Pamela A. Shaw

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Research Interests

Measurement error, survival analysis, clinical trials, design of complex epidemiologic studies, aging, cancer, nutritional and physical activity epidemiology, infectious diseases

Education

University of Washington, Seattle, Washington, Ph.D., Biostatistics, 2006

University of Washington, Seattle, Washington, M.S., Mathematics, 1994

Grinnell College, Grinnell, Iowa, B.A., French and Mathematics, 1990

Professional Positions

Senior Investigator, June 2021-Present, Biostatistics Division, Kaiser Permanente Washington Health Research Institute (KPWHRI), Seattle, WA

Associate Professor, July 2016–June 2021, Department of Biostatistics and Epidemiology, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA

Assistant Professor, July 2013–June 2016, Department of Biostatistics and Epidemiology, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA

Mathematical Statistician, October 2006–June 2013, Biostatistics Research Branch, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD

Statistical Research Associate, October 2005–September 2006, Women's Health Initiative, Fred Hutchinson Cancer Research Center, Seattle, Washington

Research Assistant, January–October 2005, June 2002–June 2004, Biostatistics, Fred Hutchinson Cancer Research Center, Seattle, Washington

*Teachin*g/Research *Assistant*, Winter 2003, Summer–Fall 2004, Department of Biostatistics, University of Washington, Seattle, Washington

*Statistica*l *Research Associate*, December 1998–July 2001, Cancer Prevention Research Program and Southwest Oncology Group Fred Hutchinson Cancer Research Center, Seattle, Washington

*Researc*h *Consultant*, September 1994–December 1998, Columbia Basin Research, University of Washington School of Fisheries Seattle, Washington

Statistics Instructor, September 1994–March 1995, University of Washington Extension, Seattle, Washington

*Researc*h/*Teachin*g *Assistant*, Autumn 1990–Spring 1994, Department of Mathematics, University of Washington, Seattle, Washington

Affiliate appointments

Affiliate Professor, June 2023 –present, Department of Biostatistics, School of Public Health, University of Washington, Seattle, WA

Adjunct Associate Professor, July 2021–present, Department of Biostatistics, Epidemiology and Informatics, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA

Affiliate Faculty, 2018–2023. Department of Biology and Wildlife, College of Natural Science and Mathematics, University of Alaska Fairbanks

Academic Awards and Honors

Biometrics Paper of the Year, International Biometric Society, 2023

Method to Extend Research in Time (MERIT) R37 Award, National Institute of Allergy and Infectious Diseases, NIH, 2023-present

Fellow, American Statistical Association, 2020

Distinguished Faculty Award, Department of Biostatistics, Epidemiology, and Informatics, University of Pennsylvania, 2019

Sandy Norman Teaching Award, Department of Biostatistics and Epidemiology, University of Pennsylvania, 2014

Blood Plenary Paper. Natural history of autoimmune lymphoproliferative syndrome associated with FAS gene mutations. Blood 123(13): 1989-1999, 2014

Blood Plenary Paper. GATA2 deficiency: a protean disorder of hematopoiesis, lymphatics, and immunity. Blood 123(6): 809-821, 2014

NIH Merit Award, National Institute of Allergy and Infectious Diseases, 2013-2014

Senior Student Award, Department of Biostatistics, University of Washington, 2006

Graduation with Honors, French and Mathematics, Grinnell College, 1990

Phi Beta Kappa, 1989

Grinnell College Trustee Merit Scholarship

Publications

Refereed Articles (student/post-doc led articles are marked with an *)

1. Slone J*, Amorim G, Semeere A, Diero L, Otero L, Crabtree-Ramirez B, Tao R, Duda SN, Musick B, Yiannoutsos C, Lumley T, **Shaw PA**, Shepherd BE. Analysis approaches to combine error-prone data with a subset of validated data: an application to a multinational study of Kaposi sarcoma and HIV. *American Journal of Epidemiology*, In press, 2026.

2. Gray S, Yu O, Gatto NM, Marcum ZA, Latimer CS, Postupna N, Su YR, Barthold D, van Dalen JW, Richard E, Keene CD, **Shaw PA**, McEvoy LK, Larson EB, Crane PK. Angiotensin II-Stimulating Antihypertensives and Dementia-related Neuropathology. *JAMA Network Open*, In press 2025.

3. Williamson B, Krakauer C, Johnson E, Gruber S, Shepherd BE, van der Laan MJ, Lumley T, Lee H, Hernandez Munoz JJ, Zhao F, Dutcher SK, Desai, R, Simon GE, Shortreed SM, Nelson JC, **Shaw PA**. Assessing treatment effects in observational data with missing confounders: A comparative study of practical doubly-robust and traditional missing data methods. *Statistics in Medicine*, In press Dec 2025,

4. Mehta SJ, **Shaw PA,** Reitz C, Brophy C, Okorie E, Williams K, Segura A, Tao J, Snider CK, Wollack C, Friday S, Rendle KA, Klaiman T, Glanz K, Rhodes C, Asch DA. Sequential Choice vs. Colonoscopy Outreach for Colorectal Cancer Screening: Design and Rationale of a Pragmatic Randomized Clinical Trial. *Contemporary Clinical Trials.* In press Dec 2025.

5. Hyun N and **Shaw PA**. An augmented likelihood approach incorporating error-prone auxiliary data into a survival analysis. *Statistics in Medicine.* In press, Nov 2025.

6. Amorim G, Slone J, Semeere A, Diero L, Otero L, Crabtree-Ramirez B, Tao R, Duda SN, Musick B, Yiannoutsos C, Lumley T, **Shaw PA**, Shepherd BE. Data validation in multinational observational studies with error-prone data: applying an optimal validation sampling strategy in a study of Kaposi sarcoma and HIV. *American Journal of Epidemiology*, In press, 2025.

7. Mehta SJ, Nadella P, **Shaw PA**, Reitz C, Brophy C, Okorie E, Williams K, Snider CK, Peifer MK, Rhodes C, Asch DA. Behavioral Interventions Improve Mailed Colorectal Cancer Screening Among Overdue Patients in a Randomized Trial. *Clinical Gastroenterology and Hepatology*, 2025 in press.

8. Steel TL, **Shaw PA**, Bradley KA, Johnson NJ, Hallgren KA, Matson TE, Bobb JF, Bosch NA, Afshar M, Burnham EL, Hough CL. Opening the DOOR to More Informative Hospital Trials by Ranking Treatment Experiences. *Annals of the American Thoracic Society*, 2025 Nov;22(11):1641-4.

9. Johnson JJ*, Ghosh S, **Shaw PA**, Neuhouser ML, Lampe JW, Tinker LF, Prentice RL, Tasevska N, Freedman LS, Boyer BB, Hopkins SE, Votruba SB, Krakoff J, O'Brien DM. The carbon isotope ratio of alanine is a biomarker of added sugar or sugar-sweetened beverage intake: a pooled analysis of four studies. *American Journal of Clinical Nutrition,* 2025;122(6):1769-1777.

10. Mindy Katz, Tanya Johns, Monique M. Martin, Alexis Burgess, Vanessa Claris, Gheorghe Stefan Volda, Jelena Pavlovic, Jonathan G. Hakun, **Pamela A. Shaw**, Judith Wylie-Rosett, Martin J. Sliwinski, Yasmin Mossavar-Rahmani. Recruitment of Racially & Ethnically Diverse Mid-life Adults to a Randomized Clinical Trial: the Multicultural Healthy Diet Study to Reduce Cognitive Decline & Alzheimer's Disease Risk study. *Alzheimer's & Dementia: TRCI.* 2025 Nov 14;11(4):e70174. doi: 10.1002/trc2.70174.

11. Mossavar-Rahmani Y, Hyun N, Hakun JG, Katz MJ, Pavlovic JM, Sliwinski MJ, **Shaw PA**. The effects of the Multicultural Healthy Diet on cognitive decline & Alzheimer's disease risk: A randomized controlled trial in middle-aged adults. *American Journal of Clinical Nutrition*, 2025 Jul;122 (1): 48-59.

12. Amorim G, Tao R, Lumley T, **Shaw PA**, Shepherd BE. Ascertainment Conditional Maximum Likelihood for continuous outcome under two-phase response-selective design, *Statistics in Medicine*, 2025 Jul;44(15-17):e70111.

