the USA: 2002 to 2017. *Human Reproduction* 36:8, 2331–2338.

76. Polis, CB, CM Cox, Ö Tunçalp, **AC McLain**, ME Thoma (2021). Comment on the approach of Keiding et al. in applying a current duration approach to Demographic and Health Survey Data. *Epidemiology* 32:5, e16–e17.

77. Wende†, ME, **AC McLain**, S Wilcox, and J Lui (2021). Gestational weight gain disparities in South Carolina: Temporal trends, 2004-2015. *Paediatric and Perinatal Epidemiology* 35:1, 37–46.

78. Wende†, ME, EW Stowe, JM Eberth, **AC McLain**, AD Liese, C Breneman, M Josey, SM Hughey, and AT Kaczynski (2021). Spatial clustering patterns and regional variations for food and physical activity environments across the United States. *International Journal of Environmental Health Research* 31:8, 976–990.

79. Wende†, ME, DM Alhasan, SH Hallum, EW Stowe, JM Eberth, AD Liese, CB Breneman, **AC McLain**, AT Kaczynski (2021). Incongruency of youth food and physical activity environments in the United States: Variations by region, rurality, and income. *Preventive Medicine* 148, 106594.

80. Snyder RA, R Wardrop†, **AC McLain**, A Parikh, and A Cass (2021). Association of Patient Experience With Guideline-Concordant Colon Cancer Treatment in the Elderly. *JCO Oncology Practice* 17:6, e753–e763.

81. Nevels†, TL, JB Burch , M Wirth, JP Ginsberg P Allison, **AC McLain**, D Fekedulegn, ME Andrew, and J Violanti (2021). Shift Work Adaptation Among Police Officers: The BCOPS Study. *Chronobiology International* 38:6, 907–923.

82. Moore S, R Patel, J Stewart, **AC McLain**, and S Heiney (2021) Social inequalities in accelerated aging among southern U.S. women: an analysis of the biosocial and behavioral pathways linking social determinants to telomere length. *Biodemography and Social Biology* 66:2, 118–131.

83. Khan†, SS, **AC McLain**,, BA Olatosi, ME Torres and JM Eberth (2020). Small area estimation of county-level U.S. HIV-prevalent cases. *Annals of Epidemiology* 48, 30–35.

84. Child†, S, AT Kaczynski, KM Walsemann, NL Fleischer, **AC McLain**, and S Moore (2020). Socioeconomic Differences in Access to Neighborhood and Network Social Capital and Associations with Body Mass Index Among Black Americans. *American Journal of Health Promotion* 34:2, 150–160.

85. Burch, JB, JP Ginsberg; **AC McLain**, R Franco, S Stokes, K Susko, W Hendry, E Crowley, A Christ, J Hanna, Al Anderson, J Hébert and M O'Rourke (2020). Symptom Management among Cancer Survivors: Randomized Pilot Intervention Trial of Heart Rate Variability Biofeedback. *Applied Psychophysiology and Biofeedback* 45:2, 99–108.

86. Pate, RR, EA Frongillo, K Cordan, M Dowda, **AC McLain**, ME Torres, WH Brown, A Bucko, ER Shull (2020). Linking Activity, Nutrition, and Child Health (LAUNCH): Protocol for a longitudinal cohort study of children as they develop from infancy to preschool age. *BMC Public Health* 20:1, 1–7.

87. Kaczynski AT, JM Eberth, EW Stowe, ME Wende, AD Liese, **AC McLain**, C Breneman, MJ Josey (2020). Development of a national childhood obesogenic environment index in the United States: Differences by region and rurality. *International Journal of Behavioral Nutrition and Physical Activity* 17:1, 1–11.

88. Perry[†], CM T Singh, KG Springer, AT Harrison, **AC McLain**, and T Herter (2020). Multiple processes independently predict motor learning. *Journal of NeuroEngineering and Rehabilitation* 17:1, 1–19.

89. Bornstein, D, G Grieve, M Clennin, **AC McLain**, L Whitsel, M Beets, K Hauret, B Jones, M Sarzynski (2019). Which U.S. states pose the greatest threats to military readiness and public health? Public health policy implications for a cross-sectional investigation of cardiorespiratory fitness and injuries among U.S. Army Recruits. *Journal of Public Health Management and Practice* 25:1, 36–44.

   – USA Today link and Newsweek link to articles discussing the results.

90. Adeyeye[†], TE EH Yeung, **AC McLain**, S Lin, DA Lawrence, and EM Bell (2019). Wheeze and Food Allergies in Children Born via Cesarean Section - The Upstate KIDS Study. *American Journal of Epidemiology* 188:2, 355–362.

91. Child[†], S, KM Walsemann, AT Kaczynski, NL Fleischer, **AC McLain**, and S Moore (2019). Personal Network Characteristics and BMI: The role of education among Black Americans. *Journal of Public Health* 41:1, 130–137.

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97. Ghassabian, A, R Sundaram, N Chahal, **AC McLain**, EM Bell, DA Lawrence, SE Gilman and Yeung EH (2018). Concentrations of Immune Markers in Newborn Dried Blood Spots and Early Childhood Development: Results from the Upstate KIDS Study. *Paediatric and Perinatal Epidemiology* 32:4, 337–345.

