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Education

Ph.D., Biostatistics, University of Michigan, Ann Arbor, Michigan, 2011

Dissertation: Improving Small-Sample Inference in Group Randomized Trials and Other Sources of Correlated Binary Outcomes

Committee: Dr. Thomas M. Braun (advisor), Dr. John D. Kalbfleisch, Dr. Susan A. Murphy, and Dr. Peter X. K. Song

M.S., Biostatistics, University of Michigan, Ann Arbor, Michigan, 2008

B.S., Statistics, Actuarial Science, Central Michigan University, Mount Pleasant, Michigan, 2006

Professional Experience

Associate Professor

July, 2017 - Present

University of Kentucky, Department of Biostatistics, Lexington, Kentucky

Assistant Professor

August, 2011 - June, 2017

University of Kentucky, Department of Biostatistics, Lexington, Kentucky

Graduate Student Research Assistant

September 2006 - July 2011

University of Michigan, Department of Biostatistics, Ann Arbor, Michigan

Professional Memberships

American Statistical Association, 2004-present

Eastern North American Region, International Biometric Society, 2009-present

Kentucky Chapter of the American Statistical Association, 2013-present

Awards

Best First-Year Master's Student Award for 2006-2007 school year, Department of Biostatistics, University of Michigan

NIH Biostatistics Training Program in Research in the Biosciences, Ann Arbor, Michigan, September 2008 to August 2010

Rackham Travel Grant (Summer, 2010; Winter, 2010)

Dean's Outstanding Teaching Performance Award, 2017-2018, College of Public Health, University of Kentucky

Peer-Reviewed Publications

Senior-author and Co-First-author manuscripts indicated by underline
*First-author advisees indicated by asterisk**

1. **Westgate PM**, Braun TM. Improving Small-Sample Inference in Group Randomized Trials with Binary Outcomes. *Statistics in Medicine* 2011; **30**: 201–210. <http://onlinelibrary.wiley.com/doi/10.1002/sim.4101/full>
2. **Westgate PM**, Braun TM. The Effect of Cluster Size Imbalance and Covariates on the Estimation Performance of Quadratic Inference Functions. *Statistics in Medicine* 2012; **31**: 2209–2222. <http://onlinelibrary.wiley.com/doi/10.1002/sim.5329/full>
3. **Westgate PM**. A Bias-Corrected Covariance Estimate for Improved Inference with Quadratic Inference Functions. *Statistics in Medicine* 2012; **31**: 4003–4022. <http://onlinelibrary.wiley.com/doi/10.1002/sim.5479/full>
4. Martinez CH, Chen Y, **Westgate PM**, Liu LX, Murray S, Curtis JL, Make BJ, Kazerooni EA, Lynch DA, Marchetti N, Washko GR, Martinez FJ, Han MK, COPDGene Investigators. Relationship between Quantitative CT Metrics and Health Status and BODE in Chronic Obstructive Pulmonary Disease. *Thorax* 2012; **67**: 399–406. <http://thorax.bmj.com/content/67/5/399.short>
5. Zach JA, Newell Jr JD, Schroeder J, Murphy JR, Curran-Everett D, Hoffman EA, **Westgate PM**, Han MK, Silverman EK, Crapo JD, Lynch DA, COPDGene Investigators. Quantitative CT of the Lungs and Airways in Healthy Non-smoking Adults. *Investigative Radiology* 2012; **47**: 596–602. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3703944/>
6. **Westgate PM**. A Bias Correction for Covariance Estimators to Improve Inference with Generalized Estimating Equations that Use an Unstructured Correlation Matrix. *Statistics in Medicine* 2013; **32**: 2850–2858. <http://onlinelibrary.wiley.com/doi/10.1002/sim.5709/full>

7. **Westgate PM**, Braun TM. An Improved Quadratic Inference Function for Parameter Estimation in the Analysis of Correlated Data. *Statistics in Medicine* 2013; **32**: 3260–3273. <http://onlinelibrary.wiley.com/doi/10.1002/sim.5715/full>
8. **Westgate PM**. A Bias-Corrected Covariance Estimator for Improved Inference when Using an Unstructured Correlation with Quadratic Inference Functions. *Statistics and Probability Letters* 2013; **83**: 1553–1558. <http://www.sciencedirect.com/science/article/pii/S0167715213000710>
9. **Westgate PM**. On Small-Sample Inference in Group Randomized Trials with Binary Outcomes and Cluster-Level Covariates. *Biometrical Journal* 2013; **55**: 789–806. <http://onlinelibrary.wiley.com/doi/10.1002/bimj.201200237/abstract?userIsAuthenticated=false&deniedAccessCustomisedMessage=>
10. **Westgate PM**. A Comparison of Utilized and Theoretical Covariance Weighting Matrices on the Estimation Performance of Quadratic Inference Functions. *Communications in Statistics - Simulation and Computation* 2014; **43**: 2432–2443. <http://www.tandfonline.com/doi/abs/10.1080/03610918.2012.752839#.VyNimHrYibs>
11. **Westgate PM**. Improving the Correlation Structure Selection Approach for Generalized Estimating Equations and Balanced Longitudinal Data. *Statistics in Medicine* 2014; **33**: 2222–2237. <http://onlinelibrary.wiley.com/doi/10.1002/sim.6106/full>
12. **Westgate PM**. Criterion for the Simultaneous Selection of a Working Correlation Structure and either Generalized Estimating Equations or the Quadratic Inference Function Approach. *Biometrical Journal* 2014; **56**: 461–476. <http://onlinelibrary.wiley.com/doi/10.1002/bimj.201300098/abstract?userIsAuthenticated=false&deniedAccessCustomisedMessage=>
13. Miller CS, **Westgate PM**. Implications of medical screenings of patients arriving for dental treatment: The results of a comprehensive laboratory screening. *The Journal of the American Dental Association* 2014; **145**: 1027–1035. <http://www.sciencedirect.com/science/article/pii/S0002817714601719>
14. Miller CS, **Westgate PM**. Authors' response (to Commentary on “Implications of medical screenings of patients arriving for dental treatment: The results of a comprehensive laboratory screening”). *The Journal of the American Dental Association* 2015; **146**: 76. <http://jada.ada.org/article/S0002-8177%2814%2900082-8/abstract>
15. Fry CS, Noehren B, Mula J, Ubele MF, **Westgate PM**, Kern PA, Peterson CA. Fibre Type-Specific Satellite Cell Response to Aerobic Training in Sedentary Adults. *The Journal of Physiology* 2014; **592**: 2625–2635. <http://onlinelibrary.wiley.com/doi/10.1113/jphysiol.2014.271288/full>
16. Kern PA, Finlin BS, Zhu B, Spencer M, Rasouli N, McGehee RE, **Westgate PM**, Dupont-Versteegden EE. The Effects of Temperature and Seasons on Subcutaneous White Adipose Tissue in Humans: Evidence for Thermogenic Gene Induction. *The*

- Journal of Clinical Endocrinology & Metabolism* 2014; **99**: E2772-E2779. <http://press.endocrine.org/doi/abs/10.1210/jc.2014-2440>
17. Mardini HE, **Westgate PM**, Grigorian AY. Racial Differences in the Prevalence of Celiac Disease in the US Population: National Health and Nutrition Examination Survey (NHANES) 2009-2012. *Digestive Diseases and Sciences* 2015; **60**: 1738-1742. <http://link.springer.com/article/10.1007/s10620-014-3514-7>
 18. Smith-Forbes EV, Moore-Reed SD, **Westgate PM**, Kibler WB, Uhl TL. Descriptive Analysis of Common Functional Limitations Identified by Patients with Shoulder Pain. *Journal of Sport Rehabilitation* 2015; **24**: 179-188. https://works.bepress.com/tim_uhl/96/
 19. Myers NL, Sciascia A, **Westgate PM**, Uhl TL, Kibler WB. Increasing Ball Velocity in the Overhead Athlete: A Meta-Analysis of Randomized Controlled Trials. *The Journal of Strength and Conditioning Research* 2015; **29**: 2964-79. http://journals.lww.com/nsca-jscr/Abstract/2015/10000/Increasing_Ball_Velocity_in_the_Overhead_Athlete__.37.aspx
 20. Walton RG, Finlin BS, Mula J, Long DE, Zhu B, Fry CS, **Westgate PM**, Lee JD, Bennett T, Kern PA, Peterson CA. Insulin Resistant Subjects Have Normal Angiogenic Response to Aerobic Exercise Training in Skeletal Muscle, but Not in Adipose Tissue. *Physiological Reports* 2015; **3**: e12415. <http://physreports.physiology.org/content/3/6/e12415.abstract>
 21. Maul E, Latham B, **Westgate PM**. Saving Time under Pressure: Effectiveness of Standardizing Pediatric Resuscitation Carts. *Hospital Pediatrics* 2016; **6**: 67-71. <http://hosppeds.aappublications.org/content/early/2016/01/20/hpeds.2015-0161>
 22. **Westgate PM**. A Covariance Correction that Accounts for Correlation Estimation to Improve Finite-Sample Inference with Generalized Estimating Equations: A Study on its Applicability with Structured Correlation Matrices. *Journal of Statistical Computation and Simulation* 2016; **86**: 1891-1900. <http://www.tandfonline.com/doi/abs/10.1080/00949655.2015.1089873>
 23. Raithatha R, Powell ES, Carrico C, **Westgate PM**, Chelette II KC, Lee K, Dunsmore L, Salles S, Sawaki L. Non-Invasive Brain Stimulation and Robot-Assisted Gait Training After Incomplete Spinal Cord Injury: A Randomized Pilot Study. *NeuroRehabilitation* 2016; **38**: 15-25. <http://content.iospress.com/articles/neurorehabilitation/nre1291>
 24. Ickes MJ, McMullen J, Pflug M, **Westgate PM**. Impact of a University-based Program on Obese College Students' Physical Activity Behaviors, Attitudes, and Self-efficacy. *American Journal of Health Education* 2016; **47**: 47-55. <http://www.tandfonline.com/doi/abs/10.1080/19325037.2015.1111178>