13. Greenwood-Hickman MA, Zhu W, Idu A, Harrington LB, McCurry SM, LaCroix AZ, **Shaw PA**, Rosenberg DE. Associations Between 10-Year Physical Performance and Activities of Daily Living

Trajectories and Physical Behaviors in Older Adults. International Journal of Environmental Research and Public Health. 2025 Apr 29;22(5):704.

14. Heng S*, **Shaw PA**. Sensitivity analysis for binary outcome misclassification in randomization tests via integer programming. *Journal of Computational and Graphical Statistics*, 2025 Apr 16:1-4.

15. Proschan MA, **Shaw PA**. Connections between statistics and mathematics/probability. *American Statistician*, 2025 Mar 10:1-6.

16. Weberpals J, **Shaw PA**, Lin KJ, Wyss R, Plasek JM, Zhou L, Ngan K, DeRamus T, Raman SR, Hammill BG, Lee H. High-dimensional multiple imputation (HDMI) for partially observed confounders including natural language processing-derived auxiliary covariates. *American Journal of Epidemiology,* Online ahead of print, 2025 Jan 22:kwaf017. PMID 39844590

17. Yang JB*, Lumley T, Shepherd BE, **Shaw PA**. Optimum Allocation for Adaptive Multi-Wave Sampling in R: The R Package optimall. *Journal of Statistical Software*, 2025; *114*(10), 1–31. https://doi.org/10.18637/jss.v114.i10

18. Rosenberg DR, Wu Y, Idu A, Greenwood-Hickman MA,McCurry S, LaCroix A, **Shaw PA**. Historic Cognitive Function Trajectories as Predictors of Sedentary Behavior and Physical Activity in Older Adults, *Journal of Gerontology: Medical Sciences*, 2024 Jul;79(7):glae125.

19. Raman SR, Hammill BG, **Shaw PA**, Lee H, Toh S, Connolly JG, Dandreo KJ, Nalawade V, Tian F, Liu W, Li J, Hernández-Muñoz JJ, Glynn RJ, Desai RJ, Weberpals J. Analyzing Missingness Patterns in Data Using the SMDI toolkit: Application to a linked EHR-claims data pharmacoepidemiology study. *BMC Medical Research Methodology*, 2024 Oct 19;24(1):246.

20. Mehta SJ, Palat S, McDonald C, Reitz C, Okorie E, Williams K, Tao J, **Shaw PA**, Glanz K, Asch DA. A Randomized Trial of Choice Architecture and Mailed Colorectal Cancer Screening Outreach in a Community Health Setting. *Clinical Gastroenterology and Hepatology*. 2024 Oct: 22(10): 2117-2124.e2. PMCID: PMC11424265

21. Hakun JG, Benson L, Qiu T, Elbich DB, Katz M, **Shaw PA**, Sliwinski MJ, Mossavar-Rahmani Y. Cognitive Health Benefits of Everyday Physical Activity in a Diverse Sample of Middle-Aged Adults. Annals of Behavioral Medicine. 2024 Oct 19:kaae059.

22. Greenwood-Hickman, Shapiro LNN, Chen S, Crane PK, Harrington LB, Jonhson K, LaCroix AZ, Lane LG, McCurry S, **Shaw PA**, Rosenberg DE. Lifestyle-based behavioral predictors of mental health and well-being in community-dwelling older adults during the COVID-19 pandemic. *BMC Geriatrics*, 2024; 24, 676.

23. Weberpals J, Raman SR, **Shaw PA**, Lee H, Russo M, Hammill BG, Toh D, Connolly JG, Dandreo KJ, Tian F, Liu W, Li J, Hernández-Muñoz JJ, Glynn RJ, Desai RJ. A Principled Approach to Characterize and Analyze Partially Observed Confounder Data From Electronic Health Records: A Plasmode Simulation Study. *Clinical Epidemiology*, 2024; 16 329–343.

24. Lotspeich SC, Amorim GG, **Shaw PA**, Tao R, Shepherd BE. Optimal Multi-Wave Validation of Secondary Use Data with Outcome and Exposure Misclassification. *Canadian Journal of Statistics*, 2024 Jun;52(2):532-542.

25. Boe LA,* Lumley T, **Shaw PA**. Practical considerations for sandwich variance estimation in two-stage regression settings. *American Journal of Epidemiology*, 2024; 193(5):798-810.

26. Tebas P, Jadlowsky JK, **Shaw PA**, Tian L, Esparza E, Brennan AL, Kim S, Naing SY, Richardson MW, Vogel AN, Maldini CR. CCR5-edited CD4+ T cells augment HIV-specific immunity to enable post-rebound control of HIV replication. *The Journal of Clinical Investigation*. 2024 May 1;131(7).

27. Weberpals J, Raman SR, **Shaw PA**, Lee H, Hammill BG, Toh S, Connolly JG, Dandreo KJ, Tian F, Liu W, Li J, Hernández-Muñoz JJ, Glynn RJ, Desai RJ. smdi: an R package to perform structural missing data investigations on partially observed confounders in real-world evidence studies. JAMIA open. 2024 Apr 1;7(1):ooae008.

28. Amorim G, Tao R, Lotspeich S, **Shaw PA**, Lumley T, Patel RC, Shepherd BE. Three-phase generalized raking and multiple imputation estimators to address error-prone data. In press, *Statistics in Medicine* 2024 Jan;43(2):379-94.

29. Duan R, Liang CJ, **Shaw PA**, Tang CY, Chen Y: Testing the missing at random assumption in generalized linear models in the presence of instrumental variables. *Scandanavian Journal of Statistics*, 2024;51:334–354

30. Sneed NM, Heerman WJ, **Shaw PA**, Han K, Chen T, Bian A, Pugh S, Duda S, Lumley T, Shepherd BE. Associations Between Gestational Weight Gain, Gestational Diabetes, and Childhood Obesity Incidence. *Maternal and Child Health Journal,* 2024; 28(2):372-81.

31. Basner M, Barnett I, Carlin M, Choi G, Czech JJ, Ecker AJ, Gilad Y, Godwin T, Jodts E, Jones CW, Kaizi-Lutu M, Kali J, Opsomer JD, Park-Chavar S, Smith MG, Schneller V, Song N, **Shaw PA**. Effects of Aircraft Noise on Sleep: FAA National Sleep Study Protocol, *International Journal of Environmental Research and Public Health*, 2023 Nov 6;20(21):7024.

32. Tong J*, Duan R, Li R, Luo C, Moore JH, Zhu J, Foster GD, Volpp KG, Yancy WS, **Shaw PA**, Chen Y. Quantifying and correcting bias due to outcome dependent self-reported weights in longitudinal study of weight loss interventions. *Scientific Reports*. 2023 Nov 4;13(1):19078.

33. Shepherd BE, Han K, Chen T, Bian A, Pugh S, Duda SN, Lumley T, Heerman WJ, **Shaw PA**. Multiwave validation sampling for error-prone electronic health records. *Biometrics,* 2023 Sep; 79 (3): 2649-2663.

34. Boe LA*, **Shaw PA**. An augmented likelihood approach for the Cox proportional hazards model with interval-censored auxiliary and validated outcome data—with application to the Hispanic Community Health Study/Study of Latinos. *Statistical Methods in Medical Research*. 2023;32(8):1588-1603.

35. Teitelman AM, Hong-Van T, Chittamuru D, **Shaw PA**, Nandi V, Davis A, Lipsky R, Darlington CK, Fiore D, Koblin BA. A Randomized Controlled Pilot Study of Just4Us, a Counseling and Navigation Intervention to Promote Oral HIV Prophylaxis Uptake Among PrEP-Eligible Cisgender Women. *AIDS and Behavior*, 2023 Sep;27(9):2944-58.

36. Boe L*, **Shaw PA**, Midthune D, Gustafson P, Kipnis V, Park E, Sotres-Alvarez D, Freedman L. Issues in Implementing Regression Calibration Analyses. *American Journal of Epidemiology*, 2023 Aug; 192(8):1406–1414.

37. Boe L*, Mossavar-Rahmani Y, Sotres-Alvarez D, Durazo-Arvizu R, Kaplan R, **Shaw PA**. Nutritional blood concentration biomarkers in the Hispanic Community Health Study/Study of Latinos: Measurement characteristics and power. *American Journal of Epidemiology*, 2023 Aug; 192(8):1288-1303.