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Focusing on Couple Fertility and Children's Development, the Upstate KIDS Study. *Paediatric and Perinatal Epidemiology* 28, 191–202.

113. Laughon SK, **AC McLain**, R Sundaram, JM Catov and GM Buck Louis (2014). Maternal lipid change in relation to length of gestation: a prospective cohort study with preconception enrollment of women. *Gynecologic and Obstetric Investigation* 77, 6–13.

114. Sapra[†], KJ, **AC McLain**, JM Maisog, R Sundaram, GM Buck Louis (2014). Successive Time-to-Pregnancy Among Women Experiencing hCG Pregnancy Loss. *Human Reproduction* 29, 2553–2559.

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[†]Student Author. [*]Dual first-authors. [‡]Corresponding Author. [⁎]Senior Author.

Student Paper Awards

– International Biometric Society Eastern North American Region's (ENAR) Distinguished Student Paper Award to Anja Zgodic for *"Sparse high-dimensional linear mixed modeling with a partitioned empirical Bayes ECM algorithm,"* Spring 2023.

Technical Reports

– Hantman[†] R, A Zgodic A, JM Eberth, and **AC Mclain**[*][‡] (2022). Using Small-Area Estimation (SAE) to Estimate Prevalence of Child Health Outcomes at the Census Regional-, State-, and County-Levels. U.S. Census Bureau, Center for Economic Studies. Working papers.

Papers in Progress

– **McLain**[‡]**, AC**, A Zgodic[†], H Bondell. Sparse high-dimensional linear regression with a partitioned empirical Bayes ECM algorithm. Revision submitted to the *Journal of Computational and Graphical Statistics*. Link to `probe` R package.

– Zgodic[†], A, R Bai, J Zhang, and **AC McLain**[*][‡]. Sparse high-dimensional linear mixed modeling with a partitioned empirical Bayes ECM algorithm. In revision for *Statistics and Computing*. Link to `lmmprobe` R package.

  · 2023 ENAR Distinguished Student Paper Award Winner.

– Zgodic[†], A, R Bai, J Zhang, Y Wang, and **AC McLain**[*][‡]. Quantifying predictive uncertainty of aphasia severity in stroke patients with sparse heteroscedastic Bayesian high-dimensional regression. Submitted to the *International Journal of Biostatistics*.

- Chen[†], S, J Zhang, J Zhou, **AC McLain**, and J Hardin. Semiparametric Estimations Methods for the Generalized Odds Rate Cure Model with Background Mortality with an application to Breast Cancer. Revision submitted to *Statistical Methods in Medical Research.*

- Vidanapathirana[†], N, Y Wang, **AC McLain**, and S Self. Cluster Detection Capabilities of the Average Nearest Neighbor Ratio and Ripley's K Function on Areal Data: an Empirical Assessment. Submitted to *Spatial Statistics.*

- RR Pate, M Dowda, **AC McLain**, EA Frongillo, RP Saunders, N Inak, and K Cordan. Longitudinal change in physical activity in children 6 to 36 months of age. Revision submitted to the *Journal of Sports Sciences.*

- L von Klinggraeff, CD Pfledderer, S Burkart, K Ramey, M Smith, **AC McLain**, B Armstrong, RG Weaver, T Okely, D Lubans, JPA Ioannidis, E van Sluijs, R Jago, G Turner-McGrievy, J Thrasher, X Li, MW Beets. Are the Risk of Generalizability Biases Generalizable Across Health Behavior Interventions? A Meta-Epidemiological Study. Submitted to *BMC Public Health.*

- Wende ME, MC Lohman, DB Friedman, **AC McLain**, E Whitsel, CJ Crandall, JA Cauley, M Allison, AH Shadyab, S Sealy-Jefferson, L Garcia, S Follis, B Cannell, AT Kaczynski. How neighborhood socioeconomic status, green space, and walkability and risk for fracture among postmenopausal women: The Women's Health Initiative. Submitted to *Journal of Bone and Mineral Research Plus.*

- Cooper, DK, Lupini, F, Alonzo, J, Beets, M, Guastaferro, K, **McLain, AC**, Saini, S, and Prinz, R. The ROOTS parenting intervention to improve child emotional and physical health: Pilot study protocol of a randomized hybrid effectiveness-implementation trial for Black and Latiné families. *Pilot and Feasibility Studies* (under review).

Software

- `probe`: an `R` package that fits a PaRtitiOned empirical Bayes Ecm (PROBE) algorithm to sparse high-dimensional linear regression models. This procedure is a computationally efficient Bayesian variable selection model with minimal prior assumptions on the parameters. See McLain et al. (2022) and Zgodic et al (2023).

- `lmmprobe`: an `R` package extends the PROBE algorithm to sparse high-dimensional linear mixed-effect regression models. See Zgodic et al (2023).

- `wabh`: `R` code to the Weighted Adaptive Benjamini Hochberg (WABH) procedure, which uses p-value weighting to improve the power of high-dimensional multiple testing. See Zhang et al (2023).

- `cdscr`: `R` programs for the analysis of current duration data that is subjected to semi-competing risks. The details of this model are discussed in McLain et al. (2021).