25. Supinski GS, **Westgate PM**, Callahan LA. Correlation of Maximal Inspiratory Pressure to Transdiaphragmatic Twitch Pressure in Intensive Care Unit Patients. *Critical Care* 2016; **20**: 77. <http://ccforum.biomedcentral.com/articles/10.1186/s13054-016-1247-z>
26. Carrico C, Chelette KC 2nd, **Westgate PM**, Salmon-Powell E, Nichols L, Sawaki L. Randomized Trial of Peripheral Nerve Stimulation to Enhance Modified Constraint-Induced Therapy After Stroke. *American Journal of Physical Medicine and Rehabilitation* 2016; **95**: 397–406. <http://europepmc.org/abstract/med/26945226>
27. **Westgate PM**. Intra-Cluster Correlation Selection for Cluster Randomized Trials. *Statistics in Medicine* 2016; **35**: 3272–3284. <http://onlinelibrary.wiley.com/doi/10.1002/sim.6922/abstract>
28. **Westgate PM**, Burchett WW. Improving Power in Small-Sample Longitudinal Studies when Using Generalized Estimating Equations. *Statistics in Medicine* 2016; **35**: 3733–3744. <http://onlinelibrary.wiley.com/doi/10.1002/sim.6967/full>
29. Fogel JS, Kelly TH, **Westgate PM**, Lile JA. Sex Differences in the Subjective Effects of Oral Δ^9 -THC in Cannabis Users. *Pharmacology, Biochemistry and Behavior* 2017; **152**: 44–51. <http://www.sciencedirect.com/science/article/pii/S0091305716300077>
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31. Scott SL, **Westgate PM**, McSpirit SM. The Long-Term Effects of a Coal Waste Disaster on Social Trust in Eastern Kentucky Updated. *Journal of Appalachian Studies* 2016; **22**: 261–274. <http://www.jstor.org/stable/10.5406/jappastud.22.2.0261>
32. Carrico C, Chelette II KC, **Westgate PM**, Powell E, Nichols L, Fleischer A, Sawaki L. Nerve Stimulation Enhances Task-Oriented Training in Chronic, Severe Motor Deficit After Stroke: A Randomized Trial. *Stroke* 2016; **47**: 1879–1884. <http://stroke.ahajournals.org/content/early/2016/05/17/STROKEAHA.116.012671.abstract>
33. Reuter NG, **Westgate PM**, Ingram M, Miller C. Death Related to Dental Treatment: A Systematic Review. *Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology* 2017; **123**: 194–204. [http://www.oooojournal.net/article/S2212-4403\(16\)30654-X/abstract](http://www.oooojournal.net/article/S2212-4403(16)30654-X/abstract)
34. **Westgate PM**, Burchett WW. On the Analysis of Very Small Samples of Gaussian Repeated Measurements: An Alternative Approach. *Statistics in Medicine* 2017; **36**: 958–970. <http://onlinelibrary.wiley.com/doi/10.1002/sim.7199/full>
35. *Segerstrom SC, Sephton SE, **Westgate PM**. Intraindividual Variability in Cortisol: Approaches, Illustrations, and Recommendations. *Psychoneuroendocrinology* 2017; **78**: 114–124. [http://www.psyneuen-journal.com/article/S0306-4530\(16\)30732-6/abstract](http://www.psyneuen-journal.com/article/S0306-4530(16)30732-6/abstract)

36. Ward A, Carrico C, Powell E, **Westgate PM**, Nichols L, Fleischer A, Sawaki L. Safety and Improvement of Movement Function After Stroke with Atomoxetine: A Pilot Randomized Trial. *Restorative Neurology and Neuroscience* 2017; **35**: 1–10. <http://content.iospress.com/articles/restorative-neurology-and-neuroscience/rnm160673>
37. Campbell MS, Berrones AJ, Krishnakumar IM, Charnigo RJ, **Westgate PM**, Fleenor BS. Responsiveness to Curcumin Intervention is Associated with Reduced Aortic Stiffness in Young, Obese Men with Higher Initial Stiffness. *Journal of Functional Foods* 2017; **29**: 154–160. <http://www.sciencedirect.com/science/article/pii/S1756464616304029>
38. Finlin BS, Zhu B, Confides AL, **Westgate PM**, Harfmann BD, Dupont-Versteegden EE, Kern PA. Mast Cells Promote Seasonal White Adipose Beiging in Humans. *Diabetes* 2017; **66**: 1237–1246. <http://diabetes.diabetesjournals.org/content/66/5/1237>
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40. Gomez-Pomar E, Makhoul M, **Westgate PM**, Ibonia KT, Patwardhan A, Giannone PJ, Bada HS, Abu Jawdeh EG. Relationship Between Perfusion Index and Patent Ductus Arteriosus in Preterm Infants. *Pediatric Research* 2017; **81**: 775–779. <http://www.nature.com/pr/journal/vaop/ncurrent/full/pr201710a.html>
41. Exposto CR, Oz U, Callard JS, Allen MJ, Khurana H, D’Atri AD, Mo X, Fernandez SA, Tatakis DN, Edmonds K, **Westgate PM**, Huja SS. Oncologic Doses of Zoledronic Acid Induce Site Specific Suppression of Bone Modelling in Rice Rats. *Orthodontics & Craniofacial Research* 2017; **20**: 83–88. <http://onlinelibrary.wiley.com/doi/10.1111/ocr.12164/full>
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43. *Chen I-C, **Westgate PM**. Improved Methods for the Marginal Analysis of Longitudinal Data in the Presence of Time-Dependent Covariates. *Statistics in Medicine* 2017; **36**: 2533–2546. <http://onlinelibrary.wiley.com/doi/10.1002/sim.7307/full>
44. Sithisarn T, Legan SJ, **Westgate PM**, Wilson M, Wellmann K, Bada HS, Barron S. The Effects of Perinatal Oxycodone Exposure on Behavioral Outcome in a Rodent Model. *Frontiers in Pediatrics - Neonatology* 2017; **5**: 180. http://journal.frontiersin.org/article/10.3389/fped.2017.00180/full?utm_source=Email_to_authors&utm_medium=Email&utm_content=T1_11.5e1_author&utm_campaign=Email_publication&field=&journalName=Frontiers_in_Pediatrics&id=293600
45. Gomez-Pomar E, Christian A, Devlin L, Ibonia KT, Concina VA, Bada H, **Westgate PM**. Analysis of the Factors that Influence the Finnegan Neonatal Abstinence Scoring