38. Wu Y*, Rosenberg DE, Greenwood-Hickman MA, McCurry SM, Proust-Lima C, Nelson JC, Crane PK, LaCroix AZ, Larson EB, **Shaw PA**. Analysis of the 24-Hour Activity Cycle: An illustration *examining the*

association with cognitive function in the Adult Changes in Thought (ACT) Study. Frontiers Psychology, 2023 Mar; 14: 1083344.

39. Mossavar-Rahmani Y, **Shaw PA**, Hakun JG, Katz MJ, Wylie- Rosett J, Sliwinski MJ. Multicultural healthy diet to reduce cognitive decline & Alzheimer's disease risk: Study protocol for a pilot randomized controlled trial. *Contemporary Clinical Trials*, 2023 Jan 1;124:107006.

40. Herman JD, Wang C, Burke JS, Zur Y, Compere H, Kang J, Macvicar R, Taylor S, Shin S, Frank I, Siegel D, Tebas P, Choi GH, **Shaw PA**, Yoon H, Pirofski L, Juelg B, Bar KJ, Lauffenburger D, Alter G. A role for Nucleocapsid-specific antibody function in Covid-19 Convalescent plasma therapy. *Cell Reports Medicine* 2022 Nov; 3(11):100811.

41. Mitchell CM*, Oxtoby LE, **Shaw PA**, Budge SM, Wooller MJ, Cabeza de Baca T, Krakoff J, Votruba S, O'Brien DM. Carbon isotope ratios of plasma and RBC fatty acids identify meat consumers in a 12-week inpatient feeding study of 32 men. *Journal of Nutrition*, 2022 Dec;152(12):2847-55.

42. Johnson JJ*. **Shaw PA**, Wooller MJ, Krakoff J, Votruba SB, O'Brien DM. Amino acid nitrogen isotope ratios respond to fish and meat intake in a 12-week inpatient feeding study of adult men. *Journal of Nutrition*, 2022 Sep; 152(9):2031–2038.

43. Li Y, Hwang WT, Maude SL, Teachey DT, Frey NV, Myers RM, Leahy AB, Liu H, Porter DL, Grupp SA, **Shaw PA**. Statistical considerations for analyses of time-to-event endpoints in oncology clinical trials: Illustrations with CAR-T immunotherapy studies. *Clinical Cancer Research,* 2022 Sep 15; 28(18):3940-3949.

44. Daniell H, Nair SK, Shi Y, Wang P, Montone KT, **Shaw PA**, Choi GH, Ghani D, Weaver J, Rader DJ, Margulies KB, Collman RG, Laudanski K, Bar KJ. Decrease in angiotensin-converting enzyme 2 activity but not concentration in plasma/lungs in COVID-19 patients offers clues for diagnosis/treatment. *Molecular Therapy Methods & Clinical Development*, 2022 Sep 8;26:266-78.

45. Ellenberg SE and **Shaw PA**. Early termination of clinical trials for futility: Considerations for a Data Safety Monitoring Board. *NEJM Evidence*, 2022 June; 1 (7) :EVIDctw2100020.

46. Mehta SJ, Mallozzi C, **Shaw PA**, Reitz C, McDonald C, Vandertuyn M, Balachandran M, Kopinsky M, Sevinc C, Johnson A, Ward R, Park SH, Snider CK, Rosin R, Asch DA, Text Messaging and Behavioral Interventions for COVID-19 Vaccination Outreach: A Randomized Clinical Trial, *JAMA Network Open*, 2022 June;5(6):e2216649.

47. **Shaw PA**, Yang JB, Mowery DL, Schriver ER, Mahoney KB, Bar KJ, Ellenberg SS. Determinants of hospital outcomes for COVID-19 infections in a large Pennsylvania Health System. *PLoS ONE*, 2022 May 19; 17(5): e0268528.

48. Watson DL*, **Shaw PA**, Petsis DT, Pickel J, Bauermeister JA, Frank I, Wood SK, and Gross R. A retrospective study of HIV pre-exposure prophylaxis counseling among non-Hispanic Black youth diagnosed with bacterial sexually transmitted infections in the United States, 2014-2019. *Journal of the International AIDS Society,* 2022 Feb;25(2):e25867.

49. Troxel, Andrea B., Eva Petkova, Keith Goldfeld, Mengling Liu, Thaddeus Tarpey, Yinxiang Wu, Danni Wu et al. "Association of Convalescent Plasma Treatment With Clinical Status in Patients Hospitalized With COVID-19: A Meta-analysis." *JAMA Network Open*, 2022: 5(1): e2147331-e2147331.

50. Han K*, **Shaw PA**, Lumley T. Combining multiple imputation with raking of weights in the setting of nearly-true models. *Statistics in Medicine*, 2021 Sep. Early view DOI: 10.1002/sim.9210

51. Lotspeich SC*, Shepherd BE, Amorim GGC, **Shaw PA**, Tao R. Efficient odds ratio estimation using error-prone data from a multi-national HIV research cohort. *Biometrics.* 2022 Dec;78(4):1674-85.

52. Bar KJ, **Shaw PA**, Choi GH, Aqui N, Fesnak A, Yang J, HaSoto-Calderon H, Grajales L, Starr J, Andronov M, Mastellone M, Amonu C, Feret G, DeMarshall M, Buchanan M, Caturla M, Gordon J, Wanicur A, Monroy MA, Mampe F, Lindemuth E, Gouma S, Mullin A, Barilla H, Pronina A, Irwin L, Thomas R, Eichinger R, Demuth F, Luning Prak ET, Pascual JL, Short W, Elovitz M, Baron J, Meyer N, Degnan K, Frank I, Hensley SE, Siegel DL, and Tebas P. A randomized controlled study of convalescent plasma for individuals hospitalized with COVID-19. *Journal of Clinical Investigation,* 2021 Dec 15;131(24).

53. Amorim G, Tao R, Lotspeich SC, **Shaw PA**, Lumley T, Shepherd BE. Two-Phase Sampling Designs for Data Validation in Settings with Covariate Measurement Error and Continuous Outcome. *Journal of the Royal Statistical Society, Series A*. 2021 Oct;184(4):1368-1389.

54. Boe LA*, Tinker LF, **Shaw PA**. An Approximate Quasi-Likelihood Approach for Error-Prone Failure Time Outcomes and Exposures. *Statistics in Medicine,* 2021; 40 (23): 5006-5024.

55. Oh E*, Shepherd BE, Lumley T, **Shaw PA**. Improved Generalized Raking Estimators to Address Dependent Covariate and Failure-Time Outcome Error. *Biometrical Journal*, 2021;63(5):1006-27.

56. Baldoni P*, Sotres-Alvarez D, Lumley TS, **Shaw PA**. On the use of Regression Calibration in a Complex Sampling Design with Application to the Hispanic Community Health Study/Study of Latinos. *American Journal of Epidemiology,* 2021; 190(7): 1366–1376.

57. **Shaw PA**, He J, and Shepherd B. Regression calibration to correct correlated errors in outcome and exposure. *Statistics in Medicine*, 2021; 40(2): 271-286.

58. Han K,* Lumley T, Shepherd BE, **Shaw PA**. Two-phase analysis and study design for survival models with error-prone exposures. *Statistical Methods in Medical Research*, 2021, Vol. 30(3) 857–874

59. Oh EJ*, Shepherd BE, Lumley T, **Shaw PA**. Raking and regression calibration: Methods to address bias from correlated covariate and time-to-event error. *Statistics in Medicine*. 2021;40(3):631–649.

60. Tao R, Lotspeich SC, **Shaw PA**, Shepherd BE. Efficient semiparametric inference for two-phase studies with outcome and covariate measurement errors. *Statistics in Medicine*, 2021; 40(3):725–738.

61. Lou C, Habes M, Illenberger NA, Ezzati A, Lipton RB, **Shaw PA**, Stephens-Shields AJ, Akbari H, Doshi J, Davatzikos C, Shinohara RT. Leveraging machine learning predictive biomarkers to augment the statistical power of clinical trials with baseline magnetic resonance imaging. *Brain Communications.* 2021;3(4):fcab264.

62. Myers RM, Li Y, Barz Leahy A, Barrett DM, Teachey DT, Callahan C, Fasano CC, Rheingold SR, DiNofia A, Wray L, Aplenc R, Baniewicz D, Liu H, **Shaw PA,** Pequignot E, Getz KD, Brogdon JL, Fesnak AD, Siegel DL, Davis MM, Bartoszek C, Lacey SF, Hexner E, Chew A, Wertheim GB, Levine BL, June CH, Grup SA, Maude SL. Humanized CD19-targeted chimeric antigen receptor (CAR) T cells in CAR-naive and CAR-exposed children and young adults with relapsed or refractory acute lymphoblastic leukemia. *Journal of Clinical Oncology*. 2021 Sep 20;39(27):3044-55.