- `phmm`: `R` code to fit a Penalized Heterogeneous Mixture Model (PHMM). The details of the statistical methods can be seen in McLain et al. (2019). These programs estimate confidence and prediction intervals using an asymptotic estimate of the covariance matrix.

- `mnf-sdg-stunting-overweight`: a GitHub repository containing code and sample data for models used by UNICEF, WHO, and the World Bank to generate global health estimates for stunting and overweight (generated using `phmm`). For more, see the documentation from the Joint-Malnutrition-Estimates.

GRANTS

CURRENT

· **Research Center for Child Well-Being**
Source: NIGMS P20GM130420, Period: *3/15/20-2/28/24,*
PI: Prinz, Ron. Role: Core Lead. Effort: 33%. Budget (per year): $2,197,499
Synopsis: I lead the Statistical and Data Management Core (SDM Core) for the Center for Child Well-Being COBRE project. This project will conduct interventions and prevention research aimed at significant health-related behavioral and biomedical problems in children ages 2-10. The Center will address physical inactivity, poor dietary behaviors, childhood obesity, social-emotional problems, poor self-regulation, and aggressive behavior, all of which are critical early influences on health outcomes in adolescence and adulthood.

· **Understanding Community Obesity Initiatives and Informing Tailored Community Interventions to Reduce Childhood Obesity**
Source: NICHD 5 R01 DK129307-02, Period *01/09/21–6/30/24,*
PI: Pate, Russell. Role: Co-I. Effort: 20%. Total Award: $2,645,000.
Synopsis: The proposed study will identify characteristics of community programs and policies that influence children's diet, physical activity, and weight status in communities, schools, and families of different races/ethnicities and socioeconomic groups. The results of this study will provide a better understanding of how to tailor community programs and policies in order to prevent childhood obesity in communities at greatest risk.

· **What's UP (Undermining Prevention) with Summer? Etiology of Accelerated Weight Gain during Summer vs. School Year**
Source: NIDDK 1R01DK116665-01A1, Period *9/18/18–12/31/23,*
PI: Beets, Micheal. Role: Co-I. Effort: 5%. Budget (per year): $658,532.
Synopsis: The goal of this project is to collect information on where children go during summer, what they do when they get there, and how their behaviors (physical activity, sedentary, sleep, and diet) during summer depart from these behaviors during the school year and how these differ between children from low and high-income households.

COMPLETED (PI OR M-PI)

· **Modeling Small-area Estimates of Indicators of Children's Mental Health.**
Source: CDC 5U19DD001218. Period: *9/30/20 – 9/29/23,*
PI: McLain & Eberth, Jan. Role: PI, 13% effort. Total Award: $302,542
Synopsis: The goal of this study is to create model-based, small-area (e.g., county-level) estimates of mental health outcomes among children in the U.S. Specifically, we plan to utilize data from the 2016–2018 National Survey of Children's Health (NSCH), supplemented with auxiliary area-level data from external sources to predict the prevalence (and 95% confidence intervals) of specified mental health outcomes of U.S. children.

· **Estimating population level infertility and fertility treatment rates**
Source: NICHD 1R03HD097287-01, Period *1/19/19–12/30/21,*
PI: McLain. Role: PI. Year 1 and 2 effort: 10%. Total Award: $161,710.
Synopsis: The overall goal of this proposal is to develop a semi-competing risk current duration statistical methodology for nationally representative cross-sectional data, which correctly accounts for

fertility treatment as a semi-competing risk and use it to estimate the magnitude and trends in infertility, identify high-risk subgroups, and monitoring the availability of fertility treatment.

· **Creating Small Area Estimates Using Weighted, Multilevel Prediction Models: An Application for the National Survey of Children's Health**
Source: CDC/NNPHI Subaward No. G1418   Period *4/1/19–7/30/20,*
PI: McLain.   Role: PI. Effort: 25%. Total Award: $157,761.
Synopsis: The goal of this project is to create model-based, small-area (e.g., county-level) estimates of mental health outcomes among children in the U.S. Specifically, we plan to utilize data from the 2016 & 2017 National Survey of Children's Health (NSCH), supplemented with auxiliary area-level data from sources such as the American Community Survey to predict the prevalence (and 95% confidence intervals) of specified mental health outcomes of U.S. children.

· **Analysis of Country-Level Models for Sustainable Developmental Goals 2.2: Stunting and Overweight**
Source: UNICEF/WHO.   Period: *1/1/19–12/31/22,*
PI: McLain & Frongillo.   Role: PI, 20% effort. Total Award: $144,000
Synopsis: In this project I worked with Dr. Edward Frongillo and collaborators from the World Bank, UNICEF and the WHO. The goal of the project is to extend our previous developed statistical approaches for estimating the prevalence of various malnutrition parameters for countries in Africa to counties world-wide.