- System. *Journal of Perinatology* 2017; **37**: 814–817. <https://www.nature.com/articles/jp201740>
46. Chang Y-J, Ruellas ACO, Yatabe MS, **Westgate PM**, Cevidanes LHS, Huja SS. Soft Tissue Changes Measured With Three-Dimensional Software Provides New Insights for Surgical Predictions. *Oral and Maxillofacial Surgery* 2017; **75**: 2191–2201. <http://dx.doi.org/10.1016/j.joms.2017.05.010>
47. **Westgate PM**, Gomez-Pomar E. Judging the Neonatal Abstinence Syndrome Assessment Tools to Guide Future Tool Development: The Use of Clinimetrics as opposed to Psychometrics. *Frontiers in Pediatrics - Neonatology* 2017; **5**: 204. http://journal.frontiersin.org/article/10.3389/fped.2017.00204/full?utm_source=Email_to_authors&utm_medium=Email&utm_content=T1_11.5e1_author&utm_campaign=Email_publication&field=&journalName=Frontiers_in_Pediatrics&id=286502
48. Bush ML, Taylor ZR, Noblitt B, Shackelford T, Gal TJ, Shinn JB, Creel LM, Lester C, **Westgate PM**, Jacobs JA, Studts CR. Promotion of Early Pediatric Hearing Detection Through Patient Navigation: A Randomized Controlled Clinical Trial. *The Laryngoscope* 2017; **127**: S1–S13. <http://onlinelibrary.wiley.com/doi/10.1002/lary.26822/full>
49. Gomez-Pomar E, Finnegan LP, Devlin L, Bada H, Concina VA, Ibonia KT, **Westgate PM**. Simplification of the Finnegan Neonatal Abstinence Scoring System: Retrospective Study of Two Institutions in the USA. *BMJ Open* 2017; **7**: e016176. <http://bmjopen.bmj.com/content/7/9/e016176>
50. Finlin BS, Zhu B, Kok BP, Godio C, **Westgate PM**, Grayson N, Sims R, Bland JS, Saez E, Kern PA. The Influence of a KDT501, a Novel Isohumulone, on Adipocyte Function in Humans. *Frontiers in Endocrinology - Diabetes* 2017; **8**: 255. https://www.frontiersin.org/articles/10.3389/fendo.2017.00255/full?utm_source=Email_to_authors&utm_medium=Email&utm_content=T1_11.5e1_author&utm_campaign=Email_publication&field=&journalName=Frontiers_in_Endocrinology&id=296736
51. Subedi L, Huang H, Pant A, **Westgate PM**, Bada HS, Bauer JA, Giannone PJ, Sithisarn T. Plasma Brain-Derived Neurotrophic Factor Levels in Newborn Infants with Neonatal Abstinence Syndrome. *Frontiers in Pediatrics - Neonatology* 2017; **5**: 238. <https://www.frontiersin.org/article/10.3389/fped.2017.00238>
52. Skubik-Peplaski C, Custer M, Powell E, **Westgate PM**, Sawaki L. Comparing Occupation-Based and Repetitive Task Practice Interventions for Optimal Stroke Recovery: A Pilot Randomized Trial. *Physical & Occupational Therapy in Geriatrics* 2017; **35**: 156–168. <http://www.tandfonline.com/doi/full/10.1080/02703181.2017.1342734>
53. Rodrigues TA, Goroso DG, **Westgate PM**, Carrico C, Batistella LR, Sawaki L. Slow Versus Fast Robot-Assisted Locomotor Training After Severe Stroke: A Randomized Controlled Trial. *American Journal of Physical Medicine & Rehabilitation* 2017; **96**: S165. http://journals.lww.com/ajpmr/Citation/2017/10001/Slow_Versus_Fast_Robot_Assisted_Locomotor_Training.8.aspx

54. Abu Jawdeh EG, **Westgate PM**, Pant A, Stacy AL, Mamilla D, Gabrani A, Patwardhan A, Bada HS, Giannone P. Prenatal Opioid Exposure and Intermittent Hypoxemia in Preterm Infants: A Retrospective Assessment. *Frontiers in Pediatrics - Neonatology* 2017; **5**: 253. https://www.frontiersin.org/articles/10.3389/fped.2017.00253/full?utm_source=Email_to_authors&utm_medium=Email&utm_content=T1_11.5e1_author&utm_campaign=Email_publication&field=&journalName=Frontiers_in_Pediatrics&id=300655
55. Harfmann BD, Schroder EA, England JH, Senn NJ, **Westgate PM**, Esser KA, Kern PA. Temperature as a Circadian Marker in Older Human Subjects: Relationship to Metabolic Syndrome and Diabetes. *Journal of the Endocrine Society* 2017; **1**: 843–851. <https://academic.oup.com/jes/article/1/7/843/3860222>
56. Fiorillo CE, Hughes AL, Chen I, **Westgate PM**, Gal TG, Bush ML, Comer BT. Factors Associated with Patient No-Show Rates in an Academic Otolaryngology Practice. *The Laryngoscope* 2017; **128**: 626–631. <http://onlinelibrary.wiley.com/doi/10.1002/lary.26816/full>
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58. Fiorillo CE, Rashidi V, **Westgate PM**, Jacobs JA, Bush ML, Studts CR. Assessment of Behavioral Problems in Children with Hearing Loss. *Otology & Neurotology* 2017; **38**: 1456–1462. http://journals.lww.com/otology-neurotology/Abstract/2017/12000/Assessment_of_Behavioral_Problems_in_Children_With.25.aspx
59. Myers NL, Ben Kibler W, Capilouto GJ, **Westgate PM**, English TA, Uhl TL. Reliability of an Observational Method Used to Assess Tennis Serve Mechanics in a Group of Novice Raters. *Journal of Medicine and Science in Tennis* 2017; **22**: 6–12. https://uknowledge.uky.edu/cgi/viewcontent.cgi?article=1086&context=rehabsci_facpub
60. Gomez-Pomar E, Hatfield E, GarlitzK, **Westgate PM**, Bada HS. Vitamin E in the Preterm Infant: A Forgotten Cause of Hemolytic Anemia. *American Journal of Perinatology* 2018; **35**: 305–310. <https://www.thieme-connect.com/products/ejournals/abstract/10.1055/s-0037-1607283>
61. Azer N, Ritter E, Bernard P, Landers C, **Westgate PM**, Shenoi A. 1341: Safety of Prolonged Procedural Sedation for Complex Imaging in Children in an Outpatient Setting. *Critical Care Medicine* 2018; **46**: 654. https://journals.lww.com/ccmjournals/Citation/2018/01001/1341__SAFETY_OF_PROLONGED_PROCEDURAL_SEDATION_FOR.1295.aspx
62. Woods ME, Beeman CS, **Westgate PM**, Cardinal L, Huja SS. Compensations in Bone Morphology and the Dentition in Patients with Untreated Unilateral Cleft Lip and

- Palate: A Cone-Beam Computed Tomographic Analysis. *The Cleft Palate-Craniofacial Journal* 2018; **55**: 1358–1366. <http://journals.sagepub.com/doi/full/10.1177/1055665618757635#articleCitationDownloadContainer>
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65. Ibonia KT, Bada HS, **Westgate PM**, Gomez-Pomar E, Bhandary P, Patwardhan A, Abu Jawdeh EG. Blood Transfusions in Preterm Infants: Changes on Perfusion Index and Intermittent Hypoxemia. *Transfusion* 2018; **58**: 2538–2544. <https://onlinelibrary.wiley.com/doi/abs/10.1111/trf.14808>
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- Incomplete Spinal Cord Injury. *NeuroRehabilitation* 2018; **43**: 125–134. <https://content.iospress.com/articles/neurorehabilitation/nre172369>
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120. Studts CR, Jacobs JA, Bush ML, Lowman J, Creel LM, **Westgate PM**. Study Protocol: Type 1 Hybrid Effectiveness-Implementation Trial of a Behavioral Parent Training

Intervention for Parents of Young Children Who Are Deaf or Hard of Hearing. *American Journal of Speech-Language Pathology* 2022. https://pubs.asha.org/doi/full/10.1044/2022_AJSLP-21-00186#

121. Miller JS, Bada HS, Leggas M, **Westgate PM**. Assessment of the Relative Clinical Utility of Shortened Finnegan Neonatal Abstinence Scoring Tools. *Journal of Perinatology* 2022. <https://www.nature.com/articles/s41372-022-01419-0>
122. Smalls BL, Lacy ME, Hieronymus L, Bacha N, Nathoo T, **Westgate PM**, Azam MT, Westneat SC, Schoenberg NE. A New Look at Barriers to Clinical Care Among Appalachian Residents Living with Diabetes. *Diabetes Spectrum* (accepted).