63. Hanna DB, Hua S, Gonzalez F, Kershaw KN, Rundle AG, Van Horn LV, Wylie-Rosett J, Gellman MD, Lovasi GS, Kaplan RC, Mossavar-Rahmani Y, **Shaw PA**. Neighborhood Population Density is associated with lower potassium intake in the Hispanic Community Health Study/Study of Latinos (HCHS/SOL). *International Journal of Environmental Research and Public Health Special Issue: Neighborhoods and Cardiovascular Risk,* 2021; 18(20):10716.

64. Yadav A, Kossenkov AV, Showe LC, Ratcliffe SJ, Choi GH, Montaner LJ, Tebas P, **Shaw PA**, Collman RG. Lack of Atorvastatin Effect on Monocyte Gene Expression and Inflammatory Markers in HIV-1-infected ART-suppressed Individuals at Risk of non-AIDS Comorbidities. *Pathogens and Immunity*. 2021; 6(2):1-26.

65. Glanz K, **Shaw PA**, Kwong PL, Chung A, Zhu J, Huang Q, Hoffer K, Volpp KG. Effect of financial incentives and environmental strategies on weight loss in The Healthy Weigh Study: A Randomized Controlled Trial. *JAMA Network Open*. 2021;4(9):e2124132.

66. Mehta SJ, Day SC, Norris AH, Sung J, Reitz C, Wollack C, Snider CK, **Shaw PA**, Asch DA.: Behavioral interventions to improve population health outreach for hepatitis C screening: randomized clinical trial. *British Medical Journal*. 2021 May 18;373.

67. Johnson JJ*, **Shaw PA**, Oh EJ, Wooller MW, Merriman S, Yun HY, Larsen T, Krakoff J, Votruba SB, O'Brien DM. The carbon isotope ratios of nonessential amino acids identify sugar-sweetened beverage consumers in a 12-week clinical feeding study with varying SSB and meat exposures. American *Journal of Clinical Nutrition* 2021 May;113(5):1256-64.

68. Tebas P, Jadlowsky JK**, Shaw PA**, Tian L, Esparza E, Brennan A, Kim S, Naing SY, Richardson MW, Vogel AN, Maldini C, Kong H, Liu X, Lacey SF, Bauer AB, Mampe F, Richman LP, Lee G, Ando D, Levine BL, Porter DL, Zhao Y, Siegel DL, Bar KJ, June CH, and Riley JL.: CCR5-edited CD4 T cells augment HIV-specific immunity to enable post rebound control of HIV replication. *The Journal of Clinical Investigation*. 2021 Apr 1;131(7).

69. Wasserman D. Alameh MG, de Silva T, Collini P, Hornsby H, Brown R, LaBranche CC, Edwards RJ, Sutherland L, Santra S, Mansouri K, Gobeil S, McDanal C, Pardi N, Hengartner N, Lin PJC, Tam Y, **Shaw PA** Lewis MG, Boesler C, Şahin U, Acharya P, Haynes BF, Korber B, Montefiori DC. D614G Spike Mutation Increases SARS CoV-2 Susceptibility to Neutralization. *Cell Host & Microbe*; 2021 Jan 13; v29: 23–31.

70. Bien-Gund CH*, Choi GH, Mashas A, **Shaw PA**, Miller M, Gross R, and Brady KA. Persistent disparities in smoking rates among PLWH compared to the general population in Philadelphia, 2009-2014 *AIDS and Behavior*, 2020 Jun 26; v25: 148-153.

71. Selig K*, **Shaw PA**, Ankerst DP. Bayesian information criterion approximations for model selection in multivariate logistic regression with application to electronic medical records. *The International Journal of Biostatistics*, 2020; pp. 20200045. https://doi.org/10.1515/ijb-2020-0045

72. Shepherd BE, **Shaw PA**. Errors in multiple variables in HIV cohort and electronic health record data: statistical challenges and opportunities. *Statistical Communications in Infectious Disease*, 2020; 12 (s1), https://doi.org/10.1515/scid-2019-0015.

73. Proschan MA, **Shaw PA**. Diagnosing Fraudulent Baseline Data in Clinical Trials. *PLoS ONE* 2020;15(9):e0239121.

74. Illenberger N*, Small DS, and **Shaw PA**. Understanding regression to the mean in the context of synthetic controls and other matched difference in difference methods. *Epidemiology* 2020; 31(6):815-22.

75. Giganti MJ*, **Shaw PA**, Chen G, Bebawy SS, Turner MM, Sterling TR, Shepherd BE: Accounting for dependent errors in predictors and time-to-event outcomes using validation samples and multiple imputation *Annals of Applied Statistics* 2020;14(2):1045-61.

76. Keogh RH, **Shaw PA**, Gustafson P, Carroll RJ, Deffner V, Dodd KW, Küchenhoff H, Tooze JA, Wallace MP, Kipnis V, Freedman LS. STRATOS guidance document on measurement error and misclassification of

variables in observational epidemiology: Part I – basic theory, validation studies and simple methods of adjustment. *Statistics in Medicine* 2020 Jul 20;39(16):2197-2231.

77. **Shaw PA**, Gustafson P, Carroll RJ, Deffner V, Dodd KW, Keogh RH, Kipnis V, Tooze JA, Wallace MP, Küchenhoff H, Freedman LS. STRATOS guidance document on measurement error and misclassification of variables in observational epidemiology: Part II –more complex methods of adjustment and advanced topics. *Statistics in Medicine* 2020 Jul 20;39(16):2232-2263.

78. Diorio C**, **Shaw PA****, Orlenka A, Pequignot E, Chen F, Aplenc R, Barrett DM, Bassiri H, Berg RA, Behrens E, Burukpadee C, Callahan C, Finkelstein J, Fitzgerald JC, Frey N, Gonzalez VE, Levine BL, Maude SL, Meyer NJ, Nazimuddin F, Rheingold SR, Rose-John S, White JC, Wertheim G, Zheng Z, June CH, Grupp SA, Melenhorst JJ, Lacey SF, Weiss SL, Teachey DT. Diagnostic Biomarkers to Differentiate Sepsis from Cytokine Release Syndrome in Critically Ill Children. *Blood Advances* 2020; 4(20): 5174–5183. **Equally contributed.

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Pre-Prints

Yang JB, Shepherd BE, Lumley T, **Shaw PA.** Optimal two-phase sampling designs for generalized raking estimators with multiple parameters of interest. arXiv preprint arXiv:2507.16945. 2025 Jul 22.

Shaw PA, Gruber S, Williamson BD, Desai R, Shortreed SM, Krakauer C, Nelson JC, van der Laan MJ. A cautionary note for plasmode simulation studies in the setting of causal inference. arXiv preprint arXiv:2504.11740. 2025 Apr 16.

Williamson BD, Krakauer C, Johnson E, Gruber S, Shepherd BE, van der Laan MJ, Lumley T, Lee H, Munoz JJ, Zhao F, Dutcher SK, Desai R, Simon GE, Shortreed SM, Nelson JC, **Shaw PA**. Assessing treatment effects in observational data with missing confounders: A comparative study of practical doubly-robust and traditional missing data methods. arXiv preprint arXiv:2412.15012. 2024 Dec 19, Last accessed 2024 Dec 22.

Xu D, **Shaw P**, Barnett I. Novel Non-Negative Variance Estimator for (Modified) Within-Cluster Resampling. Pre-print, arXiv:1911.12882 [stat.ME].

Editorials and commentaries

Shaw PA. Analyses of Physical Activity and Health—Are Our Methods Too Sedentary? JAMA Network Open. 2019 Oct 2;2(10):e1914085.

Freedman LS and **Shaw PA**.: On the formation and use of calibration equations in nutritional epidemiology- Discussion of the Paper by R. L. Prentice and Y. Huang. *Statistical Theory and Related Fields*, 2018; 2(1): 11-13.

Shaw PA Combination versus monotherapy for septic shock patients [Commentary]. *Critical Care Medicine* 2010; Sep; 38 (9): 1905-6.