· **Comparison of methods used to estimate the global burden of nutrition-related disease conditions: SGA, anthropometry, and breastfeeding.**
Source: Bill & Melinda Gates Foundation,   Period: *3/1/18–12/31/18,*
PI: McLain & Frongillo.   Role: PI, 10% effort. Total Award: $23,842.
Synopsis: The Institute for Health Metrics and Evaluation (IHME) is a main information source of information for global burden of disease (GBD). Other entities that produce GBD estimates include the Child Health Epidemiology Reference Group (CHERG/LiST), among others. This project we compare the statistical methods, inputs, and assumed links between risk factors and outcomes used by IHME, CHERG and others to estimate the GBD due to gestational age, stunting, wasting, sub-optimal breastfeeding and maternal BMI.

· **Modeling Child Malnutrition Trend Estimates at the Country Level.**
Source: World Bank.   Period: *1/16–12/16,*
PI: McLain & Frongillo.   Role: PI, 20% effort. Total Award: $35,569
Synopsis: In this project I worked with Dr. Edward Frongillo and collaborators from the World Bank, UNICEF and the WHO. The goal of the project was to develop a statistical approach for estimating the prevalence of various malnutrition parameters for countries in Africa using published survey data.

· **Development of Sampling Weights for the Adult Tobacco Survey**
Source: SC DHEC   Period *1/1/17–4/30/19 ,*
PI: McLain.   Role: PI. Effort: 10%. Total Award: $27,798.

· **Interpersonal Agreement (IPA) with the Division of Intramural Population Health Research, NICHD.**
Source: NIH.   Period: *9/13–8/15,*
PI: McLain.   Role: PI, 20% effort. Total Award: $53,200
Synopsis: In this project, I developed methodology for the analysis of fecundity data, including the current duration approach. Also, I served as a lead statistician for "The Upstate Kids Study" which was designed to determine the impact of fertility treatment through three years of age.

· Physical Activity, Sedentary Behavior and Weight Status in Early Childhood
  Source: NICHD 1R01HD091483,   Period *12/01/17–11/30/22,*
  PI: Pate, Russell.   Role: Co-I. Effort: 10%. Total Award: $2,897,000.
  Synopsis: This study will describe physical activity and sedentary behaviors and examine the longitudinal influences of those behaviors on weight status in a cohort of infants and toddlers, ages 6 months – 36 months.

· Role of Circadian Factors in Inflammation and Colorectal Adenoma Risk.
  Source: NCI 1R01CA231321-01A1.   Period: *7/1/19 - 6/30/21,*
  PI: Burch, Jim.   Role: Co-I, 10% effort. Budget (per year): $728,379

· Integrated Data Analysis of Determinants of Low-Dose CT Screening for Lung Cancer
  Source: NCI 1R21CA234295-01A1,   Period *09/09/20–08/31/22,*
  PI: Eberth, Jan.   Role: Co-I. Effort: 15%. Total Award: $314,193.
  Synopsis: Our primary goal is to identify disparities in low-dose computed tomography (LDCT) screening uptake across geographic regions, and related modifiable factors at the individual level.

· Creating County- and Census Tract-Level Estimates of Childhood Obesity in the U.S.A: Spatial Multilevel Modeling Approach
  Source: FORHP (5U1CRH30539-02-00)   Period *9/01/17–8/31/18,*
  PI: Probst, Jan and Eberth, Jan.   Role: Co-I. Effort: 11%. Total Award: $173,000.

· HRV Biofeedback in Pain Patients: Pilot Intervention for Pain, Fatigue & Sleep.
  Source: VA Merit (I01BX007080).   Period: *4/1/15-12/31/19,*
  PI: Ginsberg, Jay and Burch, James.   Role: Co-I, 10% effort. Total Award: $647,858

· **Aging Brain Cohort at the University of South Carolina (ABC@USC)**
  Source: U of SC Excellence Initiative,   Period *5/01/19–4/30/24,*
  PI: Fridriksson, Julius.   Role: Co-I. Effort: In-kind. Total Award: $4,469,030.

· Abnormal Visual Search And Motor Function In Stroke.
  Source: AHA AWRP (17GRNT33670098),   Period: *7/1/17–6/30/19,*
  PI: Herter, Troy.   Role: Co-I, 2.1% effort. Total Award: $154,000.

· Development of Smoking Estimates for South Carolina Using Weighted, Multilevel Prediction Models.
  Source: CDC/SC DHEC.   Period: *9/14–9/16,*
  PI: Oldendick and Eberth.   Role: Co-I, 15% effort. Total Award: $93,569

· Effects of sleep deficiency during postpartum on body weight and body fat changes in African American and White women
  Source: NIH/NIMHD R21MD012740.   Period: *6/6/18-1/31/20,*
  PI: Wang, Xuewen.   Role: Co-I, 5% effort. Total Award: $184,865

Mentoring

Ongoing

Advisor

· Md. Nasim Saba Nishat - RA Advisor   *2021-,*
  PhD candidate in Biostatistics
  Winner of 2023-2024 SPARC research grant.

· Peter Olejua - RA Advisor   *2021-,*
  PhD candidate in Biostatistics.

· Siyu Zheng - Dissertation Advisor   *2020-,*
  PhD candidate in Biostatistics.

· Liela Meng - Dissertation Advisor   *2023-,*
  PhD candidate in Biostatistics.