Manuscripts Submitted for Publication

*First-author advisees indicated by asterisk**

1. Smalls BL, Adegboyega A, Combs E, Azam T, **Westgate PM**, Schoenberg NE. Assessing Chronic Pain Among Adults Diagnosed with Diabetes Residing in Rural Appalachia (submitted).
2. Smalls BL, Azam T, Dunfee M, **Westgate PM**, Westneat S, Schoenberg NE. The Relationship Between Psychosocial Factors, Self-Care, and Blood Sugar in an Appalachian Population (submitted).
3. Powell ES, Elwert N, Huber J, **Westgate PM**, Hines E, Sawaki L. Effects of Dynamic Body Weight Support on Functional Independence Measures in Acute Ischemic Stroke: a Retrospective Cohort Study (submitted).
4. Sithisarn T, Legan SJ, **Westgate PM**, Bada H, Wilson ME. An in Vitro Model for Testing Opioids vs Non-Opioids in the Treatment of Neonatal Abstinence Syndrome (submitted).
5. Peng J, Shoben A, Zhang P, **Westgate PM**, Fernandez S. On Small-Sample Inference in Multiphase Stepped Wedge Cluster Randomized Trial (MSW-CRT) with Binary Outcomes (submitted).
6. Tang X, Heeren T, **Westgate PM**, Feaster DJ, Fernandez SA, Vandergrift N, Cheng DM. Performance of Permutation vs. Model-based Tests in the HEALing Communities Study, a Covariate Constrained Cluster Randomized Trial (submitted).
7. Mullins JF, Hoch MC, Kosik KB, Heebner NR, Gribble PA, **Westgate PM**, Nitz AJ. The Immediate and Delayed Effect of Dry Needling Dosage for the Treatment of Chronic Ankle Instability (submitted).

8. **Westgate PM**, Huang Z, Thompson KL, Vickers-Smith R, Rock P, Slavova S, Bush HM, Nigam SR, Harris DR, Quesinberry D, Freeman PR, Talbert J, Walsh SL. Characteristics of Communities at High Risk for Opioid Overdose Deaths: A Baseline Assessment of the Kentucky HEALing (Helping to End Addiction Long-termSM) Communities Study (submitted).
9. Huber J, Elwert N, Powell ES, **Westgate PM**, Hines E, Sawaki L. Effects of Dynamic Body Weight Support on Functional Independence Measures in Acute Ischemic Stroke: A Retrospective Cohort Study (submitted).
10. *Azam T, **Westgate PM**. Improving Power in Longitudinal School Randomized Trials when Subject-Level Outcomes are Anonymous (submitted).

Funding

Active Funding

UL1TR001998 Kern (PI) 06/17-06/26

NIH / NCATS

Kentucky Center for Clinical and Translational Science

[Biostatistics, Epidemiology and Research Design \(BERD\) Core](#)

The goal, as a Clinical and Translational Science Awards hub, is to continue to champion innovation in the full spectrum of clinical and translational research while educating the workforce of the future, engaging our communities in biomedical science and working with the national network to advance cohesive multi-center clinical trials, which will ultimately elevate the health and quality of life of the populace of Central Appalachia.

Role: Co-investigator

R01DK124626 Kern (PI) 12/20-11/25

NIH / NIDDK

Mechanisms for Activation of Beige Adipose Tissue in Humans

The goal of this study is to examine the effects of mirabegron on glucose metabolism.

Role: Co-investigator

R01DK128033 Kern (PI) 12/21-11/24

NIH / NIDDK

Mirabegron and Tadalafil Effectiveness for Treatment of Prediabetes

The goals of this study are to test if treatment of prediabetic subjects with mirabegron or tadalafil will improve glucose metabolism, and to test if combined treatment will have additive improvements.

Role: Co-investigator

R34DA053140 Surratt (PI) 08/21-07/24

NIH / NIDA

Integrated PrEP Interventions for People Who Inject Drugs in Rural Kentucky

The goal is to adapt and integrate a novel PrEP initiation intervention at point of care in rural SSPs, in two KY counties that are among the nations top 10 most vulnerable to HIV among PWID, and conduct a preliminary test of its efficacy.

Role: Co-Investigator

R01DC017770 Bush (PI)

04/19-03/24

NIH / NIDCD

Communities Helping the Hearing of Infants by Reaching Parents: The CHHIRP Navigator Trial

The goal of this study is to test if a patient navigator intervention decreases infant hearing diagnosis non-adherence after failed newborn hearing screening.

Role: Co-investigator

R21DC019602 Bush (PI)

08/21 - 07/23

NIH / NIDCD

Hearing Healthcare Assessment in Rural Communities (HHARC)

The goal of this study is to assess the utilization of hearing healthcare among rural adults through rural health clinics and then develop a culturally responsive rural health clinic patient navigation program to promote utilization of hearing healthcare.

Role: Co-Investigator

R01DC016957 Studts (PI)

06/18-05/23

NIH / NIDCD

Behavioral Parent Training for Families with Deaf and Hard of Hearing Preschoolers

This study will simultaneously investigate effectiveness outcomes and implementation factors associated with delivery in state-funded clinics of a behavioral parent training intervention adapted for parents of deaf and hard of hearing children.

Role: Co-investigator

UM1DA049406 Walsh (PI)

04/19-03/23

NIH / NIDA

*HEALing Communities Study - Kentucky**Kentucky CAN HEAL (Communities and Networks Helping End Addiction Long-term)*

The University of Kentucky received this \$87 million grant as part of the HEALing Communities Study. The goal of this study is to reduce opioid overdose deaths by 40% within three years.

Role: Co-Director of Data-Informatics-Biostatistics Core, Lead for Biostatistics

<https://heal.nih.gov/research/research-to-practice/healing-communities>

<https://healingcommunitiesstudy.org/sites/kentucky.html>

R01AG026307 Segerstrom (PI)

09/17-03/23

NIH / NIA

Self-Regulation and Brain and Cognitive Health in Older Adults

The goal of this study is to measure individual differences and changes in self-regulation over time in older adults, and to link self-regulation to physical activity, inflammation, and

trajectories of neurocognitive health.

Role: Co-investigator

R01DA043519 Bada (PI)

05/17-02/23

NIH / NIDA

Non-opiate treatment after prenatal opiate exposure to Prevent Postnatal Injury to the Young Brain (No-POPPY)

The goal of this study is to evaluate the effectiveness of clonidine as a treatment for neonates with Neonatal Abstinence Syndrome in a randomized clinical trial.

Role: Co-investigator

R01DK112136 Schoenberg (PI)

09/18-07/22

NIH / NIDDK

Community to Clinic Navigation to Improve Diabetes Outcomes

The goal of this study is to determine via a cluster randomized trial whether the combination of a Diabetes Self-management Program and tailored Patient Navigation improves diabetes outcomes relative to either of these programs individually.

Role: Co-investigator

Completed Funding

P20GM103538 Ebersole (PI)

08/13-07/14

NIH / NIGMS

Center for the Biological Basis of Oral/Systemic Disease (CBBOSD) - Year 10

The goal of this subproject grant is to provide a centralized, secure database and statistical consultation for study design and data analysis in relation to the center.

Role: Co-investigator

Merck and Company Inc 50154 Cohen (PI)

03/13-06/15

Project INSPIRE: Improving Adolescent Vaccination in Appalachian Kentucky

The goal of this study is to assess the efficacy of a health education intervention to increase adherence to adolescent vaccines among Appalachian Kentuckians.

Role: Co-investigator

UL1TR000117 Kern (PI)

01/14-07/15

NIH / NCATS

University of Kentucky CCTS Pilot Award, \$25,000, Westgate (PI)

Improving Statistical Inference and Power for the Analysis of Very Small Samples of Repeated Measurements Data

A pilot grant through the University of Kentucky's Center for Clinical and Translational Sciences, which is supported by the National Center for Research Resources and the National Center for Advancing Translational Sciences, National Institutes of Health, through Grant UL1TR000117.

Role: Principal Investigator of Pilot Award

R01DA025605 Lile (PI) 08/13-07/15
NIH / NIDA

GABA Drugs for Cannabis-Use Disorders: Initial Mechanistic Studies in Humans

The goal of this study is to carry out the initial step of evaluating GABAergic drugs as potential pharmacological treatments for cannabis-use disorders.

Role: Co-investigator

P30GM110788 Huja (PI) 08/15-07/16
NIH / NIGMS

Center for the Biologic Basis of Oral/Systemic Diseases: Huja Pilot Project

The goal of this study is to define effects of antibodies to *P. gingivalis* on human peripheral blood derived osteoclast differentiation and function and to understand the effects of human antibody to *P. gingivalis* on molecular pattern receptor signaling in osteoclasts.