Marques A, **Shaw P**, Schmid CH, Steere A, Kaplan RF, Hassett A, Shapiro E, Wormser GP. Re: A randomized, placebo-controlled trial of repeated IV antibiotic therapy for Lyme encephalopathy. Prolonged Lyme disease treatment: enough is enough [Commentary]. *Neurology*; 2009 Jan 27;72 (4):383-4.

Books

Proschan MA and **Shaw PA**. *Essentials of Probability Theory for Statisticians*. Chapman & Hall/CRC Texts in Statistical Science, March 2016.

Book Chapters

Shaw PA. Regression calibration for covariate measurement error. Chapter in: *Handbook of Measurement Error Models,* Editors: Grace Yi, Aurore Delaigle, Paul Gustafson. Chapman and Hall/CRC, 2021.

Shaw PA and Proschan. Estimation and Hypothesis Testing. Chapter In: *Principles and Practice of Clinical Trials*, Editors: Steven Piantadosi and Curtis Meinert. Springer, ePub online August 2020. Doi: https://doi.org/10.1007/978-3-319-52677-5.

Wakim PG and **Shaw PA**. Data and Safety Monitoring. Chapter 10 In: Gallin JI, Ognibene FP. *Principles and Practice of Clinical Research,* 4th Edition. Elsevier Inc.: Academic Press, 2018.

Shaw PA, Lee Johnson L, Borkowf CB. Issues in Randomization. Chapter 23 In: Gallin JI, Ognibene FP. *Principles and Practice of Clinical Research,* 4th Edition. Elsevier Inc.: Academic Press, 2018.

Lee Johnson L, Borkowf CB, **Shaw PA**. Hypothesis Testing. Chapter 24 In: Gallin JI, Ognibene FP. *Principles and Practice of Clinical Research,* 4th Edition. Elsevier Inc.: Academic Press, 2018.

Shaw PA, Lee Johnson L, Proschan MA. Intermediate Topics in Biostatistics. Chapter 27 In: Gallin JI, Ognibene FP. *Principles and Practice of Clinical Research,* 4th Edition. Elsevier Inc.: Academic Press, 2018.

Mossavar-Rahmani Y, Tinker LF, Neuhouser ML, Huang Y, **Shaw P**, Beasley JM, Di C, Zheng C, Li W, Johnson K, and Prentice RL. Women's Health Initiative Dietary Modification Trial: Update and Application of Biomarker Calibration to Self-Report Measures of Diet and Physical Activity In: N. Balakrishnan, *ed., Methods and Applications of Statistics in Clinical Trials, Volume 1: Concepts, Principles, Trials, and Designs*. John Wiley and Sons; 2013.

Other non-Refereed Scholarly Publications

Stayner L, Pearce N, Nøhr EA, Freeman LB, Deffner V, Ferrari P, Freedman LS, Kogevinas M, Kromhout H, Lewis S, MacLehose R, Parent ME, Lorenzo R, **Shaw P**, Wedekind R. Chapter 4. Information bias: Misclassification and mismeasurement of exposure and outcome. IARC Scientific Publications. 2024 Jan 1(171).

Carpenter J, Abrahamowicz M, van Geloven N, Gustafson P, Huebner M, Keogh R, Sauerbrei W, **Shaw P**, Goetghebeur E: STRengthening Analytical Thinking for Observational Studies (STRATOS): Six foci for the next three years. Biometric Bulletin, 2023; 40(4):7-9.

Sauerbrei W, Abrahamowicz M, Baillie M, De Stavola B, Gail M, Huebner M, Keogh R and **Shaw P** for the STRATOS initiative STRengthening Analytical Thinking for Observational Studies - a very brief update on the achievements of the STRATOS initiative in the last 5 years. Biometric Bulletin, 2022; 39(3):17-19.

Shaw PA and Hendriek Boshuizen on behalf of STRATOS TG4**.** STRengthening Analytical Thinking for Observational Studies (STRATOS): Updates from the Measurement Error and Misclassification Topic Group (TG4). *International Biometric Society Biometric Bulletin*, 2021; 38 (1): 8-9.

Shaw PA. The appropriate use of statistics in biological sciences. *The American Association of Immunologists Newsletter*, 2010, March/April.

Anderson J, Hayes J, **Shaw P**, Zabel R. *Columbia River Salmon Passage Model. CRiSP1.5 Theory, Calibration and Validation Manual*. Columbia Basin Research, Seattle, WA, 1996.

Shaw P. *Gas saturation and sensitivity using CRiSP. Dissolved Gas Abatement Study Phase I*, Army Corps of Engineers Technical Report, Portland, Oregon, 1996.

Presentations (Last five years)

"Statistical Considerations for Time-to-Event Outcomes with Intercurrent Events: Illustrations with CAR-T Immunotherapy Trials in Oncology" TANDEM Meetings of Transplantation & Cellular Therapy of ASTCT and CIMBTR, Salt Lake City, UT Feburary 6, 2026.

"Assessing Treatment Effects in Observational Data with Missing Confounders: A Comparative Study of Practical Doubly-Robust and Traditional Missing Data Methods", American Statistical Society Joint Statistical Meetings, Nashville, TN August 6, 2025

"A brief overview of the STRATOS Initiative", American Statistical Society Joint Statistical Meetings, Nashville, TN, August 6, 2025

"Assessing Treatment Effects in Observational Data with Missing Confounders: A Comparative Study of Practical Doubly-Robust and Traditional Missing Data Methods ",Victorian Center for Biostatistics (VICBiostat), Australia, Virtual Seminar, June 26, 2025

"A cautionary note for plasmode simulation studies in the setting of causal inference ", International Biometrics Society, Western North American Region (WNAR), Whistler, BC, Canada, June 18, 2025.

"Methods of analysis for error-prone data", Danish Epidemiologic Society (DES) Summer Meeting on Measurement Error and Information Bias in Epidemiological Research, Copenhagen, Denmark June 2, 2025

"Efficient validation design targeting multiple outcomes for analysis of error prone data from electronic health records " International Biometrics Society, International Biometric Conference (IBC), Atlanta, GA, December 10, 2024.

"Misclassification declassified: Inference and prediction from imperfect data Discussion" International Biometrics Society, Western North American Region (WNAR), Fort Collins, CO, June 13, 2024.

"Efficient validation design targeting multiple outcomes for analysis of error prone data from electronic health records " International Biometrics Society, Eastern North American Region (ENAR), Baltimore, MD, March 12, 2024.

"Efficient validation designs to support error-corrected analyses of EHR data", Biostatistics Seminar, Fred Hutchinson Cancer Research Center, Seattle, WA, February 7, 2024.

"Efficient validation designs to support error-corrected analyses of EHR data", 16th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2023), Berlin, Germany, December 17, 2023.

"Demystifying invited session proposals", Invited Discussion Panel, Women in Statistics and Data Science Conference, Bellevue, WA October 27, 2023.

"Improving Methods for Alzheimer's Disease/Alzheimer's Disease and Related Dementias (AD/ADRD) Discussion", American Statistical Society Joint Statistical Meetings, Toronto, Canada, August 2023

"Best practice recommendations for applying regression calibration", International Conference on Diet and Activity Monitoring (ICDAM), Limerick, Ireland, June 27, 2023

"Hazard ratio inference in clinical trials with time-to-event endpoints and limited sample size", Lifetime Data Science (LiDS) Conference, Raleigh, NC, June 2, 2023

"Flexible design-based estimators to address error prone data", Biostatistics Seminar, Columbia University Mailman School of Public Health, New York, NY, November 10, 2022.

"Addressing uncertainty in risk regression models adjusted for an error-prone exposure ", National Council on Radiation Protection and Measurement SC 1-28 Workshop: Recommendations on Statistical Approaches to Account for Dose Uncertainties in Radiation Epidemiologic Risk Models, Hybrid Meeting/Bethesda, MD, September 22, 2022.

"Advantages of Multi-Wave, Multi-Frame Sampling Designs for Analysis of Error-Prone Data from Electronic Health Records", American Statistical Association Joint Statistical Meeting, Washington DC, August 2022.

"Cautionary notes for regression analyses that use predicted values as an outcome or exposure", International Biostatistics Conference, Riga, Latvia, July 14, 2022.

"Trial Design Considerations, Including Dose-finding and Confirmatory Studies", Session Panelist, FDA-American College of Rheumatology Summit, Virtual meeting, May 18, 2022.