Statistical Advisor for Training Awards

· Layton Reesor-Oyer, PhD (Exercise Science) F32 grant   *2022-,*

· James White (PhD candidate in Exercise Science) F31 grant   *2022-,*

Dissertation Committee Member

· *Biostatistics:* Shujie Chen, Xiaowen Sun, Rongjie Huang, Xingpei Zhao, Ruilie Cai.

· *Epidemiology:* Samuel Gavi, Jameson Sofge, Marion Granger, Mansi Verma.

· *Other:* Prasun K Dev (Exercise Science), Sumaiya Khan (HPEB), Qinyan Shen (Statistics)

Completed

Advisor

· Anja Zgodic - PhD in Biostatistics   *2020-2022,*
  Dissertation: *Sparse Partitioned Empirical Bayes ECM algorithms for High-Dimensional Linear Mixed Effects and Heteroscedastic Regression*
  Current employer: Data Scientist at Lubrizol.
  Winner of the 2023 ENAR Distinguished Student Paper Award.
  Winner of the Ellis R. Ott Scholarship from the Statistics Division of the American Society for Quality

· Thomas LaBone - PhD in Biostatistics   *2016-2022,*
  Dissertation: *Bayesian Calibration of the ICRP Zirconium Biokinetic Model and Use of Canned Priors for the Evaluation of Bioassay*
  Current employer: MJW Companies.

· Yuan Hong - PhD in Biostatistics   *2015-2020,*
  Dissertation: *Incorporation and Measurement of Uncertainty in Longitudinal and Spatial Data*
  Current employment: Data Scientist at Bayer Corporation.

· Caroline Mulatya - PhD in Biostatistics   *2013-2016,*
  Dissertation: *Novel Methods for Analyzing Longitudinal Data with Measurement Error in Time variable*
  Current employment: Statistician at Regenxbio.

· Yifang Tang - MSPH in Biostatistics   *2014-2015,*
  Thesis: *Cluster Analysis with Batch Effect*
  Current employment: QM Data Analyst at Community Health Center Network.

· Nicole Nasrallah - MSPH in Biostatistics   *2020-2021,*
  Thesis: *Measurement error in current duration data*
  Current employment: Data Analyst at Merz Pharmaceuticals.

· Mary Reither - Honors College BS in Statistics *2015-2017,*
Thesis: *Development of Confidence Intervals when the True Proportion is Close to Zero and its Medical Applications*
Current employment: Statistician at Encore Capital Group.

· Robin Estrada - Statistical advisor on K23 grant *2017-2020,*
Current employment: Associate Professor in the Department of Biobehavioral Health & Nursing Science at USC.

· Sarah Burkart - Statistical advisor on F32 grant *2020-2022,*
Current employment: Assistant Professor in the Department of Exercise Science at USC.

Dissertation Committee Member

· *Biostatistics:* Siyuan Guo, Xizhi Luo, Jie Zhou, Akhtar Hossain, Xingling Xu, Xin Tong, Sophia Maymyers, Tammy Harris

· *Epidemiology:* Deborah Hurley, Alecia Alianell, Torrance Nevels, Mark Guinter, Temilayo Adeyeye, Sazid Kahn, James Winstead, Michele Josey, Malcom Bevel, Nicholas V. Resciniti, Christian Alvarad, Amanda Elmore, Lauren Martini.

· *Statistics:* Md Shamim Sarker Warasi, Peijie Hou, Chuan-Fa Tang, Piaomu Liu, Bin Yao, William Cipolli.

· *Environmental Health Science:* Daniel Kilpatrick

· *Exercise Science:* Emily Shull, Agnes Bucko, Roddrick Dugger, Lauren von Klinggraeff.

· *Health Promotion Education and Behavior:* Marilyn Wende

· *Health Services Policy and Management:* Chelsea Norregaard

Masters Committee Member

· *Biostatistics:* Nadeesha Vidanapathirana, Xingpei Zhao, Myra Robinson, Jie Zhou, Farahnaz Islam, Shujie Chen.

· *Epidemiology:* Favel Mondesir, Katie O-Sheilds, Chelsea Lynes, Kristen Polinski, LaQuenta L. Weldon, Stephine Clugstone, Bryn Davis, Marilyn Wende, Andrew Broadway, Samuel Godfrey

· *Health Promotion Education and Behavior:* Anna Mesa

Teaching

Courses Taught

· Biostatistical Machine Learning for Public Health, BIOS 835	*Fall 2023*
· Introduction to Longitudinal Data Analysis, BIOS 755	*Spring 2017–2025*
· Introduction to R programing, BIOS J711	*Fall 2020–2022*
· Multivariate Biostatistics, BIOS 825	*Spring 2016, 2019, Fall 2021*
· Applied Longitudinal Data Analysis, BIOS 770/STAT 771	*Spring 2016,*
· Doctoral Seminar, BIOS 845	*Spring 2015,*
· Biostatistical Methods for Rates and Proportions, BIOS 759	*Fall 2013–2015, 2017*

· Intermediate Biometrics, BIOS 757   *Spring 2013 & 2014,*

· Applied Multivariate Analysis,   *Spring 2012,*
   STAT 6216, Department of Statistics, The George Washington University.