Role: Co-investigator

University of Kentucky, Gastroenterology, Division of Digestive Diseases and Nutrition.
09/2013 - 06/2017, 10% Effort.

Role: Statistical Consultant

University of Louisville Research Foundation, Inc. Devlin (PI) 04/17-12/17
Multicenter Cross Validation Study of a Simplified Finnegan Scoring System

The goal of this study is to assess the utility of a Simplified Finnegan Scoring System developed by the PI of subcontract and colleagues.

Role: PI of Subcontract

R01HD070792 Giannone, Bauer (PIs) 01/14-03/18
NIH / NICHD

Indomethacin and Delayed Umbilical Cord Clamp for Preterm Infant IVH

The goal of this study is to determine if delayed umbilical cord-clamping (DCC) increases survival and decreases the incidence and severity of intraventricular hemorrhage and periventricular leukomalacia in preterm infants.

Role: Co-investigator

R01HL113494 Supinski (PI) 09/13-04/18
NIH / NHLBI

Treatment of Skeletal Muscle Dysfunction in ICU Patients

The goal of this study is to determine if new treatments will improve muscle strength, increase muscle size, alter muscle biomarker levels, and reduce the duration of mechanical ventilation for MICU patients.

Role: Co-investigator

K23DC014074 Bush (PI) 03/15-07/18
NIH / NIDCD

Promoting Early Diagnosis of Congenital Hearing Loss Through Patient Navigation

The goal of this study is to increase the likelihood that parents obtain recommended infant

hearing testing within three months after birth.

Role: Co-investigator

Gerber Foundation 1822-3829 Jawdeh (PI) 09/14-06/19
Effect of Delayed Cord Clamping on Chronic Intermittent Hypoxia in Extremely Premature Infants

The goals of this study are to better define the mechanisms and consequences of chronic intermittent hypoxia in extremely premature infants, and to evaluate delayed cord clamping with respect to reducing its occurrence.

Role: Co-investigator

R01DK107646 Kern (PI) 09/15-07/19
 NIH / NIDDK
Cold Induced Change in Human Subcutaneous White Adipose

The goal of this study is to determine the impacts of cold and season on white adipose tissue.

Role: Co-investigator

University of Kentucky, Department of Pediatrics. 07/2013 - 06/2019

Role: Statistical Consultant

Kejner (PI) 08/18-07/19
 Vioptix Incorporated
Non-Invasive Near Infrared Tissue Oximeter Monitoring for Free Flap Reconstruction of the Head and Neck: A Prospective Analysis

The goal of this study is to add to the literature by describing our successes and failures with the T.Ox intraoral paddle which has newly been incorporated into our practice.

Role: Co-investigator

R324A170021 Ruble (PI) 7/17-6/20
 Department of Education
BREATHE: A Burnout Intervention for Special Education Teachers of Students with Autism Spectrum Disorders

The goal of this proposed study is to adapt, refine and test a burnout intervention for special education teachers in order to reduce teacher burnout and improve student educational outcomes.

Role: Co-investigator

University of Kentucky, Department of Physical Medicine and Rehabilitation, Division of Research. 07/17 - 02/21

Role: Statistical Consultant

3R01DC016957-04S1 Studts (PI) 06/20-05/21
 NIH / NIDCD

COVID-19 Effects on Children who are Deaf or Hard of Hearing and their Families: Rapid and Rigorous Mixed-Methods Research to Inform Care

This supplement application proposes to assess the effects of COVID-19 on DHH children

and families; identify characteristics of children/families most at risk for negative outcomes; assess service provider/administrator experiences providing services and support to families during COVID-19; and rapidly disseminate actionable results to a broad array of stakeholders positioned to influence practice and policy.

Role: Co-investigator

R01DA036550 Lile (PI)

09/14-06/21

NIH / NIDA

Human Laboratory Screening of Pregabalin and Tiagabine for Cannabis Dependence

The goal of this study is to evaluate the effectiveness of pregabalin and tiagabine as potential medications for cannabis-use disorders.

Role: Co-investigator

WFL-US-12/19 204 Sawaki, Salles (PIs)

07/19-06/21

Wings for Life Spinal Cord Research Foundation

Improving Hand Recovery with Neuromodulation in Tetraplegia (IGNITE trial)

The goal of this study is to test if participants with chronic cervical incomplete spinal cord injury receiving active transcranial direct current stimulation paired with motor training will have greater improvement in upper extremity motor function and quality of life compared with controls receiving sham transcranial direct current stimulation paired with identical motor training.

Role: Co-investigator

Teaching Experience

University of Kentucky

Courses

CPH / BST 664 **Design and Analysis of Clinical Trials**

Semesters Taught: Fall 2017, Fall 2021

Overview: Graduate-level course for biostatistics, statistics, and non-biostatistics students covering the design of clinical trials and the analysis of data arising from clinical trials

BST 762 / STA 632 **Longitudinal Data Analysis**

Semesters Taught: Spring 2014, Fall 2015, Spring 2019, Fall 2020

Overview: Graduate-level course for biostatistics and statistics students covering the analysis of longitudinal and correlated data

In Spring 2019 and Fall 2020, CPH 738 **Special Topics in Biostatistics: Longitudinal Data Analysis** was also taught

CPH 630 / STA 681 Biostatistics II

Semesters Taught: Fall 2011, Spring 2012, Spring 2013, Fall 2013, Spring 2014, Fall 2014, Spring 2015, Fall 2015, Spring 2016, Fall 2016, Spring 2017

Overview: Graduate-level course for non-biostatistics PhD students covering linear regression, generalized linear modeling, and the analysis of time-to-event data

In the Spring semesters of 2015, 2016, and 2017, CPH 930 **Biostatistics Concepts for the Public Health Practitioner** was also taught

BST 639 / CPH 639 Computing Tools

Semesters Taught: Fall 2012

Overview: Graduate-level course for both biostatistics and non-biostatistics students covering linear regression and computing tools for linear regression

Lectures and Presentations

Substitute lecturer for STA 580 **Biostatistics I** (Fall 2011 - 4 lectures, 2013 - 1 lecture)
Graduate-level course for non-biostatistics students covering introductory statistical methods

Guest lecture presentation on my research interests for the Doctoral Seminar course (CPH 786), Spring 2012

Workshop Presentation on Power and Sample Size, Department of Communication, University of Kentucky, Spring 2012

Guest lecture presentation on small-sample inference for Longitudinal Data Analysis (BST762/STA632), Spring 2013

Workshop Presentation on Statistical Significance, Department of Pediatrics, University of Kentucky, Summer 2013

Workshop Presentation on Biostatistics in Clinical Research, Division of Digestive Diseases and Nutrition, University of Kentucky, Fall 2013

Workshop Presentation on Basic Statistical Concepts and Tools in Clinical Research, Division of Digestive Diseases and Nutrition, University of Kentucky, Fall 2015

Presentation on “Clustering: What is it, and how does it affect study design and statistical analysis?” for CCTS Pizza & Pilots series, University of Kentucky, Spring 2015

Workshop Presentation on Clinical Interpretation of Regression Analysis, Division of Digestive Diseases and Nutrition, University of Kentucky, Summer 2017

Presentation on “Clustering: What is it, and how does it affect study design and statistical analysis?” for CCTS Pizza & Pilots series, University of Kentucky, Spring 2018

Presentation on “Evaluating Interventions for Reducing Opioid Overdose Deaths with a Stepped Wedge Cluster Trial: A Proposed Study Design” for CCTS Pizza & Pilots series, University of Kentucky, Spring 2019

Presentation on “Design and Analysis Options for Cluster Randomized Trials” for CCTS BERD BITES series, University of Kentucky, Spring 2022

University of Michigan

Teaching Assistant for BIOSTAT 602 **Biostatistical Inference** (Winter 2009)
Course for Master’s level biostatistics and statistics students

Student Advising

Dissertation Advisor

I-Chen Chen (Ph.D., Epidemiology and Biostatistics, 2018)

Dissertation Title: Improved Methods and Selecting Classification Types for Time-Dependent Covariates in the Marginal Analysis of Longitudinal Data

https://uknowledge.uky.edu/epb_etds/19/

Whitney Ford (Ph.D., Epidemiology and Biostatistics, 2018)

Dissertation Title: Improved Standard Error Estimation for Maintaining the Validities of Inference in Small-Sample Cluster Randomized Trials and Longitudinal Studies

https://uknowledge.uky.edu/epb_etds/20/

Md Tofial Azam (Ph.D., Epidemiology and Biostatistics, 2021)