"Flexible design-based estimators to address error prone data", Biostatistics Seminar, Division of Biostatistics, University of California, Davis, May 10, 2022.

"Considerations for improved efficiency of design-based estimators to address error prone data", Biostatistics: Foundations and the Era of Data Science Conference, University of Waterloo, Virtual Meeting, April 28, 2022.

"Flexible design-based estimators to address error prone data", Department of Biostatistics Seminar, University of Washington, Seattle, WA, March 3, 2022.

"Open Science". STRATOS Inititative Virtual Meeting, Dec 14, 2021.

"Understanding and adjusting for Berkson error arising from prediction equations: Examples from the Hispanic Community Health Study ", World Trade Center Registry, Virtual Rountable Seminar, October 7, 2021.

"Statistical challenges of launching a randomized controlled trial of a COVID19 therapeutic at the start of the pandemic ", American Statistical Association Joint Statistical Meeting, Virtual Meeting, August 2021.

"On the use of predicted values in nutritional epidemiology: Example from the Hispanic Community Health Study/Study of Latinos (HCHS/SOL) ", Society for Epidemiologic Research Annual Meeting, Virtual Meeting, June 23, 2021.

"Efficient multi-wave validation sampling to address data errors in electronic health records", International Biometrics Society, Eastern North American Region (ENAR), Virtual Meeting, March 2021

"Determinants of hospital outcomes for COVID-19 infections in a large Pennsylvania Health System ", Converence on Retroviruses and Opportunistic Infections (CROI), Virtual Meeting, March 2021

"Error-prone failure time outcomes in electronic health records data: Methods for analysis and study design" Survival, Longitudinal And Multivariate data (SLAM) Working Group Seminar, John Hopkins University, February 19, 2021

"Calibration of Amino Acid Stable Carbon Isotope Ratios As Biomarkers of Human Diet " International Conference on Diet and Activity Monitoring (ICDAM), February 11, 2021

"Error-prone failure time outcomes in electronic health records data: Methods for analysis and study design" Kaiser Permanente Washington Health Research Institute, Seattle, WA January 26, 2021

Teaching Experience

- Instructor, Biostat/Stat 571 Regression Methods for Dependent Data, University of Washington School of Public Health, Winter Quarter, 2026
- Co-Instructor, Design and Analysis of Clinical Trials, University of Washington Seattle Summer Institutes, July 8-10, 2025;
- Co-Instructor, Introduction to Survival Analysis" University of Washington Seattle Summer Institutes, July 11-12, 2025;
- Co-Instructor, Biostat/EPI 536 Categorical Data in Epidemiology, University of Washington School of Public Health Autumn 2024
- Course co-Instructor, Understanding and tackling measurement error: a review of modern practical methods", Short Course, American Statistical Association Joint Statistical Meeting, Portland, Oregon, August 2024
- Co-Instructor, Design and Analysis of Clinical Trials, University of Washington Seattle Summer Institutes, July 8-10, 2024;
- Co-Instructor, Biostat/EPI 536 Categorical Data in Epidemiology, University of Washington School of Public Health Autumn 2023
- Course co-Instructor, Understanding and tackling measurement error: a review of modern practical methods, Invited Short Course, American Statistical Association Joint Statistical Meeting, Toronto, Canada, August 2023
- Co-Instructor, Design and Analysis of Clinical Trials, University of Washington Seattle Summer Institutes, July 10-12, 2023
- Co-Instructor, Design and Analysis of Clinical Trials, University of Washington Seattle Summer Institutes, July 20-22, 2022
- Guest Lecturer, "Missing data", BIOST 524 Design of Medical Studies, Department of Biostatistics, University of Washington, May 12, 2022
- Student Seminar Speaker, "Biostatistics Research Opportunities at Kaiser Permanente Washington Health Research Institute", Department of Biostatistics, University of Washington, April 27, 2022
- Course Director, BSTA 620 Probability, Department of Biostatistics and Epidemiology, University of Pennsylvania Perelman School of Medicine, Fall 2015-2017, 2020
- Co-Instructor, Biostatistics for Epidemiologic Methods II, Biostatistics for Epidemiologic Methods University of Pennsylvania School of Medicine Winter 2014, 2015, 2020
- Guest Lecturer, "Competing Risks" for EPID 638 Advanced Topics in Clinical Trials, Department of Biostatistics and Epidemiology, University of Pennsylvania Perelman School of Medicine, Dec 2019
- Guest Lecturer, "Strategies to address missing data in healthcare databases" for EPID 656 Clinical Database Research Methodology, Department of Biostatistics, Epidemiology, and Informatics, University of Pennsylvania Perelman School of Medicine, December 2019
- Course co-Instructor, Understanding and tackling measurement error: a whistle stop tour of modern practical methods, Invited Short Course, American Statistical Association Joint Statistical Meeting, Denver, CO, August 2019
- Guest Lecturer, "Missing data and Intent to Treat", EPID 640 Advanced Topics in Epidemiology, Department of Biostatistics, Epidemiology and Informatics, University of Pennsylvania Perelman School of Medicine, Feb 6, 2019
- Guest Lecturer, "Competing Risks" for EPID 638 Advanced Topics in Clinical Trials, Department of Biostatistics and Epidemiology, University of Pennsylvania Perelman School of Medicine, November 27 2018
- Guest Lecturer, "Missing data and Intent to Treat", EPID 640 Advanced Topics in Epidemiology, Department of Biostatistics, Epidemiology and Informatics, University of Pennsylvania Perelman School of Medicine, Feb 21, 2018
- Guest Lecturer, "Tables and Figures", BSTA 511 Biostatistics in Practice, Department of Biostatistics, Epidemiology and Informatics, University of Pennsylvania Perelman School of Medicine, Jan 31, 2018

- Guest Lecturer, "Missing Data" for EPID 638 Advanced Topics in Clinical Trials, Department of Biostatistics and Epidemiology, University of Pennsylvania Perelman School of Medicine, February 1, 2017
- E-Lecturer, "Data Safety Monitoring", Introduction to the Principles and Practices of Clinical Research, NIH Clinical Center, 2017-present
- Guest Lecturer, "Missing Data" for EPID 640 Advanced Topics in Epidemiology, Department of Biostatistics and Epidemiology, University of Pennsylvania Perelman School of Medicine, December 2, 2016
- Lecturer, "Data Safety Monitoring", Introduction to the Principles and Practices of Clinical Research, NIH Clinical Center, January 5, 2016
- Discussion Leader, Radiation Oncology Residents Journal Club, University of Pennsylvania Perelman School of Medicine January 23, 2015
- Lecturer, "Data Safety Monitoring", Introduction to the Principles and Practices of Clinical Research, NIH Clinical Center, January 13, 2015
- Guest Lecturer, EPID 638 Advanced Topics in Clinical Trials, Department of Biostatistics and Epidemiology, University of Pennsylvania Perelman School of Medicine, December 2, 2014
- Instructor, Independent Study-Selected Topics in Survival Analysis, University of Pennsylvania Perelman School of Medicine, Spring 2015
- Instructor, Independent Study-Propensity Score Analysis, University of Pennsylvania Perelman School of Medicine, Fall 2014
- Discussion leader, Penn Reading Project, University of Pennsylvania, August 25, 2014.
- Co-Instructor, Clinical Translational Research, Study Design Module, NIH, July 2013
- Lecturer, "Data Safety Monitoring", Introduction to the Principles and Practices of Clinical Research, NIH Clinical Center, February 26, 2013
- Guest Lecturer, "Randomization", Stat 6289 Clinical Trials, George Washington University, Feb 7, 2013
- Co-Instructor, Introduction to the Principles and Practices of Clinical Research, NIH/India Ministry of Science and Technology in New Delhi, India October 2012
- Co-Instructor, Clinical Translational Research, Study Design Module, NIH, July 2012
- Co-Instructor, Introduction to Probability Theory, Informal reading course with NIH Intramural Research Trainee, Fall 2010-Winter 2011
- Guest Lecturer, "Methods for Measurement Error in Survival Analysis", Biost 578 Measurement Error and Misclassification, Department of Biostatistics, University of Washington, Spring 2006
- Teaching Assistant, Department of Biostatistics, University of Washington, 2002-2005
    - Biost 511 Medical Biometry I
    - Biost 537 Survival Analysis in Epidemiology
    - Biost 570 Advanced Generalized Linear Models I
- Instructor, University of Washington Extension 1994-1995
    - Stat 220 Basic Statistics
    - Stat 311 Elements of Statistical Methods
- Instructor, Department of Mathematics, University of Washington
  Summer 1991-1994, Fall 1993
    - Math 124-125 Calculus with Analytic Geometry I,II
    - Math 308 Matrix Algebra with Applications
- Teaching Assistant, Department of Mathematics, University of Washington,
    - Fall 1990-Spring 1994
    - Math 120 Precalculus
    - Math 124-126 Calculus with Analytic Geometry I,II,II
    - Math 554 Linear Analysis