· *Co-Lecturer:* DESPR Summer Course,   *Summer 2011,*
   Seminar Topics - "Writing a paper: Methods and Results," "Survival Analysis," and "High-Dimensional Data Analysis."

· Probability and Statistics for Engineers,   *Fall 2008, Spring 2009,*
   STAT 370, Department of Statistics, North Carolina State University.

· Introduction to Descriptive Statistics,   *Spring 2006, 2008,*
   STAT 110, Department of Statistics, University of South Carolina.

· Statistics for Engineers,   *Fall 2007,*
   STAT 509, Department of Statistics, University of South Carolina.

· Elementary Statistics,   *Fall 2003, 2004, Spring 2004, 2005,*
   STAT 201, Department of Statistics, University of South Carolina.

*All courses taught in the Department of Epidemiology and Biostatistics at the University of South Carolina unless noted otherwise.

Selected Talks and Seminars (since 2015)

· *Integrating Side Information in Bayesian Variable Selection via Variational Inference,*
   Joint Statistical Meetings, Portland, OR   *August 2024.*

· *Bayesian Spatio-temporal Regression Models for Group Testing Data,*
   Joint Statistical Meetings, Portland, OR   *August 2024.*

· *A Partitioned Empirical Bayes ECM Algorithm for Computationally Efficient and Accurate High-Dimensional Regression*,*
   Statistics Department Colloquium, Columbia, SC   *March 2024.*

· *Parameter Expanded Variational Bayes for Sparse High-Dimensional Linear Regression*,*
   Joint Statistical Meetings, Toronto, ON   *August 2023.*

· *Differing Longitudinal Associations Between Dysbiosis-Related Medication and Dementia Among Cognitively Healthy and Mild Cognitive Impairment,*
   Alzheimer's Association International Conference (AAIC)   *Aug 2023.*

· *Weighting and Validation of the Childhood Obesogenic Environment Index in the United States,*
   ISBNPA Annual Scientific Meeting   *June 2023.*

· *Sparse high-dimensional linear mixed modeling with a partitioned empirical Bayes ECM algorithm,*
   ENAR Spring Meeting, Nashville, TN   *March 2023.*
   *Anja Zgodic won the ENAR Distinguished Student Paper Award for this research.

· *Weighted p-values for heterogeneous dependent data: an application to voxel-based lesion-symptom mapping,*
   South Carolina ASA Meeting, Columbia, SC   *March 2023.*

- *Trends in Diagnoses of Maternal Opioid Use and Neonatal Abstinence Syndrome by Race/Ethnicity, Insurance Type, and Education Level, Florida 1998-2018,*
  Society for Maternal-Fetal Medicine   *March 2023.*
- *Postpartum mental health hospital encounters among mothers with prenatal opioid use,*
  Society for Maternal-Fetal Medicine   *March 2023.*
- *Longitudinal Associations Between Sleep and Physical Activity in Infants and Toddlers,*
  South Eastern American College of Sports Medicine   *Feb 2023.*
- *Joint modeling of survival and backwards recurrence outcomes: an analysis of factors associated with fertility treatment*,*
  Memorial Sloan-Kettering Cancer Center (invited talk)   *March 2022.*
- *Sparse Bayesian Expectation-Maximization Algorithm for High-Dimensional Linear Mixed Models,*
  Joint Statistical Meetings   *August 2022.*
- *Systems Supporting Clinically Salient Language Deficits,*
  Society for the Neurobiology of Language Annual Conference   *October 2022.*
- *Estimates of Childhood Overweight and Obesity at the Region, State, and County Levels: A Multilevel Small Area Estimation Approach,*
  Conference on Statistical Practice   *Feb 2021.*
- *Estimates of Childhood Overweight and Obesity at the Region, State, and County Levels: A Multilevel Small Area Estimation Approach,*
  South Carolina ASA Meeting, Columbia, SC   *March 2021.*
- *Reflections and explanations on GBD 2017 and 2019 methods: Suggestions on a way forward*,*
  [re]Connected Webinar, watch on YouTube   *April 2021.*
- *Longitudinal and Cross-sectional Associations between the Dietary Inflammatory Index and Objectively and Subjectively Measured Sleep among Police Officers,*
  Nutrition Symposium, Columbia, SC   *April 2021.*
- *Longitudinal and Cross-sectional Associations between the Dietary Inflammatory Index and Objectively and Subjectively Measured Sleep among Police Officers,*
  Society for Epidemiologic Research (SER) Annual Meeting, San Diego, CA   *June 2021.*
- *Cortical Reorganization Supporting Therapy-Induced Language Recovery in Chronic Aphasia: A Large-Scale Clinical Trial,*
  Society for the Neurobiology of Language Annual Conference   *October 2021.*
- *Population Zirconium Biokinetic Model,*
  Oak Ridge National Laboratory   Oak Ridge, TN *Nov 2021.*
- *Self-reported patient experience and quality of care among elderly patients with colon cancer,*
  Gastrointestinal Cancers Symposium, San Francisco, CA   *Jan 2020.*
- *Trajectories of Self-Reported Sleep Quality in Active Duty Army Soldiers,*
  Association of Military Surgeons of the United States Annual Meeting, Oxon Hill, MD   *Dec 2019.*
- *Examining spatial clustering patterns and regional and rurality variations of physical activity environments in the United States,*
  APHA 2019 Annual Meeting & Expo, Philadelphia, PA   *Nov 2019.*