Dissertation Title: Design and Analyses of School-Based Violence Prevention Cluster Randomized Trials

https://uknowledge.uky.edu/epb_etds/32/

Shawn Nigam (Ph.D. Candidate, Epidemiology and Biostatistics)

Capstone Chair

Ryan Hickson (M.P.H., Biostatistics, 2015)

Capstone Title: Factors Predicting Beta-Blocker Treatment after Myocardial Infarction in Patients with Type 2 Diabetes

https://uknowledge.uky.edu/cph_etds/42/

Suzanne Segerstrom (M.P.H., Biostatistics, 2017)

Capstone Title: Resources and Well-Being in Amyotrophic Lateral Sclerosis Patients and Caregivers: A Longitudinal, Dyadic Analysis

https://uknowledge.uky.edu/cph_etds/139/

Marcia Rojas-Ramirez (M.P.H., Biostatistics, 2017)

Capstone Title: Using Structural Equation Modeling to Predict Orofacial Pain-Related Outcomes

https://uknowledge.uky.edu/cph_etds/171/

Independent Studies

Natalie Myers (Ph.D., Athletic Training, 2017), Spring 2015

Suzanne Segerstrom (M.P.H., Biostatistics, 2017), Summer 2016

Radmila Choate (Ph.D., Epidemiology and Biostatistics, 2019), Summer 2017

Vira Pravosud (Ph.D., Epidemiology and Biostatistics, 2021), Spring 2018

Gaixin Du (Ph.D. Candidate, Epidemiology and Biostatistics), Summer 2019

Shawn Nigam (Ph.D. Candidate, Epidemiology and Biostatistics), Fall 2020

Madeline Dunfee (Ph.D. Candidate, Epidemiology and Biostatistics), Winter 2021

M.P.H., Dr.P.H., M.S., and Ph.D. Committees

Peter Rock (M.P.H., Health Behavior, 2012)

Kunthea Nhim (Dr.P.H., Health Management and Policy, 2014)

Enrique Gomez Pomar (M.S., Pediatrics, 2016)

Vanessa Concina (M.S., Pediatrics, 2016)

Virginia Valentin (Dr.P.H., Epidemiology, 2017)

Natalie Myers (Ph.D., Athletic Training, 2017)

Qingcong Yuan (Ph.D., Statistics, 2017)

Ryan McCann (Ph.D., Athletic Training, 2017)

Sudha Gudhimella (M.S., Orthodontics, 2017)

McKenzie Woods (M.S., Orthodontics, 2017)

Katherine Maddy (Ph.D., Rehabilitation Sciences, 2017)

Liangdong Fan (Ph.D., Statistics, 2018)

Hannah Bellamy (M.P.H., Biostatistics, 2018)

Sarah Campbell (Ph.D., Rehabilitation Sciences, 2018)

Ryan Husak (Ph.D., Rehabilitation Sciences, 2018)

Elie Abu Jawdeh (Ph.D., Clinical and Translational Science, 2018)

Radmila Choate (Ph.D., Epidemiology and Biostatistics, 2019)

Jennifer Mullins (Ph.D., Rehabilitation Sciences, 2020)

Nicole Cascia (Ph.D., Rehabilitation Sciences, 2020)

Kyle Matsel (Ph.D., Rehabilitation Sciences, 2021)

John Flunker (Ph.D., Epidemiology and Biostatistics, 2021)
Vira Pravosud (Ph.D., Epidemiology and Biostatistics, 2021)
Brian Kovacic (Ph.D., Epidemiology and Biostatistics, 2021)
Eric Wilson (Dr.P.H., Epidemiology, 2021)
Jade Singleton (Ph.D., Epidemiology and Biostatistics, 2021)
Cameron Bushling (Ph.D. Candidate, Epidemiology and Biostatistics)
Elana Gloger (Ph.D. Candidate, Psychology)

Service

University of Kentucky

University Level

Biostatistical Consultant for the University of Kentucky's Institutional Animal Care and Use Committee (IACUC), 2011-2014

Outside Examiner for the Doctoral Final Examination of Rachel Stewart, June 2015

Letter of Intent Review Panel Member for Pilot Funding from the University of Kentucky Center for Clinical and Translational Science (CCTS), 2018

Center for Health Equity Transformation (CHET), 2019-2021

<https://chet.med.uky.edu/>

CHET Associate Director for Biostatistics and Research Design

Personnel Committee

Research Committee

Data Safety Monitoring Board (DSMB) Member, University of Kentucky Center for Clinical and Translational Science (CCTS), 2017-Present

College of Public Health

Website Redesign Project, Biostatistics Liaison, 2012-2013

Interview Committee for Director of Strategic Financial Planning, 2014

Admissions and Student Affairs Committee, Fall 2014 to Summer 2016

Task Force on Peer Evaluation of Faculty Teaching, 2017

Academic Performance Committee, 2014-2018

Poster Judge at College of Public Health Research Day, 2016, 2018

Search Committee for Chair of the Department of Epidemiology, 2017-2018

Search Committee for Chair of the Department of Biostatistics, 2018

Grant Writing Workshop - Reviewer for Mock Study Section, 2018
Chair of Academic Affairs Committee, February-June 2018
Academic Affairs Committee, 2016-2019
Biostatistics Chair Review/Reappointment Committee, 2022

Department of Biostatistics

Admissions Committee for Joint Doctoral Program in Epidemiology and Biostatistics, 2013-2016
Student Awards Committee, Department of Biostatistics, 2012-2017
Chair of the Faculty Search Committee, 2019
Faculty Search Committee, 2019-2020
Director of the Graduate Certificate in Biostatistics, 2015-2020
Ph.D. Comprehensive Exam Committee, 2013-Present

University of Michigan

President, STATCOM at the University of Michigan, 2009-2011
Member, STATCOM at the University of Michigan, 2007-2011

Grant Reviews

Patient-Centered Outcomes Research Institute
Cycle 2 2015 Merit Review, February, 2016
National Institutes of Health
NHLBI Special Emphasis Panel, December, 2021

Conference Service

Section Chair (Biomarkers I) at 2012 ENAR Annual Conference
Section Chair (ROC Curves) at 2015 ENAR Annual Conference
Judge for the Student Research Symposium at the KY-ASA Spring 2016 Chapter Meeting

Editorial Service

International Journal of Statistics and Probability, Editorial Board, 2012-Present
BMC Pulmonary Medicine, Editorial Board Statistical Adviser, 2016-2021

Journal Referee

American Journal of Biostatistics
Annals of Epidemiology

Applied Mathematics
Australian & New Zealand Journal of Statistics
Biometrical Journal
Biometrics
BMC Medical Research Methodology
BMC Public Health
BMC Pulmonary Medicine
BMJ Open
Circulation: Cardiovascular Quality and Outcomes
Children
Clinical Trials
Communications in Statistics - Simulation and Computation
Communications in Statistics - Theory and Methods
Computational Statistics and Data Analysis
Contemporary Clinical Trials Communications
Ecosphere
Epidemiology
European Journal of Neuroscience
International Journal of Obesity
International Journal of Epidemiology
Journal of the American Statistical Association
Journal of Appalachian Health
Journal of Applied Statistics
Journal of Athletic Training
Journal of Bioengineering & Biomedical Science
Journal of Biometrics & Biostatistics
Journal of Biopharmaceutical Statistics
Journal of Clinical Epidemiology
Journal of Computational and Applied Mathematics
Journal of Computational and Graphical Statistics
Journal of Nonparametric Statistics
Journal of the Operational Research Society

Journal of Spatial Science
Journal of Statistical Computation and Simulation
Multivariate Behavioral Research
Open Access Journal of Clinical Trials
Pediatrics
Pharmaceutical Statistics
PLOS ONE
Postgraduate Medicine
Stat
Statistics in Biopharmaceutical Research
Statistics in Medicine
Statistical Methods in Medical Research
Structural Equation Modeling: A Multidisciplinary Journal
The American Statistician

Presentations

Invited Presentation, “Cluster Randomized Trials with Rare Events: Improved Study Design and the Application of Negative Binomial Regression” Spring 2022, Survival, Longitudinal, And Multivariate (SLAM) Data Working Group, Department of Biostatistics, Johns Hopkins University.

Invited Presentation, “Community Randomized Trials with Rare Events: Negative Binomial Regression vs. Traditional Marginal Modeling Approaches.” Winter 2021, Australian Trials Methodology Conference.