Mentoring

Research Advisor, Runjia Zou, Department of Biostatistics, University of Washington, 2025-present

MPH Dissertation Committee member, Rene Hawkes, Department of Epidemiology, University of Washington, 2025-present

PhD Dissertation Committee member, Hannah Baillie, Department of Epidemiology, University of Washington, 2025-present

PhD Dissertation Committee member, Hiwot Weldemariam, Department of Epidemiology, University of Washington, 2025-present

PhD Dissertation Committee member, James Peng, Department of Biostatistics, University of Washington, 2025-present

MS Dissertation Chair, Lu Bai, Department of Biostatistics, University of Washington, 2024-2025

Research Advisor, Nolan Cole, Department of Biostatistics, University of Washington, 2023-2024

Research Advisor, Jasper Yang, Department of Biostatistics, University of Washington, 2023-present

MS Research Mentor, Jasper Yang, Department of Mathematical Sciences, University of Essex, England, 2023

Faculty Mentor, Noorie Hyun, Division of Biostatistics, Kaiser Permanente Washington Health Research Institute, 2022- present

Research Advisor, Yinxiang Wu, Department of Biostatistics, University of Washington, 2021-2023

Research Advisor, Siyu Heng, PhD, Department of Applied Mathematics, University of Pennsylvania, 2021-2022

PhD Dissertation Committee Member, Jill Schnall, Department of Biostatistics and Epidemiology, University of Pennsylvania School of Medicine, 2021-2022

PhD Dissertation Committee Chair, Hailey Richardson, Department of Biostatistics, Epidemiology, and Informatics, University of Pennsylvania Perelman School of Medicine, 2020-2023

Biostatistics Lab Rotation Research Advisor for Amelia Schroeder, Department of Biostatistics, Epidemiology, and Informatics, University of Pennsylvania Perelman School of Medicine, 2020

Biostatistics Lab Rotation Research Advisor for Jenny Shen, Department of Biostatistics, Epidemiology, and Informatics, University of Pennsylvania Perelman School of Medicine, 2020

PhD Dissertation Committee Chair, Jiaxin Fan, Department of Biostatistics, Epidemiology, and Informatics, University of Pennsylvania Perelman School of Medicine, 2019-2020

MSCE Thesis Committee Member for Cedric Bien-Gund, Department of Biostatistics, Epidemiology, and Informatics, University of Pennsylvania Perelman School of Medicine, 2019-2022

PhD Dissertation Committee Chair for Nicholas Illenberger, Department of Biostatistics and Epidemiology, University of Pennsylvania School of Medicine, 2019-2022

Academic Advisor for Eunyoung Park, Department of Biostatistics, Epidemiology, and Informatics, University of Pennsylvania Perelman School of Medicine, 2019-2020

Biostatistics Lab Rotation Research Advisor for Eunyoung Park, Department of Biostatistics,

Epidemiology, and Informatics, University of Pennsylvania Perelman School of Medicine, 2019

PhD Disseration Committee Member, Jessica Johnson, Biological Sciences, University of Alaska, Fairbanks, 2018-2023

PhD Dissertation Advisor for Lilian Boe, Department of Biostatistics and Epidemiology, University of Pennsylvania School of Medicine, 2018-2022

PhD Dissertation Committee Member for Lu Huang, Department of Biostatistics and Epidemiology, University of Pennsylvania School of Medicine, 2018-2020

MSCE Thesis Committee Member for Dovie Watson, Department of Biostatistics and Epidemiology, University of Pennsylvania School of Medicine, 2018-2020

Academic Advisor for Francesca Mandel, Department of Biostatistics, Epidemiology, and Informatics, University of Pennsylvania Perelman School of Medicine, 2018-2020

Post-doctoral mentor Kyunghee Han, Department of Biostatistics and Epidemiology, University of Pennsylvania School of Medicine, 2018- 2020

Master's Thesis Advisor for Nicholas Illenberger, Department of Biostatistics and Epidemiology, University of Pennsylvania School of Medicine, 2018-2019

Biostatistics Lab Rotation Research Advisor for Lilian Boe, Department of Biostatistics, Epidemiology, and Informatics, University of Pennsylvania Perelman School of Medicine, 2017-2018

PhD Dissertation Committee Member for Le Wang, Department of Biostatistics and Epidemiology, University of Pennsylvania School of Medicine, 2017-2018

Academic Advisor for Lilian Boe, Department of Biostatistics, Epidemiology, and Informatics, University of Pennsylvania Perelman School of Medicine, 2017-2018

Master's Thesis Advisor for Mackenzie Edmondson, Department of Biostatistics and Epidemiology, University of Pennsylvania School of Medicine, 2017-2018

Master's Thesis Advisor for Raul Torres Allende, Department of Biostatistics and Epidemiology, University of Pennsylvania School of Medicine, 2017-2018

PhD Dissertation Advisor for Eric Oh, Department of Biostatistics and Epidemiology, University of Pennsylvania School of Medicine, 2017-2020

Biostatistics Lab Rotation Research mentor for Nicholas Illenberger, Department of Biostatistics and Epidemiology, University of Pennsylvania School of Medicine, Fall 2017

Biostatistics Lab Rotation Research mentor for Joanna Milton, Department of Biostatistics and Epidemiology, University of Pennsylvania School of Medicine, Spring 2017

MSCE Thesis Committee Member for Refilwe Senyatso, Department of Biostatistics and Epidemiology, University of Pennsylvania School of Medicine, 2016-2017

Biostatistics Research mentor for Eric Oh, Department of Biostatistics and Epidemiology, University of Pennsylvania School of Medicine, 2015-2017

PhD Dissertation co-Advisor for Emily Xu, Department of Biostatistics and Epidemiology, University of Pennsylvania School of Medicine, 2014-2017

MSCE Thesis Committee Member for Tatyana Kushner, Department of Biostatistics and Epidemiology, University of Pennsylvania School of Medicine, 2014-2016

MSCE Thesis Committee Member for Erwin Calgua Guerra, Department of Biostatistics and Epidemiology, University of Pennsylvania School of Medicine, 2013-2016

MSCE Thesis Committee Member for Grace Wang, MD, Department of Biostatistics and Epidemiology, University of Pennsylvania School of Medicine, 2014-2015

Biostatistics Advisor for Victoria Ulrich, MPH student, Graduate Program in Public Health, University of Pennsylvania Perelman School of Medicine, 2014

Research Assistant Mentor for Jiwei He, Department of Biostatistics and Epidemiology, University of Pennsylvania School of Medicine, 2013-2014

MSCE Thesis Committee Member for Hilda Fernandez, Department of Biostatistics and Epidemiology, University of Pennsylvania School of Medicine, 2013-2014

MSCE Thesis Committee Member for Caritha Gowda, Department of Biostatistics and Epidemiology, University of Pennsylvania School of Medicine, 2013-2014

Local Committee Membership

Scientific Advancement Committee (SAC), Kaiser Permanente Washington Health Research Institute 2025-present

Affiliates/Adjuncts/Clinical Appts Committee, University of Washington Department of Biostatistics, Seattle, WA, 2024-present

2025 Seattle Symposium Committee, University of Washington Department of Biostatistics, Seattle, WA, 2024-present

Kaiser Permanente Washington Health Research Institute Mentoring Award Committee, 2022-2023.