- *Childhood Obesogenic Environment Index: Region and Rurality Differences Across the United States,*
  APHA 2019 Annual Meeting & Expo, Philadelphia, PA   *Nov 2019.*

- *Joint Model to Dynamically Predict Co-morbidity Risks for Chronic Disease Patients,*
  Discover USC, Columbia, SC   *April 2019.*

- *Randomized Trial of Heart Rate Variability Biofeedback for Improved Cognitive Function,*
  Discover USC, Columbia, SC   *April 2019.*

- *Heart Rate Variability Biofeedback for Pain, Stress, Fatigue, and Depression among Veterans,*
  AAPB Annual Meeting, Denver, CO   *March 2019.*

- *Randomized Trial of Heart Rate Variability Biofeedback for Improved Cognitive Function,*
  AAPB Annual Meeting, Denver, CO   *March 2019.*

- *Cross-sectional length-biased semi-competing risks data**,*
  Joint Statistical Meetings Denver, CO   *August 2019.*

- *Weighted p-values for heterogeneous dependent data: an application to voxel-based lesion symptom mapping**,*
  International Chinese Statistical Association, Raleigh, NC   *March 2019.*

- *Weighted p-values for heterogeneous dependent data: an application to voxel-based lesion symptom mapping,**
  Department of Public Health Sciences,
   Medical University of South Carolina, Charleston, SC   *October 2018.*

- *Trends in Gestational Weight Gain in South Carolina, 2004 - 2015,*
  The American Public Health Association, San Diego, CA   *November 2018.*

- *Heart Rate Variability Biofeedback among Veterans: Pilot Intervention for Pain, Stress, Fatigue, Depression, and Sleep Disturbance,*
  Veterans Association Southeast Network Meeting   *November 2018.*

- *Residential segregation and racial bias: Understanding the role of urban/rural residence,*
  Ninth Biennial Conference of the Urban History Association, Columbia, SC   *July 2018.*

- *Personal Network Characteristics of Black Americans: Associations with Body Mass Index and the Role of Education,*
  APHA 2017 Annual Meeting & Expo, Atlanta, GA   *Nov 2017.*
  *Honorable Mention for the Betty J. Cleckley Minority Research Award (presented by Stephanie Child).

- *Public health implications for an investigation of state-level associations between cardiorespiratory fitness and BMI with training-related injuries among US Army Recruits,*
  APHA 2017 Annual Meeting & Expo, Atlanta, GA   *Nov 2017.*

- *Distribution Of Cardiorespiratory Fitness Levels Of US Army Recruits From 2010-2013 By State,*
  ACSM's 2017 Annual Meeting and World Congresses, Denver, CO   *June 2017.*

- *Light Intensity Physical Activity and Cardiometabolic Risk Factor Control Among Middle-Aged and Older-Adults,*
  Society for Epidemiologic Research 50th Annual Meeting, Seattle, WA   *June 2017.*

- *Wheeze and Food Allergies in Children Born via Cesarean Section - The Upstate KIDS Study,*
  30th Annual Meeting for Society for Pediatric and Perinatal Epidemiologic
    Research (SPER), Seattle, WA   *June 2017.*
- *Using Spatial Mixed Models for Small Area Estimation: An Application using 2014-2015 SC Adult Tobacco Survey Data,*
  National Conference on Tobacco or Health, Austin, TX   *March 2017.*
- *Comparison of methods used to estimate the global burden of nutrition-related disease conditions: Preterm birth, anthropometry, and breastfeeding,**
  Program in International and Community Nutrition,
    University of California Davis (invited talk)   *July 2017.*
- *Comparison of methods used to estimate the global burden of nutrition-related disease conditions: Preterm birth, anthropometry, and breastfeeding**,
  The Bill & Melinda Gates Foundation (invited talk), Seattle, WA   *July 2017.*
- *An innovative small area estimation approach for estimating county-level tobacco use and exposure**,
  SC Alcohol Tobacco Survey Monthly Meeting Columbia, SC   *May 2017.*
- *Analysis of current duration data: modeling strategies and competing risks**,
  Lifetime Data Analysis Conference, Storrs, CT   *May 2017.*
- *Prediction Intervals for Penalized Longitudinal Small Area Estimation Models**,
  International Conference on Advances in Interdisciplinary
    Statistics and Combinatorics, Greensboro, NC   *October 2016.*
- *An innovative small area estimation approach for estimating county-level tobacco use and exposure**,
  Conference on Geospatial Approaches to Cancer Control
    and Population Sciences, Bethesda, MD   *September 2016.*
- *An innovative small area estimation approach for estimating county-level tobacco use and exposure**,
  National Association of Chronic Disease Directors Science,
    Epidemiology and Evaluation Committee Monthly Webinar   *July 2016.*
- *Penalized spline mixed effects model with random time shift; an application to labor curves**, (invited session)
  International 2016 ICSA Applied Statistics Symposium, Atlanta, GA   *June 2016.*
- *Modeling country level child malnutrition prevalence**,
  Regional Consultations on Modeled Child Malnutrition Country Trends,
    Cape Town, South Africa   *June 2016.*
- *Modeling country level child malnutrition prevalence**,
  Regional Consultations on Modeled Child Malnutrition Country Trends,
    UNICEF Headquarters Nairobi, Kenya   *June 2016.*
- *An innovative small area estimation approach for estimating county-level tobacco use and exposure**,
  SC Alcohol Tobacco Survey Monthly Meeting Columbia, SC   *May 2016.*
- *Estimating the Prevalence of Infertility in Nigeria: Application of a Current Duration Methodological Approach to Demographic and Health Survey Data,*
  Population Association of America Annual Meeting, Washington, DC   *April 2016.*
- *Impact of Maternal Obesity on Neonatal Markers of Inflammation and Immune Response,*
  2016 Epidemiology Congress of the Americas, Miami, FL   *June 2016.*