Invited Keynote Speaker Presentation, “A Biostatistician’s Career Path: From Time as an Undergraduate All the Way to Developing Study Designs and Analytical Approaches for Improving Public Health in Kentucky.” Spring 2021, Eastern Kentucky University, Mu Sigma Rho (Statistics Club) Initiation.

Invited Presentation, “Study Design and Statistical Analysis Options for Cluster Randomized Trials: Examples Utilizing Stepped Wedge Designs and Generalized Estimating Equations.” Fall 2020, Georgetown University Department of Biostatistics, Bioinformatics & Biomathematics.

Invited Presentation, “Study Design and Statistical Analysis Options for Cluster Randomized Trials: Examples Based on the Proposed HEALing Communities Study - Kentucky.” Winter 2020, The Ohio State University College of Public Health Division of Biostatistics.

Invited Presentation, “Study Design and Statistical Analysis Options for Cluster Ran-

domized Trials: Examples Based on the Proposed HEALing Communities Study - Kentucky.” Fall 2019, University of Louisville Department of Bioinformatics and Biostatistics.

Invited Presentation, “Small-Sample Issues in Cluster Randomized Trials.” Fall 2018, University of Louisville Department of Bioinformatics and Biostatistics.

Contributed Presentation, “On the Use of Multiple Criteria to Select a Working Correlation Structure for Use Within Generalized Estimating Equations.” Summer 2017, JSM Annual Conference.

Contributed Presentation, “Approaches for Improved Power with Generalized Estimating Equations in Small-Sample Longitudinal Study Settings.” Summer 2016, JSM Annual Conference.

Contributed Presentation, “Improving Power with Generalized Estimating Equations in Small-Sample Longitudinal Study Settings.” Spring 2016, ENAR Annual Conference.

Contributed Presentation, “Choosing a Working Correlation Structure for GEE: Making Use of Selection Penalties.” Summer 2015, JSM Annual Conference.

Contributed Presentation, “Correlation Structure Selection Penalties for Improved Inference with Generalized Estimating Equations.” Spring 2015, ENAR Annual Conference.

Invited Presentation (for topic-contributed session), “Correlation Selection for Cluster Randomized Trials.” Summer 2014, JSM Annual Conference.

Invited Presentation, “An Improved Correlation Selection Approach for Generalized Estimating Equations.” Fall 2013, University of Louisville Department of Bioinformatics and Biostatistics.

Invited Presentation, “On the Marginal Analysis of Correlated Data with an Improved Quadratic Inference Function Approach.” Summer 2013, 2nd International Conference and Exhibition on Biometrics & Biostatistics.

Invited Presentation, “A Career Path in Statistics or Biostatistics.” Spring 2013, Central Michigan University Department of Mathematics.

Invited Presentation, “An Improved Quadratic Inference Function Approach for the Marginal Analysis of Correlated Data.” Spring 2013, ENAR Annual Conference.

Poster Presentation, “The Influences of Utilized and Theoretical Covariance Weighting Matrices on the Estimation Performance of QIF.” Spring 2012, ENAR Annual Conference.

Invited Presentation, “Improving Small-Sample Inference in Group Randomized Trials with Binary Outcomes.” Winter 2011, Vanderbilt University Department of Biostatistics.

Invited Presentation, “Improving Small-Sample Inference in Group Randomized Trials with Binary Outcomes.” Winter 2011, University of Kentucky Departments of Biostatistics and Statistics.

Invited Presentation, “Improving Small-Sample Inference in Group Randomized Trials with Binary Outcomes.” Winter 2011, Cincinnati Children’s Hospital Division of Bio-

statistics and Epidemiology.

Invited Presentation, “Improving Small-Sample Inference in Group Randomized Trials with Binary Outcomes.” Winter 2011, University of Wisconsin - Milwaukee School of Public Health.

Poster Presentation, “Improving Small-Sample Inference in Group Randomized Trials with Binary Outcomes.” Summer 2010, JSM Annual Conference.

Poster Presentation, “Improving Small-Sample Inference in Group Randomized Trials with Binary Outcomes.” Spring 2010, Michigan Student Symposium for Interdisciplinary Statistical Sciences (MSSISS).

Poster Presentation, “Improving Small-Sample Inference in Group Randomized Trials with Binary Outcomes.” Spring 2010, ENAR Annual Conference.

Oral Presentation, “Improving Small-Sample Inference in Group Randomized Trials with Binary Outcomes.” February 2010, Training Grant Journal Club, University of Michigan Department of Biostatistics.

Poster Presentation, “Improving Small-Sample Inference in Group Randomized Trials with Binary Outcomes.” Fall 2009, University of Michigan Department of Biostatistics 50/60 Anniversary Conference.

Collaborative Presentations

Han MK, **Westgate P**, Zach J, Washko GR, Murray S, Martinez FJ, Kazerooni EA, Lynch DA, & COPDGene Investigators. “Radiologic variability in airway dimensions of the normal lung.” American Thoracic Society International Conference, Denver, CO, 2011.

Sword JL, Oz U, Callard J, Allen MJ, **Westgate P**, Edmonds K, Huja SS. “Zoledronic Acid Suppresses Trabecular Bone Remodeling in Rice Rats.” Original science abstract poster presentation at the American Association for Dental Research annual meeting 2014, Charlotte, NC.

Pittenger J, Bennett J, Seelbach E, **Westgate P**, Maul E. 2014. “High Flow Nasal Cannula for Bronchiolitis Outside the Intensive Care Unit.” Original science abstract oral presentation at Pediatric Academic Societies/Asian Society of Pediatric Research 2014, Vancouver BC, Canada.

Maul E, **Westgate P**, Latham B. 2014. “Saving Time Under Pressure: Effectiveness of Standardizing Pediatric Resuscitation Carts.” Original science abstract oral presentation at Pediatric Academic Societies/Asian Society of Pediatric Research 2014, Vancouver BC, Canada.

Nhim K, **Westgate PM**, Mays GP, Chesnut LW, Todd-Langston LS, McDonald DR. Comparative Effectiveness of the CenteringPregnancy Program and Traditional Prenatal

Care on Adverse Birth Outcomes in Medicaid Enrollees in a Rural Western Kentucky Clinic. *Annals of Epidemiology* 2014; **24**(9):690.

Mardini H, Grigorian A, **Westgate P**, Aslam B, Fleming T. "Hepatitis A and B Immunization Status in the U.S. Population: Results From the National Health and Nutrition Examination Survey (NHANES) 2003 to 2012." Original science abstract poster presentation at the American College of Gastroenterology annual meeting 2014, Philadelphia, PA.

Mardini H, Grigorian A, **Westgate P**. "Hepatitis B Serology in the U.S. Population: Results From the National Health and Nutrition Examination Survey (NHANES) 2003 to 2012." Original science abstract poster presentation at the American College of Gastroenterology annual meeting 2014, Philadelphia, PA.

Grigorian A, Mardini H, Fleming T, Aslam B, **Westgate P**. "The Prevalence of Hepatitis D in the U.S. Population: Results From the National Health and Nutrition Examination Survey (NHANES) 2003 to 2012." Original science abstract poster presentation at the American College of Gastroenterology annual meeting 2014, Philadelphia, PA.

Fleming T, Grigorian A, Aslam B, **Westgate P**, Mardini H. "Sex, Age and Race Are Associated With Increased Risk of Exposure to Hepatitis E in the U.S." Original science abstract oral presentation at the American College of Gastroenterology annual meeting 2014, Philadelphia, PA.

Aslam B, Fleming T, **Westgate P**, Grigorian A, Mardini H. "Hepatitis E Seropositivity in the U.S. Population: Results From the National Health and Nutrition Examination Survey (NHANES) 2009 to 2012." Original science abstract poster presentation at the American College of Gastroenterology annual meeting 2014, Philadelphia, PA.

Fielding C, Frandah W, **Westgate P**, Nickl N. "Does BMI or Sedation Type Affect Adenoma Detection on Screening Colonoscopy?" Original science abstract poster presentation at the American College of Gastroenterology annual meeting 2014, Philadelphia, PA.

Frandah W, Fielding C, **Westgate P**, Nickl N. "Is Polypectomy Rate a Good Quality Metric Substitute for Adenoma Detection Rate During Screening Colonoscopy?" Original science abstract poster presentation at the American College of Gastroenterology annual meeting 2014, Philadelphia, PA.

Abu Jawdeh EG, Haynes SS, **Westgate PM**, Kinnard TB, Bhandary P. "Standardized Rounding Processes Improve Team Member and Parent Engagement on NICU Rounds: Results of the Multidisciplinary Rounding Group." Original science abstract for platform presentation at the Pediatric Academic Societies (PAS) annual meeting 2015, San Diego, CA.