Committee on Appointments and Promotions (COAP), Department of Biostatistics, Epidemiology, and Informatics, University of Pennsylvania Perelman School of Medicine, 2018-2020

Data and Safety Monitoring Board, Wellth Trial, University of Pennsylvania (S. Kimmel, PI) (Member), 2017-2019

Admissions Committee, Division of Biostatistics, University of Pennsylvania Perelman School of Medicine, Chair 2019-present; co-Chair 2017-2018; Member 2016-present

Academic Advising Committee, Division of Biostatistics, University of Pennsylvania, 2016-present

Data and Safety Monitoring Board, Reducing Proviral HIV DNA With Interferon-a (BEAT-HIV), L. Montaner, PI), Wistar Institute, 2014-2018

Data and Safety Monitoring Board, University of Pennsylvania Cancer Center (UPCC) 31213 (CART-meso in mesothelin expressing cancers; A. Haas, PI) (Member) 2014-2018

Service Center Committee, Center for Clinical Epidemiology and Biostatistics, Perelman School of Medicine, University of Pennsylvania, 2014-present

Computing Committee, Division of Biostatistics, University of Pennsylvania, Co- Chair 2016-2017; member 2013-present

National and International Committee Membership

Cardiovascular and Renal Drugs Advisory Committee (CRDAC), Ad hoc Committee Member, Food and Drug Administration October 10, 2024

Gastrointestinal Drugs Advisory Committee (GIDAC), Ad hoc Committee Member, Food and Drug Administration September 13, 2024

National Institute of Allergy and Infectious Diseases Special Emphasis Panel, August 8, 2024

Oncologic Drugs Advisory Committee (ODAC), Ad hoc Committee Member, Food and Drug Adminstration October 4, 2023

Data and Safety Monitoring Board, Division of AIDS, National Institute of Allergy and Infectious Diseases (NIAID), member 2023-present

Data and Safety Monitoring Board, National Institute of Neurologic Disease and Stroke (NINDS) Immunotherapy for Parkinson's Disease, member 2023-present

Data and Safety Monitoring Board, NIH/NICHD Study, CHV-NEO: Community-based digital communication to support neonatal health , Chair 2023-present

Analytics and Statistics for Population Research Panel A (ASPA) Study Section (Ad hoc member), National Institutes of Health, 2023

Diversity, Equity and Inclusion Committee, Eastern North American Region International Biometric Society, Member 2022- present

Pulmonary-Allergy Drugs Advisory Committee (PADAC), Ad hoc Committee Member, Food and Drug Adminstration November 9, 2022

Oncologic Drugs Advisory Committee (ODAC), Ad hoc Committee Member, Food and Drug Adminstration Oct 4-5, 2022

National Cancer Institute (NCI) Biostatistics Branch Site Visit Team, 2022

Data and Safety Monitoring Board, Center for International Blood and Marrow Transplant Resource for Clinical Investigation in Blood and Marrow Transplantation (CIBMTR RCI BMT), Member 2021-present

Regional Committee, Eastern North American Region International Biometric Society, Member 2020-present

Arthritis Advisory Committee (AAC), Ad hoc Committee Member, Food and Drug Adminstration May 6, 2021

Biostatistical Methods and Research Design (BMRD) Study Section (Ad hoc member), National Institutes of Health, 2021

Data and Safety Monitoring Board, NIH/NICHD Study, Mobile WACh-NEO: Mobile Solutions for Neonatal Health and Maternal Support , Chair 2020-present

Chair-Elect/Chair/Past-Chair, Biometrics Section of the American Statistical Association, 2020-2022.

NIAID Special Emphasis Panel Member (ZAI1 CD-A S1), HIV/AIDS Clinical Trials Networks Statistical and Data, 2019
The International Biometric Conference (IBC) Young Statisticians Showcase Award, Committee Chair 2018, 2020

Obstetrics, Reproductive and Urologic Drugs Advisory Committee (ORUDAC) [formerly Bone, Reproductive and Urologic Drugs Advisory Committee (BRUDAC)], US Food and Drug Administration (FDA), Member 2017-present

Data and Safety Monitoring Board, VA Cooperative Study, CSP 594: Comparative Effectiveness in Gout: Allopurinol vs. Febuxostat, Member 2017-2021

Data and Safety Monitoring Board, PCORI funded Study, I-STOP-AFib, UCSF (PI Gregory M Marcus), Member 2017-2020

Representative to the Council of Sections, Biometrics Section of the American Statistical Association, 2017-2020

Biostatistical Methods and Research Design (BMRD) Study Section (Ad hoc member), National Institutes of Health, 2017

Data and Safety Monitoring Board, National Institute of Allergy and Infectious Diseases (NIAID) Transplant Standing DSMB, Member 2015-present

Strategic Thinking in Observational Studies Initiative (STRATOS), Measurement Error and Missclassification Topic Group Chair 2022- present, Publications Panel Chair 2019- present; Member 2015-present

Innovation in Palliative Care (IPC) Grant Review Committee, Cystic Fibrosis Foundation, 2013- present

Therapeutics Clinical Research Grant Review Committee, Cystic Fibrosis Foundation, 2011- present

Laboratory of Infectious Diseases Scientific Review Committee, NIAID, NIH, 2011-2013

Institutional Review Board, Alternate member, NIAID, NIH, 2011-2013

Division of AIDS Prevention Science Review Committee, NIAID, NIH, 2007- 2013

Laboratory of Clinical Infectious Diseases Scientific Review Committee, NIAID, NIH, 2007-2013

Organizing roles in Scientific Meetings

Conference Organizer for University of Pennsylvania Center for Clinical Epidemiology and Biostatistics Annual Conference on Statistical Issues in Clinical Trials, 2014- present

Conference Organizer for the STRATOS accelerated guidance for real world data analysis Lorentz Workshop, Lorentz Center at Oorp, Leiden, The Netherlands, September 16-20, 2024.

Program Chair, Lifetime Data Science Section of the American Statistical Association, 2024; Program chair

elect 2023.

Organizing Committee Member, Radiation Effects Research Foundation Conference on Measurement error in Radiation Epidemiology: Current methodology and future opportunities, Hiroshima, Japan Intended timing March 3, 2020, postponed due to COVID19

Organizing Committee Member, Data Science and Research Opportunities with the Penn CFAR/PDPH Collaborative Workshop, University of Pennsylvania, 2019

Program Chair, Eastern North American Region International Biometric Society, Philadelphia, PA, March 2019

Organizing Committee Member, Statistical Challenges and Opportunities in HIV/AIDS Research in the Era of Getting-to-Zero HIV Infection Conference, Philadelphia, March 2019

Organizing Committee Member, NCI Workshop on Methodological Issues in Measurement Error, NCI, Bethesda, MD November 4-5, 2018

Program Committee, Society for Clinical Trials Annual meeting, 2015

Workshop Organizer for Strengthening Biostatistics Resources in sub-Saharan Africa, Gaborone, Botswana 2011

Editorial Service

Associate Editor, Statistics in Medicine, 2019-present
Associate Editor, Trials, 2018-2021
Standing Statistical Reviewer, JAMA Network Open, 2017-present

Reviewer, Statistics in Biopharmaceutical Research, 2007-2009
Reviewer, Biometrics, 2007-present
Reviewer, Critical Care Medicine, 2008-present
Reviewer, Statistics in Medicine, 2009 - present
Reviewer, American Journal of Epidemiology, 2010 - present
Reviewer, Lifetime Data Analysis, 2010- present
Reviewer, Biostatistics, 2011- present
Reviewer, PLOS One, 2011- present
Reviewer, Biomed Central, 2012
Reviewer, Biometrical Journal, 2013 - 2017
Reviewer, Nature Biotechnology, 2013 - present
Reviewer, Epidemiology, 2014 - 2015
Reviewer, International Journal of Biostatistics, 2016
Reviewer, Annals of Statistics, 2016
Reviewer, Nature Medicine, 2016-2017
Reviewer, Clinical Trials, 2017 - present
Reviewer, Statistical Methods in Medical Research, 2017-present
Reviewer, Annals of Applied Statistics, 2018-present
Reviewer, American Journal of Clinical Nutrition, 2018-present
Reviewer, Pharmaceutical Statistics, 2018-present
Reviewer, Nature Communications, 2019-present
Reviewer, Journal of the American Statistical Association, 2019-present

Professional Memberships

American Statistical Association (Member 2004-Present, Biometrics Section Representative to Council of

Sections 2017-2019, Biometrics Section Chair-Elect/Chair/Past-Chair 2020-2022, Byar Award Committee 2020-Present; Lifetime Data Science Program Chair-Elect/Chair/Past-Chair 2022-2025)

International Biometric Society (Eastern North American Region (ENAR) Member 2010-present; Regional Committee member (RECOM) 2020-2022, Young Statisticians Showcase Award Committee Chair 2018, 2020; Program Chair 2019)

Society for Clinical Trials (Member 2010-2019)