- *Impact of Maternal Obesity on Neonatal Markers of Inflammation and Immune Response,*
Society for Pediatric and Perinatal Epidemiologic Research Annual Meeting, Miami, FL   *June 2016.*
- *Impact of Maternal Smoking on Neonatal Markers of Inflammation and Immune Response,*
Pediatric Academic Societies, Baltimore, MD   *May 2016.*
- *Impact of Maternal Smoking on Neonatal Markers of Inflammation and Immune Response,*
NIH Postbac Poster Day, Bethesda, MD   *April 2016.*
- *Competing risks model for cross-sectional sampled length biased data,** (topic contributed session)
Joint Statistical Meetings, Seattle, WA   *August 2015.*
- *Count Regression Models that Simultaneously Model Heaping Propensity via Scaled Distributions,*
60th World Congress of the International Statistics Institute, Rio de Janeiro, Brazil   *July 2015.*
- *Accuracy of self-reported survey data on ART treatment and reproductive history from the Upstate KIDS study,*
71st American Society for Reproductive Medicine Annual Meeting, Baltimore, MD   *October 2015.*
- *Estimating time to event characteristics via longitudinal threshold regression models - an application to cervical dilation progression,*
Joint Statistical Meetings, Seattle, WA   *August 2015.*
- *Illness-related diabetes social support and glycemic control among middle-aged and older adults,*
American Public Health Association Annual Meeting, New Orleans, LA   *November 2014.*
- *Newborn blood spot measured adipokines in association with infant growth to 18 months: the Upstate KIDS study,*
The Obesity Society's 2014 Annual Scientific Meeting, Boston, MA   *November 2014.*
- *Estimating Time to Cervical Dilation Progression Longitudinal Threshold Regression Model versus Interval-Censored Survival Model,*
South Carolina Statistics Consortium, Clemson, SC   *November 2014.*
- *Novel Statistical Methods for Individualized Prediction with Applications to Obstetrical Practice,*
Division of Intramural Research, National Institutes of Health, Bethesda, MD   *October 2014.*
- *Analysis of current duration data: modeling strategies and competing risks,** (Invited)
Statistics Colloquia, University of South Carolina, Columbia, SC   *October 2014.*
- *Successive time-to-pregnancy among women experiencing hCG pregnancy loss,* (Doctoral Student Prize Paper)
American College of Epidemiology Annual Meeting, Silver Spring, MD,   *September 2014.*
- *Clustering of Retrospectively Reported and Prospectively Observed Time-To-Pregnancy Among Women in a Preconception Cohort,*
American College of Epidemiology Annual Meeting, Silver Spring, MD,   *September 2014.*
- *Eliciting Parental Support for the Use of Newborn Blood Spots for Population Health Research,*
American College of Epidemiology Annual Meeting, Silver Spring, MD,   *September 2014.*
- *Efficiency of longitudinal first-hitting time models versus interval censored survival analysis with application to labor duration curves,** (topic contributed session)
Joint Statistical Meetings, Boston, MA   *August 2014.*
- *Regression Models for Heaped Data,* (topic contributed session)
Joint Statistical Meetings, Boston, MA   *August 2014.*

· *Successive time-to-pregnancy among women experiencing hCG pregnancy loss,*
Society for Pediatric and Perinatal Epidemiologic Research Annual Meeting, *June 2014.*

· *Blood spot adiponectin and infant birth size,*
Society for Pediatric and Perinatal Epidemiologic Research Annual Meeting, *June 2014.*

· *The estimation of infertility prevalence in the United States - application of a current duration approach to a nationally representative sample,* (invited)
Intramural Research Program on Reproductive and Adult Endocrinology,
  NICHD, NIH, Bethesda, MD *June 2014.*

· *Modeling Longitudinal Data with a Random Changepoint and no Time-Zero: Applications to Inference and Prediction of the Labor Curve,** (invited)
Reproductive, Environmental and Child Health (REACH) Seminar
  Medical University of South Carolina, Charleston, SC *June 2014.*

· *Modeling Longitudinal Data with a Random Changepoint and no Time-Zero: Applications to Inference and Prediction of the Labor Curve,* (invited)
Statistical Analysis of Multi-Outcome Data Workshop, Cambridge, UK *June 2014.*

*Presenter