Reuter NG, **Westgate P**, Miller CS. "Factors affecting the development of fatal outcomes in dentistry." American Association for Dental Research (AADR) Annual Meeting 2016, Los Angeles, CA.

Ibonia K, Bada H, Bhandary P, Gomez E, **Westgate P**, Patwardhan A, Shanbacher B,

Abu Jawdeh E. Correlation of Changes In Perfusion Index and Intermittent Hypoxemia with Blood Transfusion In Preterm Infants. *Journal of Investigative Medicine* 2016; **64**: 610.

Christian A, Ibonia K, **Westgate P**, Gomez E, Bada H. “Variability of the Finnegan Scoring System in Monitoring Infants with Neonatal Abstinence Syndrome.” American Federation for Medical Research (AFMR) 2016 Southern Regional Meeting, New Orleans, LA.

Rodrigues TA, Goroso DG, **Westgate PM**, Sawaki L. “Novel Locomotor Training with Robotic Gait Orthosis in Stroke: A Randomized Controlled Trial.” World Congress of Neurorehabilitation 2016, Philadelphia, PA.

Pomar EG, Finnegan LP, Ibonia KT, Concina VA, Bada H, **Westgate PM**. “Simplified Finnegan Neonatal Abstinence Score for Efficient Assessment.” Pediatric Academic Societies Annual Meeting 2016, Baltimore, MD.

Ibonia KT, Bada H, Pomar EG, Bhandary P, **Westgate PM**, Patwardhan AA, Schanbach B, Abu Jawdeh EG. “Changes in Perfusion Index and Intermittent Hypoxemia Following Red Blood Cell Transfusion in Preterm Infants.” Pediatric Academic Societies Annual Meeting 2016, Baltimore, MD.

Concina VA, Schneider D, **Westgate PM**, Bada H, Khan S. “Predictive Factors in the Development of Moderate to Severe Bronchopulmonary Dysplasia (BPD) in Preterm Infants.” Pediatric Academic Societies Annual Meeting 2016, Baltimore, MD.

Pomar EG, Makhoul M, **Westgate PM**, Ibonia KT, Patwardhan AA, Schanbacher B, Bada H, Abu Jawdeh EG. “Perfusion Index Does Not Diagnose Hemodynamically Significant Patent Ductus Arteriosus in Preterm Infants.” Pediatric Academic Societies Annual Meeting 2016, Baltimore, MD.

Sithisarn T, Bada H, **Westgate PM**, Legan SJ. “Postnatal Treatment With Morphine Following Prenatal Opiate Exposure Increases Brain Cell Death Compared to Clonidine.” Pediatric Academic Societies Annual Meeting 2016, Baltimore, MD.

Subedi L, Huang H, Pant A, Bada H, Bauer JA, Giannone PJ, **Westgate PM**, Sithisarn T. “The Effect of Opiate Exposure on Plasma Brain Derived Neurotrophic Factor (BDNF) Levels in Newborn Infants Exposed to Opiates in Utero.” Pediatric Academic Societies Annual Meeting 2017, Toronto, Canada.

Subedi L, Palla M, Pant A, Bada H, **Westgate PM**, Cunningham MD. “Blood Lactate Levels as an Indication of Severity of Hypoxic Ischemic Encephalopathy.” Pediatric Academic Societies Annual Meeting 2017, Toronto, Canada.

Radulescu A, Wallace C, **Westgate PM**, Bada HS. “Characteristics of Obese Pediatric Population from Urban and Rural Areas.” Pediatric Academic Societies Annual Meeting 2017, Toronto, Canada.

Giannone PJ, Pant A, **Westgate PM**, Abu Jawdeh EG, et al. “Extubation Failure in Preterm Infants: A Role for Monitoring Intermittent Hypoxemia.” Pediatric Academic Societies Annual Meeting 2017, Toronto, Canada.

Woods M, Beeman C, **Westgate PM**, Cardinal L, Huja S. “Dentoalveolar and Skeletal Compensations in Untreated Unilateral Cleft-Lip and Palate.” 2017 IADR/AADR/CADR General Session & Exhibition.

Gudhimella S, Ibrahim Y, Karanth D, Pandrurada S, **Westgate PM**, Puleo D, Huja S. “Rate of Orthodontic Tooth Movement (OTM) in a Rodent Model Using Light Forces.” 2017 IADR/AADR/CADR General Session & Exhibition.

Gomez EM, Hatfield E, Garlitz K, **Westgate PM**, and Bada, HS. “Vitamin E in the preterm infant: a forgotten cause of hemolytic anemia.” 2017 poster presentation at the VIII Recent Advances in Neonatal Medicine conference. Wurzburg, Germany.

Lochan S, Hong H, Amrita P, **Westgate PM**, Bada HS, Bauer J, Giannone P, Sithisarn T. “Prenatal Opioid Exposure Alters Cortisol Levels in Early Postnatal Period.” Pediatric Academic Societies Annual Meeting 2018, Toronto, Canada.

Lochan S, Hong H, Amrita P, **Westgate PM**, Bada HS, Bauer J, Giannone P, Sithisarn T. “The Effect of in Utero Opioid Exposure on Neutrophin-3 Levels in the Newborn.” Pediatric Academic Societies Annual Meeting 2018, Toronto, Canada.

Radulescu A, **Westgate PM**, Bada HS. “Young children with obesity are at high risk for diabetes, fatty liver disease and 25-OH vitamin D3 deficiency.” Pediatric Academic Societies Annual Meeting 2018, Toronto, Canada.

Strelow F, **Westgate PM**, Pant A, Patwardhan A, Bada HS, Giannone P, Desai N, Abu Jawdeh E. “Relationship between Postnatal Growth, Caloric Intake and Intermittent Hypoxemia (IH) in Preterm Infants.” Pediatric Academic Societies Annual Meeting 2018, Toronto, Canada.

Mirsky E, Sithisarn T, **Westgate PM**, Desai N, Edens M, Bada HS. “Neurodevelopmental Outcomes of Infants with Neonatal Opioid Withdrawal Syndrome are Compounded by Number of Additional Drugs Used During Pregnancy and Discharge Placement.” Pediatric Academic Societies Annual Meeting 2018, Toronto, Canada.

Brasher M, Raffay T, Abhijit P, Bada HS, Giannone P, **Westgate PM**, Abu Jawdeh E. “Response to First Dose of Albuterol in Mechanically Ventilated Preterm Infants.” Pediatric Academic Societies Annual Meeting 2018, Toronto, Canada.

Montgomery K, Goldstein R, Abu Jawdeh E, Yozwiak J, Patra A, **Westgate PM**, Ragsdale L. “Impact of Individual Communication Styles on NICU Safety Culture Perception.” Pediatric Academic Societies Annual Meeting 2018, Toronto, Canada.

Segerstrom S, Kasarskis E, Fardo D, **Westgate PM**. Socioemotional concerns and well-being in ALS patients and caregivers: A longitudinal, dyadic analysis. Poster presented at the meeting of the Gerontological Society of America, 2018.

Lile JA, Alcorn JL, Hays LR, Kelly TH, Rush CR, Stoops WW, Wesley MJ, **Westgate PM**. Influence of a low dose of pregabalin maintenance on cannabis effects and related behaviors in daily cannabis users. Poster Presentation. Problems of Drug Dependence 2018: College on Problems of Drug Dependence 81st Annual Scientific Meeting. San Antonio, TX.

Mullins J, Hoch M, Kosik K, Heebner N, Gribble P, **Westgate PM**, Nitz A. Dry Needling Improves Static and Dynamic Balance in Individuals with Chronic Ankle Instability. Poster presented at: ACSM 66th Annual Meeting; May 30, 2019; Orlando, FL.

Lile JA, Alcorn JL, Hays LR, Kelly TH, Rush CR, Stoops WW, Wesley MJ, **Westgate PM**. Influence of pregabalin maintenance on cannabis effects and related behaviors in daily cannabis users. Poster Presentation. Problems of Drug Dependence 2020: College on Problems of Drug Dependence 82nd Annual Scientific Meeting. Hollywood, FL.

Smalls BL, Lacy ME, Hieronymus L, **Westgate PM**, MT Azam, Westneat SC, Schoenberg N. Barriers to Clinic Attendance among Rural Appalachian Adults with Diabetes. Category: Epidemiology-Other. American Diabetes Association [virtual]. Poster. June 2021.